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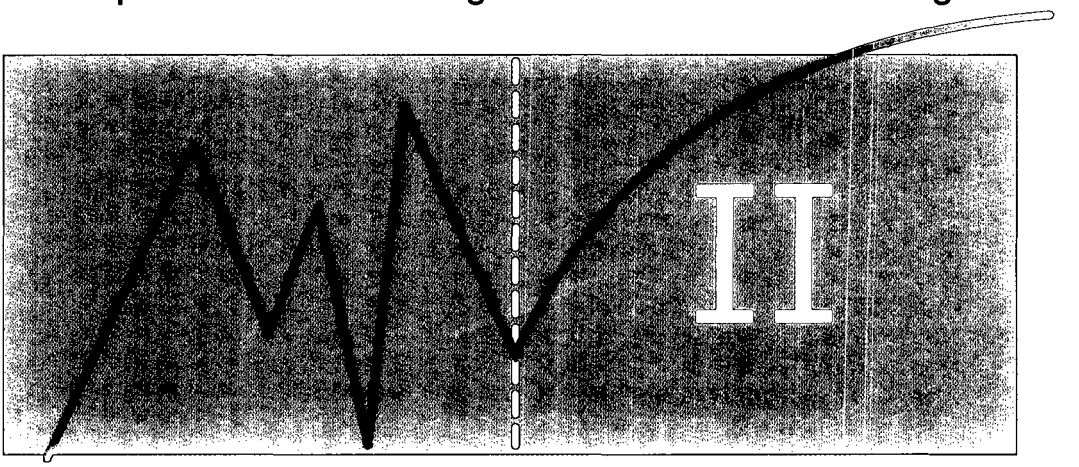
UPDATING AND FLESHING OUT THE DEVELOPMENT AGENDA

Papers and Proceedings of the Venice II Meeting



3-4 October 2002, Venice, Italy

Edited by Carlos A. Magariños and Francisco C. Sercovich

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

economy environment employment

228p
tables
graphs
diagrams

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Foreword

Why this Venice series?*

The key reason for this series lies in the distressing fact that the current state of deprivation of much of the developing world's population makes it very hard, if not impossible, to reconcile the policy prescriptions of the conventional agenda with the nurturing and development of democratic forms of governance.

Unless the basic needs of the population are catered to in a sustainable way, and the means for addressing those needs are duly factored into development policies and strategies, this quandary threatens to derail efforts to achieve more inclusive patterns of globalization – however well inspired they may be.

After having visited the leaders and communities of over 80 developed and developing countries, some of them more than once, two things have become clear in my mind.

First, in that large number of countries where most of the population barely manage to earn subsistence wages, the success or failure of the *economic* agenda largely determines the fate of the *political* agenda, the quality of the democratic system and the potential for social advances.

Second, the conventional set of policy prescriptions does *not* ensure that a positive mutual feedback between these two dimensions, the economic and the political.

Our approach is predicated on the central hypothesis that such positive feedback depends vitally on productivity performance. This performance underlies the potential for the synergy we are seeking, and is the key guarantee of its sustainability. This issue is at the core of our Venice discussions, which explore its many aspects with a view to proposing ways and means of approaching it.

*This book reports on the second gathering of the series. For the first one, see Magariños and Sercovich, Eds. (2001).

It is this rationale which underlies our belief in UNIDO, that what matters most about industrial development is the contribution it makes to economy-wide productivity gains. These gains are ultimately what define the scope for genuine social improvements.

My purpose in organizing this Venice series is to assist political leaders in the developed and developing countries to move forward this kind of agenda, with the emphasis on the developing countries' need to get a firm grip on productivity performance as a key gauge of advances in economic reform, social progress and good governance.

Carlos Magariños

Contents

Abbreviations

ACP	Africa Caribbean Pacific
ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
CAP	Common Agricultural Policy
CGAIR	Consultative Group on Agriculture Research
CIS	Commonwealth of Independent States
CMO	Common Market Organization
CRADA	Cooperative Research and Development Agreement
DFID	Department For International Development
DOE	Department of Energy
EBA	Everything But Arms
ECLAC	Economic Commission for Latin America and the Caribbean
EU	European Union
FDI	Foreign Direct Investment
FTAA	Free Trade Agreement of the Americas
GATT	General Agreement on Tariff and Trade
GDP	Gross Domestic Product
GE	General Electric Company
HDI	Human Development Index
HIPC	Highly Indebted Poor Countries
IADB	Inter-America Development Bank
ICT	Information and Computer Technologies
IMF	International Monetary Fund
IPR	Intellectual Property Rights
LDC	Least Developed Countries
LGC	Less Globalized Countries
MBDC	McDonough Braungart Design Chemistry
MGC	More Globalized Countries
NAFTA	North American Free Trade Agreement
NIH	National Institutes of Health
NYU	New York University
ODA	Official Development Assistance
ODA	Overseas Development Assistance
OECD	Organization for Economic Cooperation and Development
OPEC	Organization of the Petroleum Exporting Countries
PET	PolyEthylene Terephthalate
PPP	Purchasing Power Parity
R&D	Research and Development
SADC	Southern African Development Community
TFP	Total Factor Productivity
TIGER	Transformation, Integration and Globalization Economic Research

TRIPS	Trade-related Intellectual Property Rights
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
UR	Uruguay Round
US	United States
USPTO	United States Patent and Trademark Office
WB	World Bank
WEF	World Economic Forum
WEO	World Economic Outlook
WSPiZ	Leon Kozminski Academy of Entrepreneurship and Management
WTO	World Trade Organization

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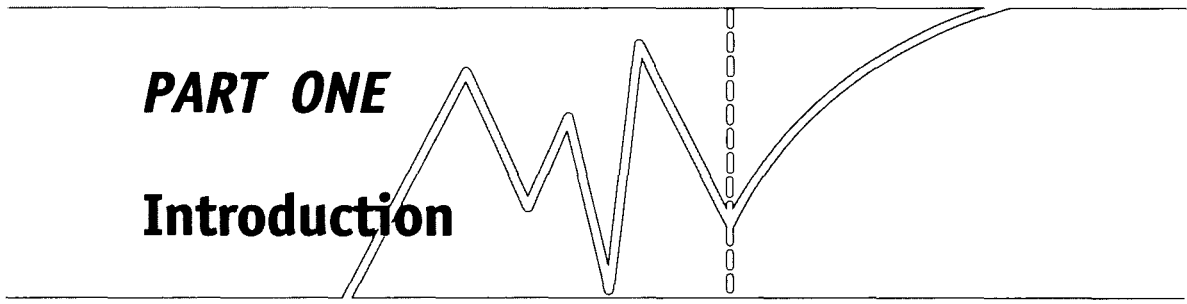
PART ONE

Introduction



Chapter 1

A Development Agenda in Need of Updating and Fleshing Out

CARLOS A. MAGARIÑOS AND FRANCISCO C. SERCOVICH

Public consensus around reform policies ultimately stems from economy-wide productivity gains; therefore, it is essential that public policies take into consideration two basic features: how long it takes for these gains to materialize, and how the population at large perceives them.

One of the most important lessons of the 1990s is that, in the current global economic framework, appropriate institutional and market conditions are necessary, but not sufficient, to lead economic agents into a sustained growth dynamics. To mobilize private sector-led growth, a vibrant network of reciprocal interactions among economic agents, markets and institutions is also indispensable.

The main purpose of this VENICE II encounter is to cross-fertilize ideas about the present status of the Development Agenda—the set of policy prescriptions that seek to achieve, on the one hand, trade and financial liberalization and macroeconomic stability, and on the other, institutional reforms.

More particularly, the aim is to advance towards specifying which interventions and strategies should be pursued in the current market-driven global economy in order to ensure the levels of public consensus that are necessary and essential to sustain the reform processes; to contribute key ideas that will help consolidate the progress already achieved in the developing world; and to identify the best ways in which UNIDO can support such progress through its technical cooperation programmes.

We can hardly think of a better way to convey the importance this has for us than to refer you to the reforms that UNIDO has undergone since 1998. One of the basic purposes of these reforms has been to *modernize the concept of industrial development and the means of pursuing it.* In the 21st century industrial development can no longer be seen as a hardware-intensive business. The information technology revolution and the opening to trade and investment flows have influenced our perception of what industrial

development is all about. Nowadays, it is better understood as a process of mobilizing knowledge, information, skills and technology throughout the economy, with industry acting as a key lever.

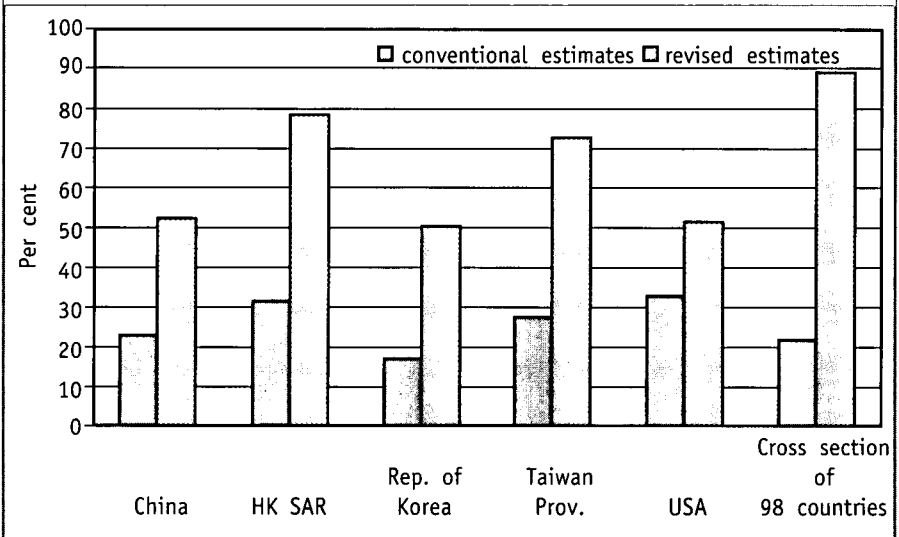
In other words, it is about *enlisting the industrial sector to improve economy-wide productivity.* This is why in UNIDO we concentrate on analysing how interventions in the industrial sector may contribute to productivity growth in the economy as a whole. Our technical cooperation programmes are meant to translate these ideas into practice to support the development policies of our 169 Member States and the consensus reached by the international community in the Millennium Declaration.

Productivity as source of growth

Recent revisions of growth accounting grant productivity a far more important role in explaining economic growth than had previously been acknowledged. These revisions have led to the conclusion that increases in total factor productivity (TFP) are the key variable in explaining the rate of economic growth in emerging economies and, just as important, the dispersion in per capita income in 98 selected countries.

[Figure I.1 illustrates the differences between conventional and revised estimates for the United States and a group of countries in Asia, and differences in per capita income for a cross-section of 98 countries over 1960-1995.]

Figure I.1 Growth accounted for by TFP (various estimates, per cent)



Source: UNIDO based on various authors.

The new results take into account, among other things, that a significant portion of capital investment is induced by efficiency gains—so such investment has to be attributed to those gains. In other words, unless the marginal product of capital is raised through higher productivity, capital accumulation would not occur at the rate observed.

TFP is still "the measure of our ignorance" (M. Abramovitz), and will continue to be so far as long as we lack a better means of gauging the precise sources of increased efficiency. And without even a rough measurement of these sources we would lack vital empirical grounds for policy design.

But how does all this relate to the discussion on the Development Agenda? Is UNIDO's diagnosis right? Are we in UNIDO making the appropriate contributions through our technical cooperation activities?

The paradigm of the 1990s

The broad consensus arrived at over the last few decades on the need for macroeconomic stability and trade liberalization has led to an important boost to wealth creation on a global scale.

Trade liberalization and macroeconomic stability, on the one hand, and democratization, on the other, were perceived as mutually supporting. It was also believed that these economic policies were popular in and of themselves, to the point of being taken for granted.

In fact, observable trends in Latin America and Eastern Europe did suggest a positive relationship between economic stability and liberalization, democratization and support to the reform processes. This reading may be called *the paradigm of the 1990s.*

This paradigm collapsed with the start of the new millennium. Reform programmes lost the popularity they had initially enjoyed. Policies that had formerly attracted popular support to the reforming governments appeared to become the reason for rejecting further reforms. Why did this happen?

People respond to the incentives they receive from the economic system in daily life. People did not support policies of macroeconomic stabilization and trade liberalization for their perceived intrinsic merits, *but only inasmuch as they resulted in tangible welfare improvements.* These observations, which could be considered a matter of common sense, seem to be absent in some of the analyses made by multilateral organizations and by many economists and analysts.

Whereas macroeconomic stabilization and external opening can translate into welfare gains in the short run, institutional reforms and reforms in areas such as education and health take much longer to bear fruit. Popular consensus often peters out in the intervening period, which raises the key issue of the timing and quality of the reforms themselves. If they fail to address medium- and long-term outcomes, they are fated to lose momentum and eventually collapse.

Our thesis is as follows: public consensus around reform policies ultimately stems from economy-wide productivity gains; therefore, it is essential that public policies take into consideration two basic features:

- How long does it take for these gains to materialize.
- How does the population at large perceive them.

Towards a new paradigm

People support policies only to the extent that they generate welfare improvements within a reasonable timeframe. And these improvements can only be sustained through productivity gains. These gains, in turn, require solid macroeconomic and fiscal policies and gradual liberalization of the external accounts. But does this suffice? It certainly does not.

Drawing on the examples from many countries that have embraced the paradigm of the 1990s, we can conclude that the current Development Agenda and its policy prescriptions are simply not enough for productivity performance to ensure the necessary support for the continuity of reform processes. What was then wrong with the reform processes of the 1990s? Was it that, because of some intrinsic features, they were not really designed for success? Was there something wrong in the policy prescriptions pursued?

Maybe there was nothing wrong with the policies themselves but, rather, with the way they were followed up and their impact evaluated.

We need to closely monitor the economy's productivity performance at all levels of aggregation. I think this is the best available early-warning gauge to diagnose emerging troubles in economic reform programmes. This gauge, which is carefully and routinely monitored in the rich countries, is largely neglected in the developing world. Is it not intriguing that often developing countries appropriate standards to assess and monitor microeconomic performance but that similar standards are not offered to gauges wealth creation in the real sector of the economy?

Different lead-times for reforms to translate into economy-wide productivity gains are probably what explain why the "second-generation" institutional reforms have appealed less to the public than the first-generation, market-oriented reforms. Abating inflation through macroeconomic stabilization packages generates an immediately felt wealth effect whereas reforms relating to the supply of public goods such as education, health and science and technology have a more delayed and less clearly perceived impact on productivity performance.

If indeed there is a relationship between economy-wide productivity gains and public consensus, and if the way these gains translate into the daily living conditions of the population matters, then the lead times involved are of the

essence. Our view is that the private sector, because of its capacity to innovate and respond swiftly to opportunities for more productive performance, has a key contribution to make in minimizing those lead times.

These are the reasons why, given a context of appropriate framework conditions, we choose to focus on private-sector-led productivity gains, since these gains are the ones that best translate into enhanced economic performance and, through it, into solid and sustainable improvements in general living standards.

In VENICE I we concluded that for private-sector-led, sustained productivity growth to occur, public policy interventions are required that finely articulate the incentives regime with the supply of public goods. This approach might lead us to a new policy framework with which to address current challenges.

Within this policy framework, capacity building and improved economic performance will yield sustained productivity gains provided that they concur to boosting technical change through their reciprocal interaction.

[Figure I.2 illustrates schematically the factors that come together to lead to enhanced productivity and hence to quality growth.]

Given that most technologies required in developing countries are already available, why is technical change important for them as a source of productivity growth? The answer is that mastering foreign technologies requires domestic learning and adaptation and these, in turn, give rise to all sorts of minor, local innovations that are the stuff of technical change in developing countries. Since a good deal of adaptive knowledge is a public good, this raises important issues of public policy relating, for instance, to the fields of intellectual property rights and innovation financing.
Thus we concluded in VENICE I that:

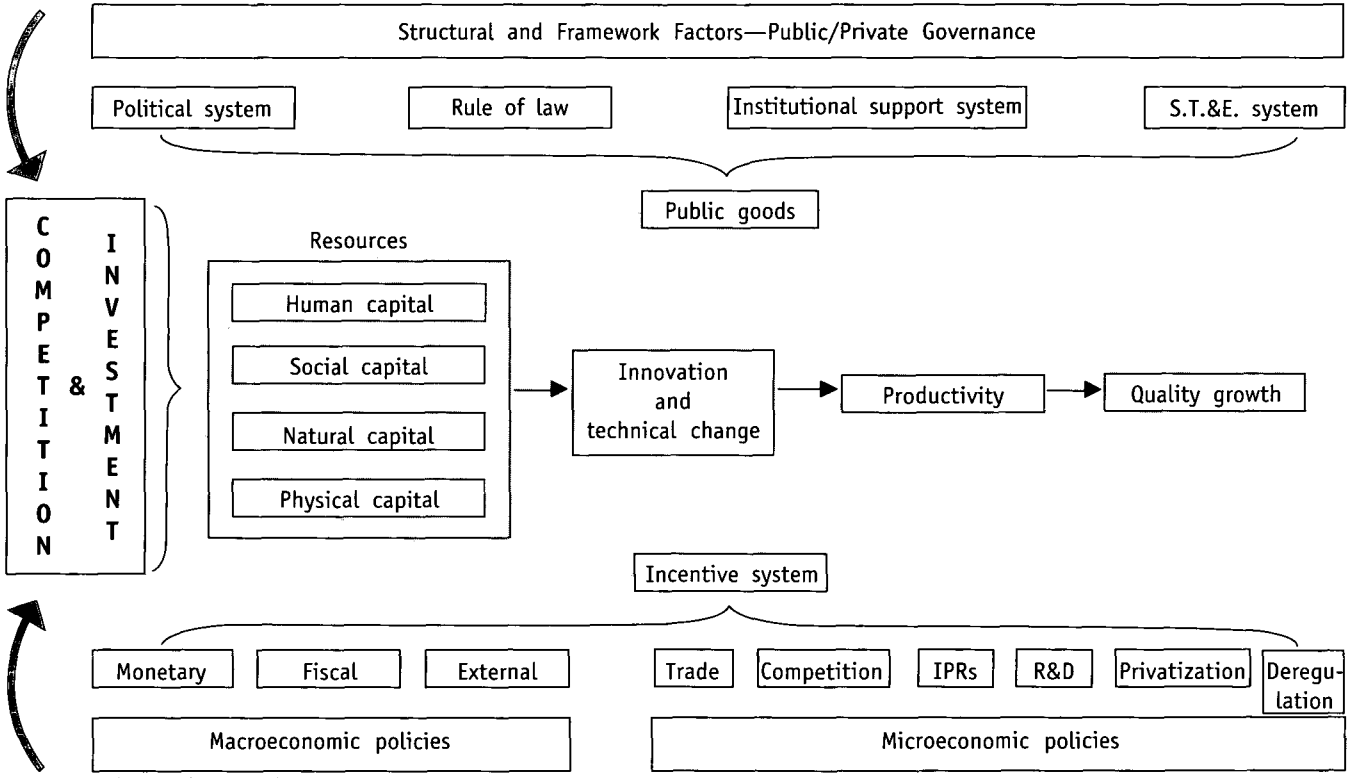
- Productivity performance is at the core of the sustainability of reform programmes in developing countries.
- The quality of reforms ought to be seen from the perspective of their impact on such performance (Magariños and Sercovich, 2001).

With VENICE II we attempt to advance along these lines and discern how best to ensure the appropriate working of the complex set of interactions required for productivity growth to be sustained.

Sustained productivity growth and new policy interventions

Under the current conditions of the world economy the need for market-oriented and institutional reforms is beyond discussion. As mentioned earlier,

Figure I.2 Productivity for quality growth



Source: Magariños and Sercovich (2001).

we focus on private-sector-led productivity gains because these can ensure the most tangible and effective impact on living conditions and thus attract the necessary levels of public support required for reform processes to have the necessary continuity.

Under the conditions just outlined, we believe that integrating into world flows of trade, investment and environmentally sound technologies is crucial to the developing countries' prospects of achieving private-sector-led productivity gains in the foreseeable future.

Any assessment of those prospects must consider:

- The interplay between the economic, social, institutional and political spheres in fostering steady productivity growth and equity.
- The economic rationale for defining how best to connect developing countries with the world economy.
- The workings of the incentives and public goods supply systems and public policy as a whole.

In the conventional prescription, once developing countries offer appropriate market conditions, the economic agents will produce the necessary growth momentum. To create jobs, higher investment is prescribed, which in turn is expected to result from macroeconomic stability and the liberalization of foreign accounts.

Although many developing countries complied with most of the Development Agenda's policy prescriptions and implemented market-oriented reforms, over the last few years they accounted on average for about a fifth of global FDI flows—or less than half of this if the five largest recipients are excluded. While, alas, there is little reason to expect changes in this pattern, developing countries will have to create the bulk of the new jobs required globally. At the same time, the best-educated and trained workers will continue emigrating to the advanced countries.

In the face of this, the conventional prescription is to increase the domestic savings rate. For this, sound fiscal systems are required. But wealth-creating, tax-paying activities must first be created, along with dynamic export growth.

This, in turn, implies that developing countries need to keep expanding their share in world trade, with unfettered market access and rapid technology absorption through dynamic learning processes and the mobilization of their innovative and entrepreneurial capacity.

So how can they actually attain the necessary productivity gains? To begin with, appropriate and effective interventions are needed. The experience of the Asian Tigers offers abundant examples of successful interventions. However, this experience is the only one the world economy has offered in the last 50 years (only replicated in speed by China through its own brand of

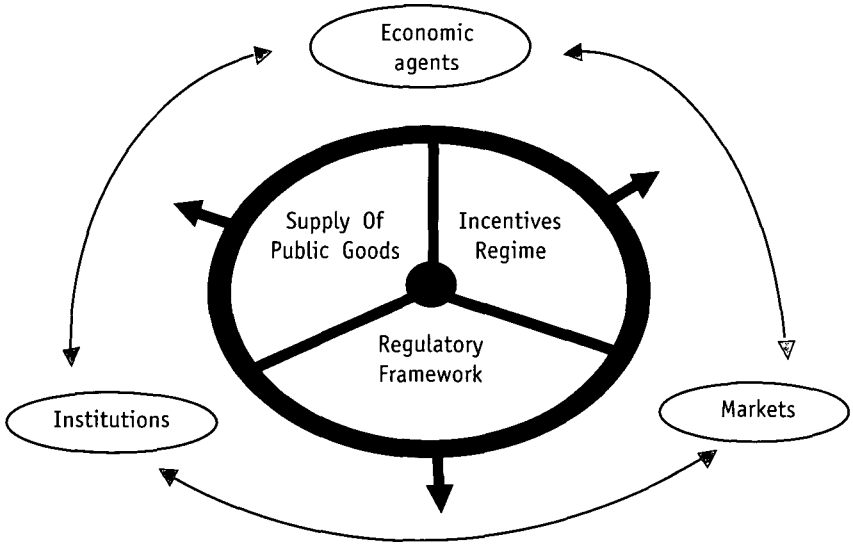
catching-up) (Magariños, Long Yongtu and Sercovich, 2003). A great number of the public policies implemented by the Tigers are no longer available as a result of the change in the rules of world trade.

Perhaps one of the most important lessons of the 1990s is that in the current global economic framework, appropriate institutional and market conditions are necessary, but not sufficient, to lead economic agents into a sustained growth dynamics. To mobilize private-sector-led growth, a vibrant network of reciprocal interactions among economic agents, markets and institutions is also indispensable. Conventional economics normally focuses on the impact of individual (institutional, educational, tax) reforms rather than on them as an interactive network. Such a network is largely absent in developing societies. And, just as the interactions, when they exist, normally contribute to productivity gains, when they do not, the ability to generate such gains is handicapped.

It becomes therefore necessary to identify the mechanisms and instruments required to promote the key interactions among agents, markets and institutions, viewing them not as isolated players but as part of a complex network made up of their reciprocal links. Only then can a dynamic performance be expected.

[Figure I.3 illustrates schematically the interactions which must be present to enable the improvement of productivity.]

Figure I.3 The key interactions



Source: UNIDO.

Two illustrations

Let us illustrate the above through two examples from recent experience: one about Argentina and the other relating to the emergent countries.

Recent evidence on Argentina shows how, even under reasonably good macroeconomic conditions, microeconomic barriers to productivity growth can subsist. It also emphasizes how important it is to synchronize the regulatory and incentives framework and public goods supply system if favourable macroeconomic conditions are to translate into sustained productivity gains—so that microeconomic performance strengthens rather than weakens macroeconomic stability.

[Figure I.4 compares productivity growth in Argentina in two periods, 1993-97 and 1997-2000 and illustrates how under roughly the same macroeconomic conditions, productivity growth can vary considerably, by sector and for the economy as a whole. It is worth noting that 1997 was probably the year in which popular support began to dissipate for economic reforms that had been decisive in securing the re-election of the government.]

Evidence compiled by UNIDO identifies divergent patterns of growth and structural change even among a select group of emerging countries. That divergence is no doubt associated to their varying productivity performance and this, in turn, is associated to the quality of the links between agents, markets and institutions.

[Figure I.5 shows the trajectories of nine countries over the period 1985-1998. As it reproduces rankings, advances towards zero represent improvements in performance.]

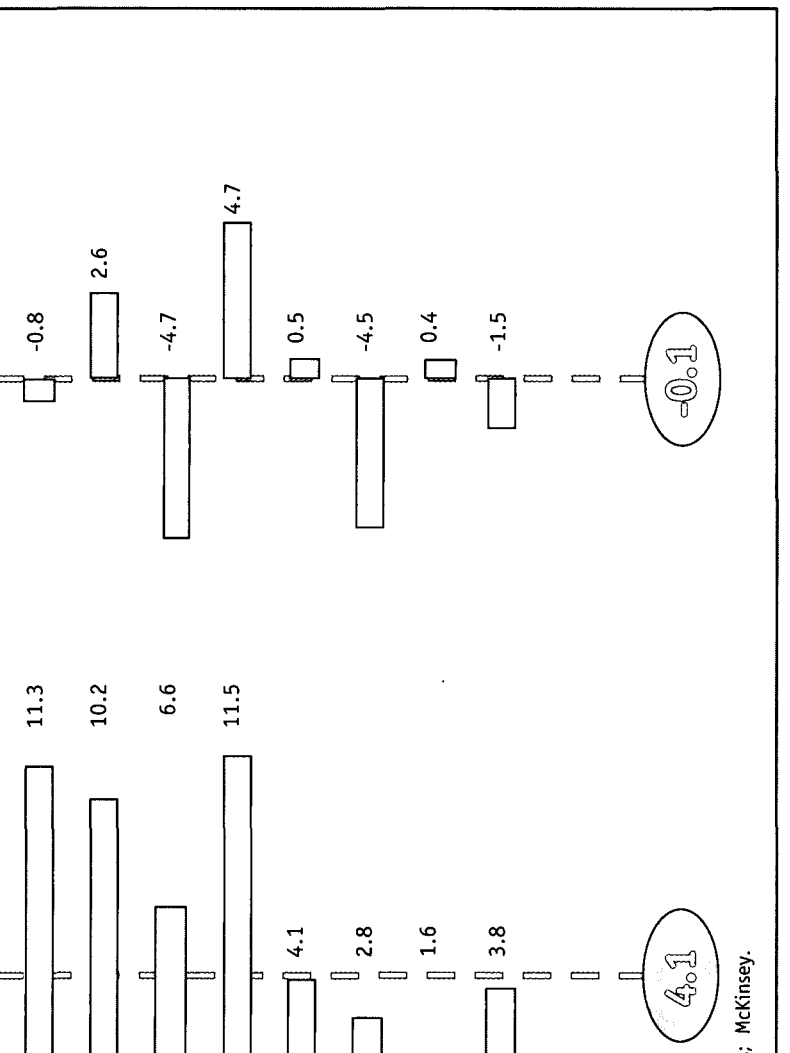
In sum, knowledge brought to bear on industry through human capital formation, technology absorption, adaptation and diffusion, and mobilization of the domestic innovative potential has been a key factor in recent industrialization experiences and this continues to be the case.

Synchronizing the supply of incentives and public goods

The incentives system must be coordinated with the supply of public goods in the context of an appropriate regulatory framework to ensure that trade and investment flows create the necessary productive interactions between agents, markets and institutions.

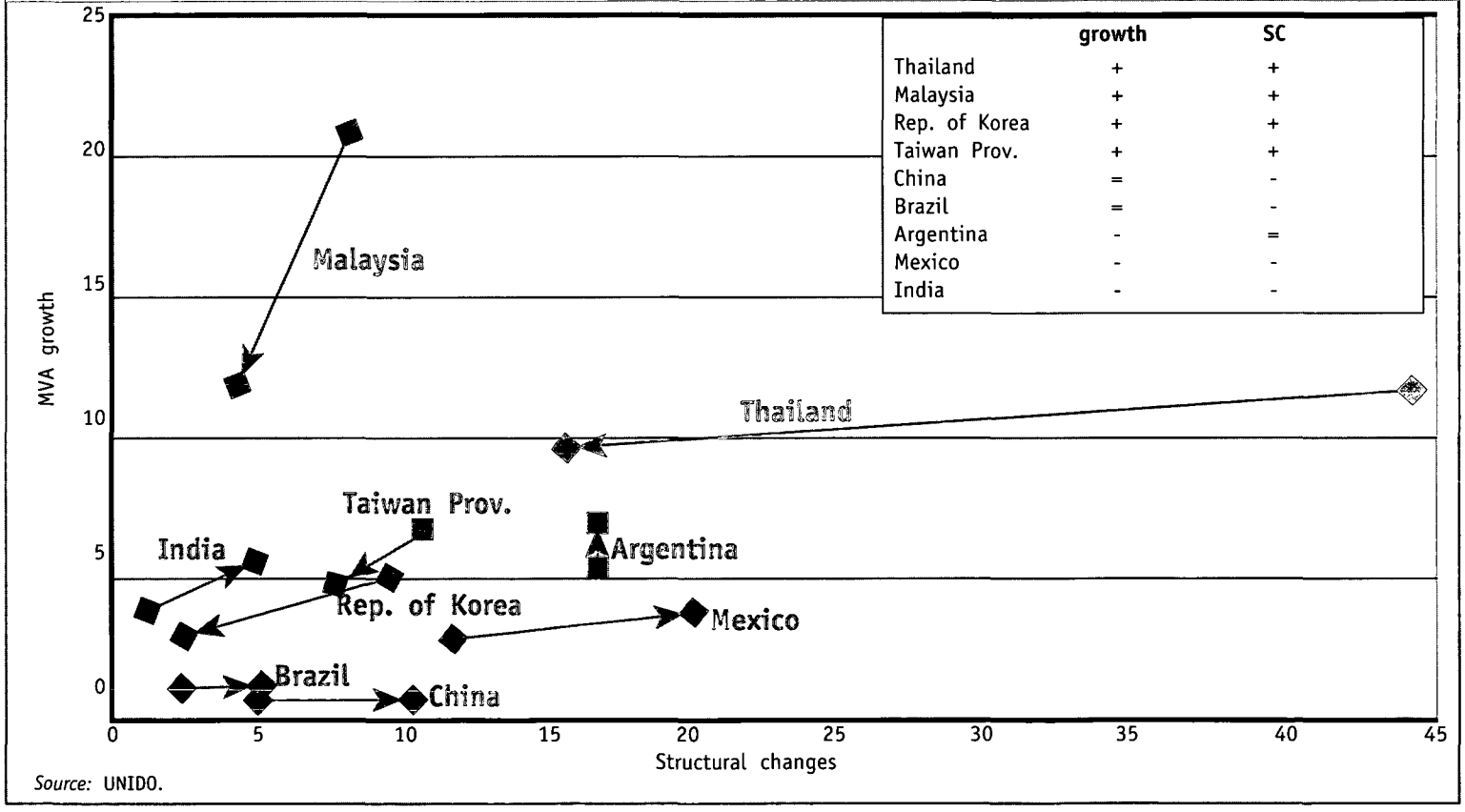
Capacity-building and improvements in economic performance will only translate into sustained productivity gains as long as they effectively foster innovation and technical change through their reciprocal interaction. But this also requires attending to the key interactions of the economic system.

Figure I.4 Argentina: productivity growth by sector (compound annual rate, per cent)



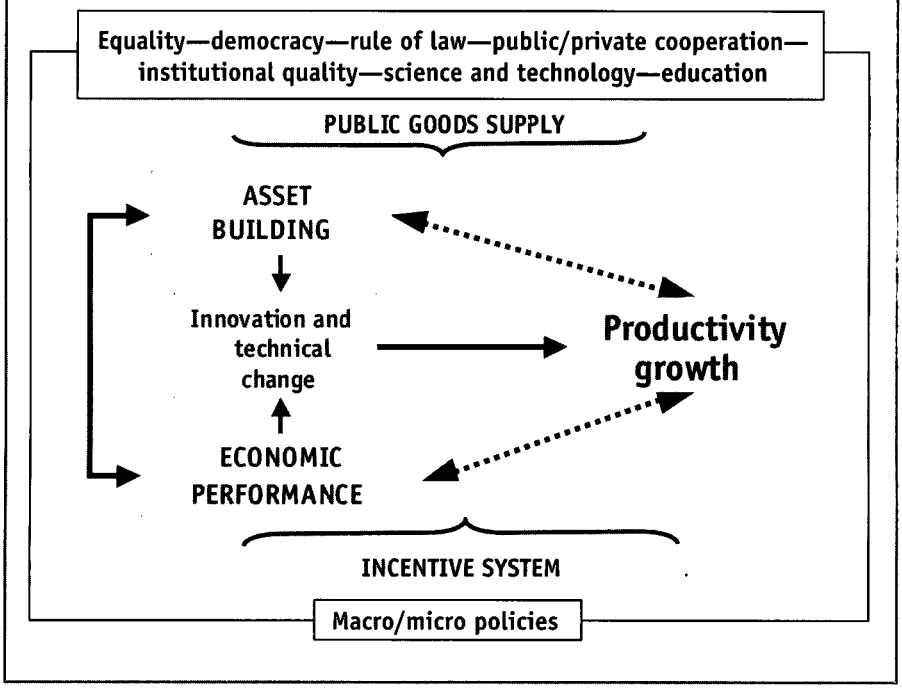
Source: Dirección Nacional de Cuentas Nacionales; McKinsey.

Figure I.5 Emerging countries: relative performance 1985-1998 (ranking in the developing world)



Source: UNIDO.

Figure I.6 The underpinnings of long-term productivity growth



[Figure I.6 provides another schematic illustration of the key interactions that provide the ground for productivity enhancement.]

The respective interventions are vital to ensure the sustainability of economic reform programmes in the developing countries. Their specification and assessment are essential parts of UNIDO's research agenda, since they can ensure the public consensus that is required to give the necessary continuity to the reform programmes and thus to make sustainable productivity gains possible.

Unfinished tasks

We shall conclude by drawing attention to a number of unfinished tasks relating to the need to update and flesh out the Development Agenda. I shall first point out some pluses and minuses in existing knowledge and will then suggest a few avenues towards a relevant research agenda.

Constraints on the trade front

The multilateral trade order rules out many of the policies and instruments used in the past to promote industrialization by both early developers and latecomers. It therefore constrains the extent to which successful past experiences can be replicated. But the extent of these constraints can be exaggerated. Public policy enjoys considerable leeway to manoeuvre, for instance, in fields such as entrepreneurial, social, regional, environmental, scientific and technological development.

We perceive a vacuum of research on this important topic. In fact, the analyses on policies and policy instruments successfully employed in past experience, as that of the Asian Tigers, normally conclude that there is little or no scope for replication in the rest of the developing world. But this ought to be the point of departure, rather than that of arrival, as it usually is. We need to specify which policies and policy instruments are best suited to the *current* multilateral order.

For instance, there are three areas of intervention that are compatible with the new normative framework of world trade: they concern the *non-actionable subsidies* for regional, environmental and scientific and technological development. With macro stability and sound financial and budget practices, the promotion of technological, entrepreneurial and innovative development is accepted as "best practice" as long as it takes place with instruments that do not constrain but encourage competition. This is a promising line worth more attention.

Resource endowment

Another point often forgotten is that, while industrial development is an apt means of wealth creation, it needs to go hand in hand with the evolving domestic resource endowment. Rich countries with important natural resource endowments, for instance, have taken full advantage from them through R&D, learning and innovation, throughout their industrialization processes.

Unless we work more carefully on these issues, our effort may be lost since we may not be able to take advantage of previous progress to forge consensus around policies.

Equitable distribution

Recent research shows that more equitable distribution of income and assets, particularly intangible assets, has become a key enabling condition for sustained private- sector-led growth. We need to build on this and other insights to provide a more solid platform for reform policies in the developing countries and to make productivity convergence a reality.

Four topics for a research agenda

We seek in VENICE II to better define an appropriate conceptual framework to guide UNIDO's technical cooperation activities. But the fruits we hope to gather actually go beyond that, as source of insights and leads on how best to tap the opportunities available for developing societies to pursue sustained growth while achieving ever higher standards of equity. From this perspective, I suggest four key topics for a research agenda I believe needs to be developed.

- How can developing countries entrepreneurial and innovative development best be promoted through market-based incentives? How, in this context, should competition policy, industrial property rights legislation and innovation financing be designed and enforced to yield joint results?
- How best can the private and public sectors cooperate to develop the supply of public goods required to foster domestic entrepreneurial and technological development, and how best to articulate that supply with the incentives system to attain sustained, private-led productivity growth?
- Which are the most appropriate institutional arrangements for developing countries to gain access to, assimilate and master the technical knowledge already available internationally to promote domestic development and share in dynamic international markets?
- Which are the best strategies to make markets, agents and institutions in developing countries evolve and interact among themselves in such a manner that international trade and financial flows can effectively induce the mobilization of skills, knowledge and technology for domestic development?

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Comments and Avenues of Enquiry

Building industry from agriculture: focusing on the "micro" area

FREDERICK SUMAYE
Prime Minister
United Republic of Tanzania

It is important that VENICE II has brought together people from various sectors: government representatives, people from academia, from the private sector and various other groups. This is important because the problem of development, particularly in the developing world, has never had a very straightforward, clear answer. From the politicians, you will get one set of answers. From the economists, particularly the academicians, you will always get another. Go to another group, and again it will be different. So bringing all together helps us move as a group, though we represent various sectors.

What is very clear is that part of the people in this world who are really poor, need to be helped out of the poverty cycle. These people do not enjoy being poor, they would want to be something else, but they have been in that group for a long time. It is also true that over a number of years now, probably for the last 50 years or so, there is a part of the globe that has been accumulating a lot of wealth, and there is also a part of the globe that has been losing a lot of wealth, that has gradually become poorer and poorer. It does not matter that the characters in these groups may be changing slightly: the important thing is that this group is becoming poorer and poorer. This emerges clearly from the figures that we get from World Bank reports and other centres of excellence. The rich 20% has been accumulating more wealth in the last 40 years and the poor 20% has been accumulating less and less wealth in the last 40 years. This is a very dangerous thing if it is not arrested.

Take sub-Saharan Africa: besides new problems now emerging like HIV AIDS, that region has long been very poor; I think the poorest region on the globe. There have been many arguments over why some of these people are poor. Governments have always been one of the reasons—bad governments. But it is not true that all of the poor countries had bad governments. I think there is more to it than that.

In the area of industrialization, it is true that UNIDO is helping a lot: Mr Magariños has given many examples regarding my country, United Republic of Tanzania. Besides the fisheries industries that he has mentioned, UNIDO has been training a lot of women, entrepreneur groups, in food-processing particularly, and most of those small groups have turned out to be very productive. UNIDO is also assisting medium-sized industries, and even those who want to go into larger manufacturing industries, to find partners in the developed parts of the world.

These are quite positive efforts. But beyond that, most of us in the poor countries are dependent on agriculture—particularly the kind of agriculture that we do is not very sustainable. It cannot be sustained for long if we do not also, at the same time, go into industrialization, starting with crop processing. We sell many crops as raw commodities in the world markets, where prices are low. Our farmers are almost giving up. But if we can process those crops and get value-added to them, then I am sure the farmers, with better returns, will improve their agriculture. Of course, and not only in agriculture but also in other sectors, we need technology which is not readily available in the poor countries. We need inputs—a lot of research inputs—and we know research is expensive. We need financing and capital if we are to go into crop processing and other industries.

These are some of the factors we must consider when we talk about getting the poor countries out of the poverty trap. Of course, I am not ruling out the importance of other factors like democratic governance, good governance, the fight against corruption. In quite a number of countries, we have been introducing reforms along those lines. For instance, in United Republic of Tanzania, I think we are very democratic; we are fighting corruption very hard, and have made our governance system more transparent. For this we have been receiving praise even from people such as the World Bank, the IMF and the donor community.

In some aspects we are doing fairly well. Our macroeconomic parameters are quite good; we have attained quite reasonable stability. We are now trying to move into the "micro" sector—and this is where now we need a lot of assistance. The reforms are quite difficult; they are quite a bitter pill to swallow, particularly for the common people. This is an area which we also have to consider very carefully: otherwise, what we have built over time in the macroeconomic area might go down the drain if the "micro" area does not receive the right sort of attention.

Targeting the problem of asymmetric information

HERNÁN MARTÍN REDRADO
Vice-Minister for Foreign Affairs
Argentina

There is one big problem that developing countries will have to confront in the area of trade, which is particularly relevant now that, in Latin America at least, we are engaging in three major negotiations worldwide. One is the Doha Development Round; the other is the Free Trade Agreement of the Americas (FTAA); and the third, in the case of the Mercosur countries—Argentina, Brazil, Paraguay and Uruguay—negotiations with the European Union.

As a policy practitioner, what I see is that we have a big problem of *asymmetric information*. Many countries do not have the institutional capacity to measure the sectoral impact of what these trade negotiations may mean. What we may have is that at the end of 2004 a group of countries may have made some progress on some matters—but in areas like government procurement or services, clearly the institutional capacity is lacking. This is true not only for Latin America, but all over the emerging world: the case is the same in Eastern Europe, not to mention the Caribbean.

Let me tell you what we are doing in Latin America that could help overcome this obstacle. First, we are establishing a pattern of negotiations that could also work throughout the emerging world. Two Latin American countries that have been particularly successful, Mexico and Chile, have built up a multi-polar set of negotiations. The most widespread image of Mexico after 1995 associates it with the North American Free Trade Agreement (NAFTA), but Mexico has actually celebrated 34 free-trade agreements—with East Asia, with Latin America, with the European Union, with Israel, with the Middle East. We are exploring multi-polar negotiations, not only relying on the multilateral ones, that will develop at least sectoral approaches towards trade agreements with other emerging countries. For example, Mercosur has initiated new trade negotiations with South Africa, not seeking a full-fledged free-trade agreement, but focusing on sectors where we could be complementary. Amazingly enough, we found that the automotive sector was one that fitted the bill. Also recently, in Buenos Aires we hosted a ministerial visit from India and we focused on two sectors where we could lower trade barriers: compressed natural gas to make fuel cheaper for transportation, and information technology.

As policy makers and international institutions trying to overcome the problem of asymmetric information, we must focus on several key questions. How do we make the appropriate information available? What kind of model do we have to build? What kind of negotiation pattern should the emerging world adopt vis-à-vis the multilateral trade rounds?

It is my contention that we will have to do more in terms of adopting a multi-polar strategy, rather than North-South dialogue.

Another significant contribution would be what I call *democratizing information*. By that what I mean is identifying the potential demand of your exports in different markets. If you go by customs nomenclature, point by point to six or eight digits, identifying what could be exported and what is demanded by different countries, there is a lot to do in this area. And there is clearly much to do also in compiling information on the logistics of how to export, the credit facilities, the trading companies, the warehouses, in the various markets.

This is important because one of the key areas where we could make reforms more attractive to the population is by showing how they could interact more with the rest of the world. It also links up with what we have heard about fostering a network of interactions between the public sector, the private sector, science and technology, and education. This could be an area in which we could reduce the information asymmetries as we engage in the current trade negotiations. Instead of putting all the eggs in the basket of multilateral trade negotiations, I contend that we can do better by improving the flow of information among countries which have different patterns of development, and aiming not so much at major free-trade agreements but at sectoral progress in those areas where we could complement each other.

Drawing together the two Doha outlooks

KOICHI DANNO
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Mitsubishi Research Institute, Inc.

The Doha Development Round may be expected to further accelerate globalization; the concern is that the marginalization will remain, as pointed out by Prime Minister Sumaye. What we see in debates on the mix of issues is that the WTO, even as it recognizes the need to consider the position of developing nations, emphasizes the benefits of globalization, while the agencies of the United Nations—UNIDO, UNDP and UNCTAD—focus more on negative aspects such as marginalization. Its seems to me that what we need is for the United Nations, WTO, the World Bank, ADB and other international organizations to get together for a thorough discussion out of shared awareness that these are critical, substantive issues for all humanity.

With that same common awareness, we must create an international control mechanism with coherent governance pursuing the benefits of globalization, while minimizing marginalization.

Making the trade negotiations the main context

MANSOUR CAMA
President
National Confederation of Employers of Senegal

As far as updating the Development Agenda is concerned, it is very important to put things in the context of the current trade negotiations—and on this I agree with Vice-Minister Redrado. We in the sub-Saharan countries, together with some other countries from the Caribbean and the Pacific are involved in the negotiations with the European Union about what they call the ACP (Africa Caribbean Pacific). And one thing we consider very important in the framework of these negotiations is the capacity-building for negotiation, as well as the capacity-building to update our economies—the full use of the transition period up to 2008 to build up the capacity of our economies and become more competitive. This is an important priority we have to take into consideration in the Development Agenda—if we want to stick to what we need as developing countries.

As far as the private sector is concerned, in Senegal we are seeking to build a partnership with our government, which I think may be constructed with the support of bodies like UNIDO. We think that information is very important, and so is updating the administration, because most of the time our government seems to have an outdated mentality about the role and the position of the private sector, and how to arrive at this partnership in order to develop our country. In the conception and definition of policies, most of the time the private sector is absent, and when the government wants the private sector to apply them, this makes things more difficult. We think that the partnership should start by focusing on the definition of policies, and then move on to what we can call everybody's role in the framework of development.

If we start with what you call the interactive network, with a clear definition of the role of every party, I think it will be easier for our countries to use UNIDO as we are doing it now in Senegal, to concentrate more on the needs and on the priorities.

Productivity as a country-wide feature

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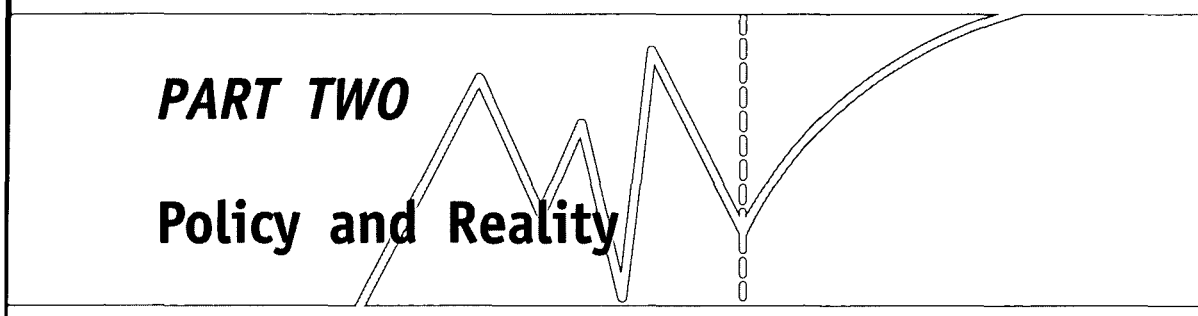
I want to add one comment on productivity and productivity growth. It is an empirical observation that I think is quite significant: if you look across

countries at levels of productivity, in a given country productivity tends to be higher in all sectors than in other countries. In other words, the variation of productivity across countries is not sector-specific.

If you have a high-productivity country, productivity is high in every sector. If you have a low-productivity country, productivity is low in every sector. You see that even in the time series evidence from Argentina (figure I.4): productivity in all the sectors went down between the first period and the second period. And that seems to me to pose some questions about what is the appropriate way to intervene to increase productivity, and in particular about the contribution of what you might call sector-specific interventions as opposed to economy-wide interventions, both macro and micro.

PART TWO

Policy and Reality



Chapter 2

Globalization and Catching-up in Emerging Market Economies

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Catching the train of progress has only been proven possible if three favourable circumstances co-occurred:

First, economic development always requires technological progress. Necessary conditions of technological progress are high-quality human capital, an adequate level of education and science, and efficient system arrangements in these areas.

Second, in order to sustain long-term development trends, it is essential to reform the institutional framework into an efficient market economy. Otherwise, creative enterprise becomes stifled.

Third, a creative feedback between technological progress and economic reform calls for political determination on the part of the political elites, who must be willing to upset the existing balance and to challenge the established position of conservative interest groups.

To believe is the privilege of politicians. Economists should *know*. The economic policy makers—who are typically economists put in charge of politics—usurp the prerogatives of both groups and mistake belief for knowledge. What they believe is that, the way the world is made, the poor should be able to catch up with the rich and reduce the enormous differences between them in levels of economic development. Yet, these differences somehow grow year by year. Today nearly half of the world's inhabitants live on less than two dollars a day, and a billion people—a sixth of mankind—subsist on less than a dollar.

Faith, of course, can help, but knowledge is of decisive importance. What then do we *know* about the capacity of the emerging, relatively backward

market economies to catch up with the highly developed countries? What systemic arrangements and development strategies might lead to this objective? What historic lessons are there to be learned concerning the management of economic growth in the future? How to distinguish the inevitable legacy of the past, which can only evolve in time, from the economic policy options left open? These are the questions that should constantly be addressed, all the more so since the old answers become outdated as the development factors change.

A third of a century ago, in 1969, the United Nations set up an expert group, known as the Pearson Panel, to suggest measures to facilitate growth in less developed countries and to level out the differences in living standards. The Panel proposed development strategies which appeared to promise the backward countries (many of them in the process of gaining independence after centuries of colonialism) that they could attain a 6% growth rate over the coming decades. Countries that thus managed to accelerate their economic growth were expected to become—mainly through the expansion of exports—self-reliant partners in the world economy by the year 2000.

The year 2000 has passed. And it turns out that the course of development outlined by the Pearson Panel is a rare exception rather than a rule. The United Nations established, therefore, a new expert group, this time headed by former President Ernesto Zedillo of Mexico, whose task is to advise on policies aiming to foster economic catching-up and, in particular, to implement the ambitious goals put on the agenda by the United Nations Millennium Summit—one of which was to reduce the number of people living in extreme poverty by at least half a billion by 2015. The Zedillo Panel believes that this could be achieved through rapid economic development, if only the rich countries would increase their annual assistance to poor countries to 0.44% of their GDP (gross domestic product). The trouble is, as we all know, that they would not (although they should) and so development aid lags at a paltry 0.22%. Consequently, the numbers of the poor do not shrink, disparities in development levels increase, and distances to catch up grow. The year 2015 will soon have passed, too, conceivably, without bringing any noticeable improvement. There will be few winners, many more losers, and all the remaining actors are also likely to be dissatisfied with the way the globalized economy operates and with the living standards achieved. Can we do better than that?

Back to the future

The past is gone. And so is the present, because in reality it does not exist, every passing moment turning instantly and irrevocably into the past. Thus all that is left is the future, which is the most important thing. However, in order to couch in rational terms our expectations about the future, we need a good

understanding of the past. Otherwise, we will never manage to forecast future development processes with reasonable accuracy, or to actively shape these processes (which is even more important). For the socio-economic aspects of the future are not only the function of time and some chaotic development processes, but, first and foremost, depend on a conscious development strategy combined with a growth and distribution policy.

Throughout history, *only about 30 nations, with a total population of less than a billion—that is, about 15% of mankind—has managed to attain a relatively high level of development*, with GDP per head exceeding $15,000 in terms of purchasing power parity (PPP).[1] Outside North America and Western Europe, this group comprises the member countries of the OECD (Organization for Economic Cooperation and Development) from the Asia and Pacific region—Australia, Japan, Republic of Korea and New Zealand—as well as Singapore. This level has also been achieved by some oil-exporting OPEC countries (Brunei Darussalam, Kuwait and Qatar), certain economies with special structural characteristics (like the Bahamas, Martinique and Taiwan Province of China), and a few overseas territories of highly developed countries (like French Polynesia or New Caledonia). In 2001, the highest-income group was joined by the first and only post-socialist country thus far: the tiny (2 million inhabitants) Slovenia.[2] Next in line is the Czech Republic, where GDP per head is expected to exceed $15,000 in 2004.[3]

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[1]PPPs are the rates of currency conversion which eliminate the differences in price levels between countries. PPPs are obtained by evaluating the cost of a basket of goods and services between countries for all components of GDP; PPPs are given in national currency units per United States dollar." (OECD 2001, p. 13). Because of the relatively higher (in dollar terms) cost of living in the United States than in the remaining OECD countries, GDP calculated in PPP terms is, in most of the cases, higher than GDP calculated at the current market exchange rate of a given currency. For instance, with respect to Poland, the OECD estimates the purchasing power parity of the zloty at 1.98 to a dollar. This means that, at the average market rate of 4.35 zlotys to a dollar in 2000, the zloty equivalent of one dollar bought in Poland 2.19 times more goods and services from the representative basket than one dollar did in the United States. In 2001, this proportion decreased to 2.07 because of the appreciation of the zloty by 5.9% (the average exchange rate amounted to 4.1 zlotys to a dollar). Only in six countries (Denmark, Iceland, Japan, Norway, Sweden and Switzerland) is GDP per head calculated in PPP terms lower than GDP in current exchange-rate terms. Characteristically, all the European countries from this group remain outside the euro area. These are the "more expensive" countries in the sense that a dollar exchanged for their domestic currencies buys less than it does in the United States, because of the price differentials. For the inhabitants of these countries, the United States is "cheap". In the remaining countries this relationship is reversed, and there is an inverse correlation between this price differential on the one hand, and the relative development level of a given country and the degree of adjustment of its internal prices to world prices, on the other. For example, within the OECD, the spread between PPP-adjusted and current-rate GDP is largest in Slovakia and smallest in the United Kingdom. In the age of globalization—in view of the progressive market liberalization and integration—differences in this field can be expected to shrink gradually. In the United States, GDP calculated at current rates and at PPP is, by definition, the same and amounts in 2002 to about $37,000 per inhabitant.

[2]According to the estimates of the Washington-based PlanEcon (since 2002 DRI-WEFA, Inc.), per capita GDP in Slovenia (in PPP terms) amounted in 2001 to $15,372 (PlanEcon, 2001b). By way of comparison, the same source puts Poland's GDP at $8,137. The OECD estimates the latter at 15% more, that is, about $9,400. These discrepancies stem from the different methodologies on which the calculations are based.

[3]According to OECD estimates, GDP per capita in the Czech Republic—taking into account the 3.5% growth rate in 2001 and another 4% or so expected in 2002—approaches (in PPP terms) $14,900 in 2002, while the PlanEcon forecast for the same year mentions $13,376 (PlanEcon, 2001b).

Conditions for catching the train

At the other extreme are countries unable to overcome the vicious circle of poverty. Some of them not only fail to close the staggering gap that separates them from highly developed countries, but keep plunging into stagnation and recession, lagging further and further behind not only economically, but also culturally. It happened in the past, and it happens, occasionally, today (Magariños and Sercovich, 2001). No doubt it will also happen in the future. Why? The answer is that only few countries in history managed to catch the train of progress. It was only possible if three favourable circumstances co-occurred:

- First, *economic development always requires technological progress.* Without the spread of new manufacturing methods and the implementation of novel technologies that change the organization of production, no innovation is possible—and it is innovation that drives economic growth. Necessary—but not sufficient—conditions of technological progress also include, obviously, high-quality human capital, an adequate level of education and science, as well as efficient system arrangements in these areas (Kwiatkowski, 2001).

- Second, in order to sustain long-term development trends, *it is essential to reform the institutional framework* of an efficient market economy. Otherwise, even relative technological superiority is no guarantee of rapid economic growth, as creative enterprise becomes stifled.[4] Obviously, creative enterprise is even less possible in technologically backward countries. Thus, without the capacity for economic reform, rapid output growth can hardly be relied on.

- Third, a creative feedback between technological progress and economic reform calls for *political determination on the part of the political elites*, who must be willing to upset the existing balance and to challenge the established position of conservative interest groups. Only then can the "new" gain the upper hand on the "old", which is necessary for a sustained productivity growth. The fear of the temporary confusion that accompanies this kind of change often paralyzes the authorities, who then begin—through their reluctance to stimulate and institute the required reforms—to

[4]In fairly remote times—at the beginning of the 16th century—that was the case with China, which then surpassed Europe in technological advancement. However, the lack of necessary reform and the conservatism of the power structures stood in the way of an economic acceleration—particularly at a later stage, when 18th- and 19th-century Europe took excellent advantage of the subsequent phases of the scientific and technological revolution.

hamper rather than facilitate economic progress and socio-economic development.[5]

Examine the past

One needs to reminisce about the past—including the more distant past, spanning several centuries—if for nothing else, in order to realize, at the outset of a new millennium, that history is happening at all times. Now, too, because of the three momentous processes coinciding today:

- The current phase of permanent globalization (Bordo, Eichengreen, Irwin, 1999; Frankel, 2001; Kolodko, 2002a).
- The post-socialist transformation (Blanchard, 1997; Lavigne, 1999; Kolodko, 2000a).
- The modern scientific and technological revolution (Raymond, 1999; OECD, 2000; Payson, 2000; Kolodko, 2001d).

It is in this context that we should perceive modern developments, so as to avoid missing the train of progress once again. Not everyone succeeded in this task in the past: actually, few did. The same thing is being repeated now: some will get on the train, some will be left waiting, and some might even get pushed off the platform.

Incidentally, this phenomenon has already been observed for two decades. This is shown, for instance, by a World Bank report (World Bank, 2002a) which distinguishes—apart from the rich economies[6]—two main groups of states. Today the term "developing countries" is less frequently used, for the simple reason that some of them are hardly developing. Instead, one speaks about more globalized countries (MGC) and less globalized countries (LGC). This distinction is based on the participation in the international division of labour, measured by the dynamics of foreign trade. A third of the countries

[5]A positive example is provided by the changes in Japan in the second half of the 19th century under the Meiji reform; a negative one can be furnished by the Ukraine, which failed to utilize its relatively better position as regards the state of the production facilities and the technology at its disposal in the 1990s. It is important to note that such losses cannot be made up for at a later time. Thus neither contemporary China is making good the losses, despite its impressive growth, nor is the Ukraine, even if it manages to hold on to the rapid development path it entered at the beginning of the present decade. This is so because the time that was once wasted is irrevocably lost, and no contemporary (or future) economic growth will offer compensation for this loss, as this growth begins at a lower level than it would, had the past opportunities been appropriately utilized. Today these opportunities can only be seen as a more or less distant past, whose promise—if not totally squandered—was at best inadequately exploited.

[6]Interestingly, included among the "rich" economies, apart from the initial 24 member States of the OECD, are not only Hong Kong SAR, Taiwan Province of China, Republic of Korea and Singapore, but also Chile, whose GDP per head (in PPP terms) is the same as Poland"s. In both cases it amounts to about 26% of United States income.

where the growth of the proportion of foreign trade volume to GDP in the 1980s and 1990s was steepest has been classified as MGCs, and the remaining two thirds as LGCs.[7]

The group of 24 countries which have become more actively involved in the world economy (MGCs) has a total population of nearly 3 billion. The 49 countries less tightly integrated through foreign trade with the world system (LGCs) have about 1.1 billion inhabitants. The characteristics of the two groups differ widely, and changes in output level and dynamics, as well as the living standards, follow different trends in either group (see table 2.1).

Table 2.1 Characteristics of more and less globalized countries

Socioeconomic characteristics	*More globalized countries (24 countries)*	*Less globalized countries (49 countries)*
Population, 1997 (billions)	2.9	1.1
Per capita GDP, 1980 ($)	1,488	1,947
Per capita GDP, 1997 ($)	2,485	2,133
Inflation, 1980 (%)	16	17
Inflation, 1997 (%)	6	9
Rule of law index, 1997 (world average—0)	-0.04	-0,48

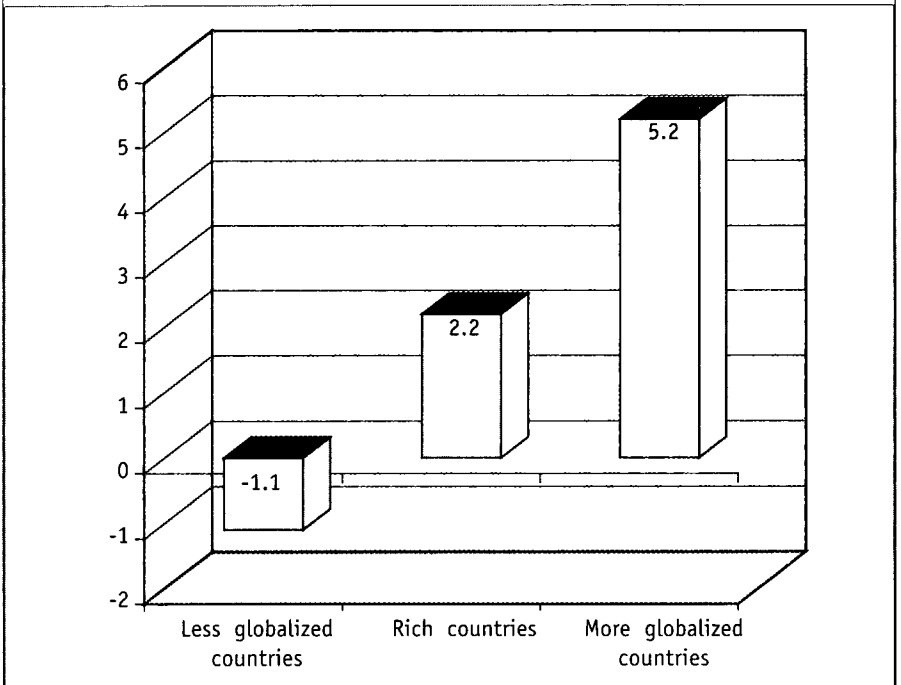
Source: World Bank, 2002a.

In 1980, GDP per head (in PPP terms) in the MGC group stood, on average, at less than $1,500; by 1997, it increased to nearly $2,500—that is, by almost two thirds. In the LGC group, the increase amounted merely to about $200, or less than 10%. Taking into account just the last five years, the respective proportions become even more striking. While the MGCs have kept developing at an average rate of about 5% annually and managed to further increase GDP per head by almost $400, reaching about $3,100 in 2002, the LGCs have recorded a fall of about 6% in GDP per head, to about $1,900 in 2002. Thus the difference in this respect changed from about $500 in favour of the LGCs in 1980 to about $1,200 in favour of the MGCs in 2002. These are significant qualitative differences which alter the face of the modern world.

[7]The "more globalized"—the top third of developing countries in terms of increased trade to GDP between 1970s and 1990s—are Argentina, Bangladesh, Brazil, China, Colombia, Costa Rica, Côte d'Ivoire, Dominican Republic, Haiti, Hungary, India, Jamaica, Jordan, Malaysia, Mali, Mexico, Nepal, Nicaragua, Paraguay, Philippines, Rwanda, Thailand, Uruguay, and Zimbabwe. The "less globalized" are all other developing countries for which we have data. The less globalized group is a very diverse set of countries. It includes failed States whose economic performance has been extremely poor. It also includes some countries of the former Soviet Union that went through a difficult transition in the 1990s. Some of the less globalized countries have had stable but not increasing trade, and positive but slow growth. (World Bank, 2002a, p. 51).

Such tendencies indicate that *within the time span of a single generation, the economies that take a more active part in globalization managed to double their real income per head.* Unfortunately, the income of other societies, less involved in the development of international trade, did not increase, on average, at all. If a shorter time span is taken into account, and these processes are viewed solely from the perspective of the 1990s, we will see a 63% increase of GDP per head in the MGC group[8] and a drop by about 10% in the LGC group[9] (figure II.1).

Figure II.1 Economic growth in the world economy, 1991-2000
GDP per head, per cent



Source: Dollar and Kraay, 2001.

One must not overlook in this context the fact that this general, fairly encouraging picture of change results mainly from the unprecedented progress attained by just two countries, albeit quite special ones: China and India, inhabited jointly by some 2.3 billion people. Their growth rate has an overwhelming impact on the indicators of the entire MGC group.

[8]Per capita GDP in these countries kept growing at increasingly faster rates in the last decades of the previous century: from 1% in the 1960s to 3% in the 1970s, 4% in the 1980s and 5% annually, on average, in the 1990s.

[9]In highly developed countries, GDP per head grew at an average rate of 2.2% a year. Thus it increased during the 1990s, in real terms, by another 24%, yet in the richest among the major economies—the United States—the aggregate growth was over 38% (3.3% average overall growth, or 2.8% in per capita terms).

China and India: special cases

It is an important and noteworthy fact that both China and India—although they follow different in their progressive integration with the world economy and involvement in worldwide competition—pursue development strategies by no means based on the neo-liberal orthodoxy and the classical prescriptions that stem from the so-called Washington Consensus,[10] which has been invoked so often recently in mainstream economics and figured prominently in the recommendations given to many countries by the G7 countries, the International Monetary Fund (IMF) and the World Bank (WB).

Both China and India are reforming their respective economies at their own, not too quick pace, but with a great deal of consistency and determination. They liberalize capital movements gradually and with moderation, while their exchange rates are effectively controlled by the state at all times. Moreover, their monetary policy is subordinated to the overall national policy, the top priority of which is rapid economic growth. To this end, state intervention is used in both countries more extensively than elsewhere, mainly in the form of industrial and trade policies. Such a combination of structural reform and development policy brings favourable results.[11]

Chinese GDP increased in the 1980s by as much as 162%, which amounts to an average real year-to-year growth of 10.1%. In the 1990s, growth was even faster, reaching 10.7% annually, to produce a cumulative output increase of another 176%. In 2000-2002, the growth rate has somewhat declined, fluctuating around 7%. Thus over the past 23 years—within the time span of a single generation—GDP in China has grown by a staggering 780%. Given the population growth at the same time, the increase of GDP per head was, at 575%, relatively lower, but this too is a giant leap (this time a successful one) in the field of economic catching-up and, consequently, of living standards. Yet the disparities remain enormous. It should be borne in mind that, despite this successful, great step forward, Chinese GDP per head (in PPP terms), still comes up to a mere 12% of the United States level.

India, in turn, experienced in the 1980s an average annual growth rate of 5.8%, which increased to 6% in the following decade. In the last three years (2000-2002), real GDP growth has been around 5%. Thus the aggregate output growth within the time-span of one generation (1980-2002) has totalled 264%, or 130% on a per head basis, because of the much higher population growth than in China.[12]

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[10]The essence of this concept of economic policy is presented by Williamson (1990 and 1997). For a criticism of the "Washington Consensus", see North (1997), Stiglitz (1998) and Kolodko (1999b).

[11]It should be added that a similar observation applies to some other countries which boast success in attaining relatively higher growth rates and overcoming the development lag. In Asia, for instance, this is true of Viet Nam, and in Africa, of Uganda.

[12]Whereas the population of China increased in those years by about 30%, India recorded nearly 50% population growth. If the current demographic forecasts prove accurate, the population of these countries should increase by the year 2015, respectively, by 8.5% and 18%, reaching 1.41 billion in China and 1.23 billion in India. Thus every third inhabitant of the Earth will live in one of these two populous countries, whose development level will have an even greater impact than today on global averages.

Thus when it comes to closing the gap between rich economies and the MGC group, one should remember that if the world's two most populous countries were to be excluded from this group, the picture would be far less optimistic. The MGC population would then fall from 3 billion to 700 million, among which the income growth would be far less impressive.

Falling further behind

On the other hand, there are countries which have been unable to cope. Not managing to reduce the gap, some of them have actually been falling further behind. Unfortunately, from the point of view of the development level attained (or, to put it differently, relative backwardness), the latter group comprises nearly all the economies of Central and Eastern Europe and the former Soviet Union, which are undergoing a lengthy and complex transition from central planning to free market. This transition is inseparable from the process of successive opening up to foreign contacts that will lead in time to full integration with the global economy (IMF, 2000b; Kolodko, 2000c).

Out of the 28 post-socialist economies, only one, Hungary, has found its way to the more globalized group. In all 15 post-Soviet republics, as well as the remaining 11 countries of Central and Eastern Europe and Mongolia, foreign trade dynamics[13] in the 1990s were too low to for them to qualify, using World Bank methodology, as members of that group.

Of course, this fact by itself does not amount to much. Far more importantly, in the 1990s the distance between these countries and more highly developed and affluent societies increased. Whereas GDP in post-socialist countries plummeted in 11 years (1990-2000) in absolute terms by an alarming 28%,[14] the seven most highly developed economies of the world—known as G7—recorded during the same years a 28% increase. In the 15 European Union countries, growth amounted to 24%; in those of the OECD, to about 31%.[15]

[13]This appertains especially to exports, whose slow growth creates problems which are fairly typical of the entire region, connected with a high trade deficit and a deficit of the balance of payments.

[14]This indicator differs from region to region and from State to State. In nine economies of Central and Eastern Europe (Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia), economic growth began after just three years of transitional recession, in 1993. As a result, in the year 2000 their GDP reached 107% of the 1989 level. In six other States of Southern and Eastern Europe (Albania, Bosnia-Herzegovina, Bulgaria, the former Yugoslav Republic of Macedonia, Romania and Yugoslavia), the recession lasted four years, having begun already in 1989). In that region, as the slump was much deeper, the GDP of the year 2000 reached only 73% of the level of 1989. In the CIS area, that is the 12 economies of the Commonwealth of Independent States (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine and Uzbekistan), this indicator came up to 61%, partly because these countries, on average, returned to the growth path only in 1996, after five years of recession in 1991-1995 (EBRD, 2001).

[15]This group also comprises the new member states which joined this organization in the 1990s, including four post-socialist countries (the Czech Republic, Hungary, Poland and Slovakia). However, their relative contribution to the GDP of the entire organization (respectively, 0.5%, 0.5%, 1.3% and 0.2%) is so small that the development tendencies within this group have very little impact on the overall growth in OECD countries. Even if these countries were excluded from the calculation, the GDP growth in the remaining OECD countries in the 1990s—rounded off to the tenth of a percentage point—would amount, on average, to about 2.5% annually.

Thus the already enormous gap between the post-socialist region and the most advanced economies was dramatically broadened. Great as the distance was, now it is even greater.

This is highly significant. After all, *one of the fundamental economic arguments in favour of the post-socialist systemic transformation was—and remains—the conviction that market transition will contribute to greater economic efficiency and will soon lead to higher growth rates, compared not only with central planning, but also with the developed market economies.* Thirteen years into the transition, this has hardly been the case. In time, however, these predictions may materialize, although—as the experience of recent years shows—economic transformation alone is not enough. What is needed is also an appropriate strategy of socio-economic development.

The current phase of globalization

Globalization is the historical process of liberalization and integration of goods, capital and labour markets, which have hitherto functioned to a certain extent in separation, into a single world marketplace. The qualification "to a certain extent" is important, because even seemingly wholly separate national or regional economic entities are somehow interconnected, indirectly or directly, and some economic and financial flows do take place between them, albeit on a limited scale. As regards specific markets, their liberalization and consequent integration differs in scope and intensity.

There are differences between the markets of goods and services, many of the latter being unsuitable by nature to be traded globally, as they need to be consumed on the spot, the moment they are provided. Different again is the market of capital transfers, which follows different rules than the simple movements of goods. Yet another set of differences appertains to labour, whose international transfers have thus far been the least liberalized—for economic, but also cultural and strictly political reasons, although the latter (expect for extremist political movements, like Haider's party in Austria or Le Pen's in France) are rarely publicly admitted.[16]

To be sure, the scope of market integration has been changing across the historical phases of the globalization process (Frankel, 2001). Globalization

[16]This can be illustrated by examples from various corners of the world economy, from the openly hostile treatment of the Asian immigrants in Australia and their deportation to South Pacific islands, to the expulsion of illegal Chinese immigrants from Hong Kong SAR back to China, to the introduction of stringent visa requirements for CIS citizens traveling to the formerly "fraternal" countries of Central and Eastern Europe, to tough immigration quotas for the inhabitants of Central America trying to settle in North America. Of course, such restrictions are far less strict—or, indeed, sometimes replaced with incentives—in the case of highly skilled employees who are in short supply in the developed economies. The boom of the so-called new economy in the United States is a case in point, where a number of measures were introduced to facilitate the arrival of specialists in the areas of computer hardware and software, as well as Internet technologies, educated elsewhere—mostly in India and China, but also in some post-socialist economies.

can be divided into periods in many different ways. Apparently, one can even speak about its permanent character, because globalization—that is, the extent to which particular product markets and regional markets have been liberalized and integrated—has been deepening all the time, although with varying intensity, long breaks and even occasional setbacks, as in 1914-1945. In the history of permanent globalization thus construed, three particularly expansive phases can be distinguished:

- Globalization of the Age of Exploration (16th to mid-17th centuries).
- Globalization of the Industrial Revolution (mid-18th to 19th centuries).
- Globalization of the Age of Computers and the Internet (last quarter of the 20th century and beginning of the 21st century) (Kolodko, 2001a).

The World Bank distinguishes three phases of globalization, covering, respectively, the years 1870-1914, 1950-1980 and recent times, post-1980 (World Bank, 2002a). However, this periodization gives rise to serious reservations, for two reasons. First, it totally ignores earlier (pre-1870) peaks of international economic activity and links between numerous regional and national markets, as well as the ensuing qualitative changes.

Second, the years 1950-1980 cannot be considered a "second phase of globalization", because, as the World Bank itself confirms, that period involved only the integration of highly developed capitalist economies, that is, those of North America, Western Europe and Japan. This is quite a lot, but not enough to be considered a "global economy".[17] Remaining outside the scope of those integration processes were some huge areas: both the "Second World" of socialist planned economies, and the "Third World" of underdeveloped countries.

Six traits of globalization

Six characteristics of modern globalization can be distinguished:

- First, thanks to the significant reduction of customs barriers,[18] *the volume of world trade increases very fast, nearly twice as fast as output.* While the global GDP increased in 1965-1999, on average, at 3.3% a year, the volume of exports (and hence, in the global context, also

[17]This group of highly developed countries, although inhabited by merely 15% of the world population, generates 57% of the global income, and its share in the world exports of goods and services amounts to 76%. However, in spite of its decisive influence of the global economy, it must not be equated with the world at large.

[18]In the last decade and a half—since the mid-1980s—customs tariffs have been reduced by about 10% in the LGC group and by about 33% in the MGC group.

imports) increased at 5.9% per annum.[19] Foreign-trade growth was fastest in the MGC group: in the case of the East Asia and Pacific region, it stood at 10.1% a year, on average. However, even in some LGCs foreign-trade dynamics exceeds that of GDP growth. As a result, the share of these countries in world trade increased from 19% in 1971 to about 30% in 2001.[20] Moreover, there have been favourable changes in the structure of these exports. In 1980, merely 20% of exports from less developed countries consisted of processed manufactured goods; today this proportion exceeds 80% (IMF, 2000a).

- Second, apart from some temporary disturbances caused by a series of financial crises at the turn of the last decade, *capital flows have been steadily increasing*. Three decades ago, capital transfers from rich to less advanced countries stood at less than $28 billion; in the record-breaking (thus far) year 1997, they were 11 times higher, reaching $306 billion.[21] Growth of the transfer volume has been particularly explosive in the case of private portfolio investments: from a negligible $10 million in 1970 to a record $103 billion in 1996.

- Third, there are *population migrations*. Although the modern-time movements are not as extensive as those in the years 1870-1910, when as much as about 10% of the world population changed their permanent residence, their economic significance is considerable. Over nearly 40 years (since 1965), the number of people who have found work outside their country of birth has nearly doubled. Interestingly, the scale of migrations is greatest between less developed countries, rather than from those countries to rich ones.

- Fourth, one should take note of *the dissemination of new technologies*, and in particular the spreading impact of the scientific and

[19]This long-term trend is not undermined by the stagnation of the world trade volume in 2001-2002, which is a temporary occurrence, as was the slowing down of growth in 2000-2001. The World Trade Organization estimates that global trade volume dropped in 2001 by about 1% and is likely to increase by about the same amount in 2002, returning to the level attained in the year 2000.

[20]It should be noted that out of the 20 countries with the relatively highest proportion of their foreign trade volume to GDP, exceeding 50%, only four are highly developed countries, namely, Belgium, Ireland, Luxembourg and Singapore. This group also includes three post-socialist economies: the Czech Republic, Estonia and Slovakia.

[21]In terms of capital flows, and especially direct investment, post-socialist economies occupy a specific position. In 1990-2001, they officially absorbed more than $150 billion, of which the greatest part—almost $60 billion—was channelled to Poland. During the same period Poland invested abroad—mainly in the neighbouring post-Soviet republics—a mere $600m, that is, a hundred times less. Similar proportions are observed in other countries of the region, except the Russian Federation. Another type of emerging markets comprises countries which invest more capital abroad than they absorb from foreign sources, like Hong Kong SAR or Republic of Korea. In post-socialist emerging markets, the scarcity of capital makes direct investment a one-way process: funds flow into these countries. Obviously, there are exceptions, connected especially with the export and flight of capital, as was the case in the Russian Federation in the 1990s or after the fall of the fraudulent pyramid schemes in Albania in 1996-1998.

technological revolution connected with information and computer technologies (ICT). We witness the birth and development of a knowledge-based economy, with serious implications for countries seeking to catch up with more highly developed states. Progress appertains not only to the "hard" manufacturing technologies, but also to new management and marketing methods, which greatly boost productivity and hence increase the output.

- Fifth, an indispensable element of the current phase of globalization is the *post-socialist systemic transformation.* Indeed, one could hardly speak about globalization without including in this process this huge area, inhabited by more than a quarter of mankind. On the one hand, this transformation acts as a catalyst facilitating market transition in the former centrally planned economies. On the other hand, it complements and completes the globalization process itself. Global economy means global capitalism (Hutton and Giddens, 2000) and, therefore, it can only be based on the market. Thus the inclusion of Central and Eastern European countries, the CIS, China and Indochina in this process[22] will require the prior transformation of these areas into open and liberalized market economies.
- Sixth, the radical transformation of the financial and economic structures and institutions is accompanied by far-reaching *cultural change.* Greater openness to the movement of not only people, but, first and foremost, ideas—not least through the phenomenal growth of the Internet, which is a medium resistant to bureaucratic and political control—means that the world has shrunk considerably and increasingly acquires the characteristics of a "global village". But at the same time it has also enormously expanded by the creation of vast virtual spaces in which various cultural trends coalesce as if in a giant melting pot, while new forms of economic activity are being born (Kolodko, 2001d; Zacher, 2001).

How irreversible?

Thus defined and characterized, globalization seems an irreversible process. But is it really so? From the point of view of the incredibly accelerated information flow and decreased communication and transportation costs, it is. There is no way to undo technological progress and the explosive growth of the ICT sector— the two factors that have altered, within the time span of one generation, right before our eyes, the face of the world.

[22]Of course, among post-socialist countries, one should also include Mongolia, to which the above remarks and generalizations also apply, although it is usually left out in the published statistics, because of its minimal contribution to the world economy.

What is it like then, the world's new face? First and foremost, it is heterogeneous, for not all the consequences of globalization are positive. The persistence or even, in some areas, increase of social inequalities (Dollar, 2001), financial crises and their spread to other sectors of the world economy (including some economies based on relatively sound foundations and strong institutions), the dying off of some traditional branches of manufacturing in certain countries due to their low competitiveness, which creates rampant unemployment and poverty—these are but a few of the disadvantages of globalization. Further problems arise not only in the social and economic spheres, but also on the political or even military levels. As an extreme example, one could point at international terrorism, which, incidentally, can be viewed as a privatization of wars and military conflicts, or as an instance of the world trade in arms running out of control of powerful countries and the international organizations in which these countries play a dominant role, such as the United Nations or the WTO.

Therefore, *the possibility that the attained progress of globalization may be reversed cannot be ruled out.* It has happened so in the past, for instance after 1914, when the then achieved level of globalization likewise seemed secure. Although technological progress cannot be checked, further liberalization of trade and capital movements—as well as, significantly, the increasingly liberalized transfer of labour—can be brought to a halt. The threat of renewed protectionism is real and cannot be ruled out a priori.[23] Such developments would automatically entail the slowing down of globalization, which would deprive many nations of the chance to catch up with more advanced economies.

We keep looking at the world economy from the perspective of its component countries. This is not only due to what appropriately aggregated statistical data is available (and hence the possibility to carry out various comparative analyses), but also—and mainly— because of the dominance of the traditional way of thinking. Accordingly, although it would be more convenient to speak of the increasingly integrated world economy in terms of various regions, rather than countries and national economies, the traditional "nation-centred" thinking will continue to hold sway for many years to come. Superposed on it is the perception of the word economy as clearly divided into mature economic systems and "emerging markets".

Emerging markets

The notion of "emerging markets" is hazy. It gets a different reading in the countries in which it was coined, that is, highly developed market economies

[23]In a sense, this threat remains a fact all the time. Even the World Bank (2002a) says that, by cautious estimates, the protectionist practices of rich countries alone cost the poorer countries as much as about $100 billion a year, that is, double the amount of foreign aid they receive.

(Mobius, 1996; Garten, 1998; Gilpin, 2001), and in the countries to which it directly applies. The latter is a large, if heterogeneous, group, with a well-defined centre and hazy periphery.

It is easier to say with certainty what is *not* an emerging market than what is. One could say that *emerging markets do not include, by definition, either those highly developed market economies which have long evolved mature institutional systems, or those countries which have yet to set out on the path of market development.* Thus outside this group are all rich, institutionally mature countries. These comprise all the "old" members of the OECD (except Turkey), and several countries which have attained a high development level in recent decades, acceding wholeheartedly to the world economic exchange and liberalizing their economic regulations.

It remains a moot point whether every relatively rich country can be excluded a priori from the "emerging markets". Should we include in this group—in view of their specific economic system and a certain immaturity of their market institutions, and in particular, barriers to competition and lack of liberal deregulation—some oil-rich Arab countries which owe their relatively high development level solely to their natural resources? Could it really be that, say, Qatar or the United Arab Emirates, with a PPP-adjusted per capita GDP of, respectively, about $19,000 and $17,000, are more mature, already "emerged" market economies than Chile or Hungary? Or do they just happen to be richer than the latter? It would seem, therefore, that—at this end of the spectrum—inclusion in the category of developed markets should be based on the criterion of market-institution maturity rather than level of economic development alone.

At the opposite end of the list of countries that certainly cannot be included among the "emerging markets" are four types of economies:

- The first one, rendered totally obsolete by the post-socialist transformation, comprises the *orthodox socialist States*, such as Democratic People's Republic of Korea and Cuba.
- The second is made up of countries which either by way of their own political preference, or through international sanctions imposed upon them, are largely *isolated from broader contacts with the world economy*, such as Myanmar, Iraq or Libyan Arab Jamahiriya.
- The third group consists of *failed states with dysfunctional institutions*, which are not only unable to take part in global economic exchange, but even internally appear ungovernable, such as Afghanistan and Bosnia-Herzegovina, or a fair number of African countries, like Somalia, Democratic Republic of Congo (formerly Zaire), Sierra Leone or Rwanda.
- Finally, the fourth group—which is the most important source of candidates for "emerging market" status—comprises countries which

are *gradually approaching a stage in structural reforms, opening and liberalization where a qualitative change is about to take place* that may soon enable them to take advantage of free global capital flows or international free trade. One can classify with this group some post-socialist countries which have belatedly embarked on the transformation, like Turkmenistan or Uzbekistan, as well as some of the former "Third World" countries now facing profound economic and political reform, like Algeria or Islamic Republic of Iran, and, finally, countries about to overcome the turmoil of civil war and armed ethnic strife, such as, formerly, Guatemala and Yemen and now (hopefully) Angola and East Timor.

Unfortunately, there are processes in the modern world going in the opposite direction, too. Economies whose markets were already "emerging" may be set back in this process. This is particularly true of countries which become entangled—often quite unexpectedly—in destructive political and military conflicts, usually, though not always, of ethnic character. By way of exemplification, one could mention Kyrgyzstan and Nepal in Asia, Madagascar and Zimbabwe in Africa, or Haiti and Colombia in America. Thus, generally speaking, *what is and what is not an "emerging market" depends on the maturity of its institutions*, that is the rules of the economic market game—the law and culture—and the institutions enforcing the adherence to these rules.

Methodologically, it is also possible to treat as "emerging markets" all economic systems which cannot be considered fully mature. Then one would also have to include in this category Iraq beside China, Belarus beside Poland, Libyan Arab Jamahiriya beside South Africa, Cuba beside Mexico. Indeed, the classification here is a matter of convention, rather than sharp distinctions based on substantive criteria. This is not really the main point and there is no need to argue whether Singapore and Slovenia still count as "emerging markets", as global investors would have it,[24] or whether Pakistan and Kazakhstan have already attained this status, although not as fast as some transnational corporations and the governments of the most highly developed economies would wish.

The view from outside

Of greater importance is the interpretation of the "emerging market" category, as well as its theoretical and especially pragmatic implications. Does the fact that a country counts as an "emerging market" has a bearing on its socio-economic development, and in particular, on its chances for accelerated

[24]In some international analyses, certain countries are occasionally included in two groups simultaneously. For instance, Hong Kong SAR, Republic of Korea, Singapore and Taiwan Province of China have been treated by the IMF and the World Bank for a couple of years now as advanced economies, whereas investment banks still classify them as emerging markets.

growth, which are of special interest for us here? This is one of the issues that the two interpretations of the "emerging markets"—from their own perspective and that of the advanced economies—are concerned with.

From the point of view of (institutionally) developed and (materially) rich countries, the category of "emerging markets" is instrumental. For these countries, they form yet another segment of the expanding field of economic activity. Thanks to its "emergence", a new region of the world opens up for penetration by creating an opportunity to profitably invest surplus capitals, sell products and acquire resources, including relatively cheap labour. In this way an additional demand "emerges"—and becomes globalized—which now can be satisfied, as the political, economic and financial barriers that used to block access to these regions of the world are torn down.

Such an approach emphasizes not so much a commitment to the socio-economic development of an "emerging" market, as the opportunity to increase one's own capacity for expansion and to multiply the wealth of the already rich countries. The development of an "emerging market" itself is only important inasmuch as it favours further expansion of the rich countries in a specific new sales market. In other words, under the instrumental approach, rapid growth of an "emerging market" is not a self-contained, supreme goal, but only an instrument to further the interests of other, more powerful actors in the global economic game—be they the highly developed countries or the great transnational corporations.

The inside view

On the other hand, the "emerging markets" themselves—which, incidentally, did not insist on being thus named—have a totally different outlook on this subject. What matters from their point of view is not the additional outlet created in their territory for the capital and goods from other, more advanced countries, but the *rapid maturation of their own economic systems, leading to the emergence of full-fledged market economies.* On this interpretation, the principal goal is not to create a new sales market for others, but to build a new, market system which is institutionally liberalized and progressively open, much to its own benefit, to an expanding range of outside contacts.

Such a system should ensure a higher level of efficiency and faster output growth, hence also improving the living standards of the societies in countries described as "emerging markets". The object of the game is to have market *economies* emerge, rather than just markets. This distinction is significant, for it emphasizes the main objective, which is rapid growth, to be achieved by the creation of an open, market economy with strong institutions. But the fact that a given country can be classified as an "emerging market" is in itself no guarantee that its economy is growing. If this is to be the case, many conditions must be met.

Development gap and catching up

How, then, are we to understand catching up? What is it supposed to be like and who is to close the distance to whom? Do we speak about Canada catching up with the United States,[25] Eastern Europe catching up with Western Europe, or perhaps Africa catching up with Southeast Asia? And with Europe, too? What are the prerequisites and implications of catching up? To answer such questions, it is good to realize first what the starting-point is; the state the world economy is in at the beginning of the 21st century. Different regions vastly differ in attained development levels.

So far some economies have been doing better than others. Over the past few decades, some have recorded considerable growth, while others are treading water or even falling behind with their development level. As a result, huge differences in development levels exist between specific countries and regions of the global economy, and thus the less advanced economies face the task of closing an enormous distance. In most cases it is plain to see that this distance cannot be bridged. But there should likewise be no doubt that for some emerging-market economies, including several post-socialist countries, catching up with the highly developed countries is within reach (Kolodko, 2001b and 2002b).

The potential reduction of distances in development levels should be seen in various perspectives. After all, we are not speaking about Sierra Leone catching up with the GDP of the Luxembourgers, who generate within a working week as much output (in terms of value) as the Sierra Leoneans do in two years. Nor are we speaking about Honduras overtaking the United States. But we do want to see Honduras, as well as other countries of Central America and the Caribbean, develop faster than their rich neighbour up north, overcoming in time their backwardness and poverty. The same can be said about Ukraine and Germany, Viet Nam and Japan, Sudan and Egypt, or Papua New Guinea and Australia.

A neighbourhood affair

Closing the distances should be seen not only—nor even mainly—in the global context, but in a regional one. First one needs to catch up with one's close neighbours who have attained a relatively higher development level. *In the neighbourhood of every country there are other, more highly developed economies, and reducing the distance to them should be one of the strategic political objectives.* Especially when these are adjacent countries, like Haiti and the far more prosperous Dominican Republic;[26] Costa Rica, which develops much

[25]Per capita GDP (in PPP terms) in Canada is just 80% of the United States level.

[26]Although the Dominican Republic and Haiti coexist on the same island, the GDP of the former increased in the 1990s by 82% and that of the latter shrank by 11% (ECLAC, 2001).

faster than its neighbour, Nicaragua; Uganda, which does better than United Republic of Tanzania; or Thailand, which has greatly outdistanced Lao People's Democratic Republic. Such instances, as well as many others, demonstrate that the currently existing differences in development level are not only the function of geographical location and the available natural resources, but mostly result from the unequal efficiency of the respective economic systems and the varying quality of the trade development policy followed by specific countries (World Bank, 2002c).[27]

The same observation is applicable to post-socialist countries, among which the pre-existing differences in development level changed in various ways over the first dozen or so years of the transformation, because of the varied duration and depth of the transitional recession (Kolodko, 2000a; Blejer and Skreb, 2001; EBRD, 2002). Thus if Poland wants to improve its position, it should first close in on the Czech Republic and Hungary;[28] likewise, Uzbekistan should first attain the development level of Kazakhstan and Russian Federation,[29] to be able to proceed further.

It seems, however, natural from the political and psychological points of view that, say, Turkmenistan should look up mostly to the nearby, culturally similar Turkey; Hungary want to emulate the neighbouring Austria; Estonia compare itself with Finland; Poland with Germany; the former Yugoslav Republic of Macedonia with Greece. The amount of catching up differs in all these cases. The distance is least pronounced in the case of Turkmenistan, whose PPP-adjusted GDP per head is about 50% of Turkey's. The respective proportion stands at 45% between Hungary and Austria, 37% between Estonia and Finland, and 35% between Poland and Germany. The most severe disparity occurs between the former Yugoslav Republic of Macedonia and Greece, where the ratio in question amounts to a mere 24%.[30]

Let us add that we are not concerned in the present discussion with the catching-up processes among highly developed economies (which, incidentally, is an interesting problem in its own right). In order to catch up with the United States in terms of PPP-adjusted GDP per head, Canada would have to increase its output by 25%. But the growth rates in both countries have

[27]In the long run, the economic system is also shaped by the policy being implemented, although in a short-term perspective it may seriously affect the effectiveness of this policy. Incidentally, this is one of the significant differences between emerging and mature markets.

[28]PlanEcon (2001b) estimates per capita GDP (in PPP terms, year 2000 prices) in Poland, Hungary, and the Czech Republic in 2002, respectively, at about $8,300; $11,800 and $13,400. According to the World Bank, the Hungarian and Czech income exceeds that of Poland, respectively, by 32% and 53%.

[29]PlanEcon (2001a) puts per capita GDP (in PPP, year 1995 prices) in those three countries, respectively, at $2,700; $3,550 and $5,625.

[30]The indicators quoted above for the Turkmenistan-Turkey and the former Yugoslav Republic of Macedonia-Greece pairs (pertaining to the year 2000) should be taken with due caution, as the respective per capita GDP figures (in PPP terms) have been calculated using slightly different methods: the OECD methodology in the case of Greece ($16,000) and Turkey ($6,800) (OECD, 2001) and the PlanEcon methodology in the case of the former Yugoslav Republic of Macedonia ($3,900) (PlanEcon, 2001b) and Turkmenistan ($3,400) (PlanEcon, 2001a).

been very similar in recent years, mainly because of their strongly correlated business cycles. For Republic of Korea to overtake Japan, its GDP per head would have to grow by 62%. If New Zealand's per capita GDP were to equal that of Australia, it would have to be boosted by 35%.[31] For Austria to be level with Switzerland, its per capita GDP would have to move 17% up, whereas a similar outcome in the case of Portugal and Spain would require only 12% growth.

Yet *even if GDP levels per head were fully equalized, this would by no means eliminate differences in living standards*, because the latter depend not only on the current income stream, but also on the resources accumulated—in some cases over many centuries.[32] This can be illustrated by the example of Finland and Sweden, which has been the more prosperous of the two for ages, partly due the exploitation of its eastern neighbour. Currently—since the turn of the last decade—Finland enjoys a per capita GDP level (in PPP terms) amounting to 105% of the OECD average, whereas the same indicator in Sweden stands at 103%. In absolute numbers, this amounted in the year 2000 to about $24,900 and $24,400, respectively.

Catching-up has been even more efficient in the case of Ireland, which has managed to exceed the GDP of the United Kingdom (respectively, $25,060 and $24,390 at current exchange rates, or $28,500 and $23,900 in terms of PPP). However, the consumption level still clearly lags behind in Ireland. These differences remain conspicuous. A trip from London to Dublin is enough to see that it was United Kingdom, and not Ireland, that was for centuries the centre of an empire on which the sun never set. The legacy of that period can still be seen both in the regional proportions of income and wealth distribution, and in the functioning of the global economy.

Average income levels vary greatly in the modern world. Table 2.2 compares the ranking of 70 countries where the PPP-adjusted income per head exceeds $6,000 (or about a sixth of the current United States level) with the 20 poorest countries of the world. Among the former group are just 12 of the 32 post-socialist economies of Europe and Asia (including China and Indochina). In the latter group, there is just one post-socialist country:

[31]As it happens, the Australian economy has been developing faster than New Zealand"s over the past dozen or so years, thus increasing the distance between the two: the average GDP growth in Australia in 1990–2002 has reached as much as 4.2%, as compared with 3% in New Zealand.

[32]Real consumption depends on both current income and the degree of depreciation of the accumulated consumption assets. It should be added that the notion of living standards is far broader than consumption—even if the latter is construed in so-called true terms. It depends on many factors, including the general level of education and culture, health, public security and the state of the environment. Attempts are being made to measure these standards by means of the Human Development Index (HDI), calculated under the United Nations Development Programme (UNDP, 2001). It should be noted that from the point of view of HDI disparities, the distance between the emerging post-socialist market economies and the rich countries is noticeably smaller than in the case of per capita GDP (Kolodko, 2000a). Whereas there are just four post-socialist countries (Slovenia, the Czech Republic, Hungary and Slovakia) among the 50 countries with highest per capita GDP levels (in PPP terms), four other post-socialist countries (Poland, Estonia, Croatia and Lithuania), in addition to the above-mentioned four, are listed among the top 50 in terms of HDI.

Table 2.2 Highest and lowest GDP per head (in PPP)

Rank	Country or area	GDP	Rank	Country or area	GDP
	Highest purchasing power				
1.	Luxembourg	129.2	36.	Republic of Korea	48.7
2.	United States	100.0	37.	Bahamas	48.6
3.	Switzerland	90.1	38.	Martinique	46.3
4.	Norway	88.2	39.	Barbados	43.9
5.	Iceland	85.3	40.	Guadeloupe	40.6
6.	Brunei Darussalam	85.1	**41.**	**Czech Republic**	**40.2**
7.	Belgium	80.6	42.	Bahrain	39.5
8.	Denmark	80.2	43.	Reunion	38.7
9.	Bermuda	79.7	44.	Argentina	37.4
10.	Canada	79.7	**45.**	**Hungary**	**34.6**
11.	Japan	78.9	46.	Saudi Arabia	34.6
12.	Austria	77.1	**47.**	**Slovakia**	**32.7**
13.	Netherlands	76.5	48.	Mauritius	28.0
14.	Australia	74.7	49.	Uruguay	27.4
15.	Germany	73.7	50.	South Africa	27.3
16.	France	72.1	51.	Chile	26.4
17.	Finland	70.8	**52.**	**Poland**	**26.3**
18.	Hong Kong SAR	70.7	**53.**	**Estonia**	**25.7**
19.	Ireland	70.4	54.	Mexico	25.3
20.	Singapore	69.9	55.	Costa Rica	24.7
21.	French Polynesia	69.6	56.	Trinidad and Tobago	24.1
22.	United Kingdom	69.6	57.	Malaysia	23.9
23.	Euro area	69.5	**58.**	**Croatia**	**22.8**
24.	Sweden	69.4	**59.**	**Russian Federation**	**21.9**
25.	Italy	68.9	**60.**	**Belarus**	**21.6**
26.	New Caledonia	66.2	61.	Brazil	21.4
27.	United Arab Emirates	64.5	62.	Botswana	20.5
28.	Cyprus	59.8	**63.**	**Lithuania**	**20.3**
29.	Israel	56.6	64.	Turkey	20.2
30.	Spain	55.9	**65.**	**Latvia**	**19.5**
31.	New Zealand	55.2	**66.**	**Romania**	**18.7**
32.	Macao SAR	53.1	67.	Thailand	18.6
33.	**Slovenia**	**50.3**	68.	Tunisia	17.9
34.	Portugal	49.7	69.	Colombia	17.5
35.	Greece	49.5	70.	Namibia	17.5
	Lowest purchasing power				
1.	Sierra Leone	1.4	11.	Zambia	2.3
2.	United Republic of Tanzania	1.6	12.	Nigeria	2.4
3.	Congo-Brazzaville	1.7	13.	Democratic Republic of Congo	2.5
4.	Burundi	1.8	14.	Madagascar	2.5
5.	Malawi	1.8	15.	Mozambique	2.5
6.	Ethiopia	1.9	16.	Chad	2.6
7.	Guinea-Bissau	2.0	17.	Rwanda	2.8
8.	Mali	2.3	18.	Benin	2.9
9.	Niger	2.3	19.	Burkina Faso	3.0
10.	Yemen	2.3	**20.**	**Tajikistan**	**3.1**

Source: The Economist, 2001. Post-socialist countries in bold.

Tajikistan—the poorest of all the countries undergoing a systemic post-socialist transformation.[33]

Reducing the existing differences in development level thus requires that the output growth rate should be high—markedly higher than in rich countries. This is obvious. But it is worth asking how big the difference in growth rates should be in order to reduce the distance perceptibly or, in some cases, eventually eliminate the existing gaps.

Catching up: the requisites

Catching up is possible when the economic growth in a given country is at the same time:

- ❑ Fast;
- ❑ Sustained;
- ❑ Endogenous.

Pace of growth

So when can we say that growth is "fast"? This is a relative matter, for the same absolute growth rate can be considered in some cases—in the context of one country or period—to be high, while elsewhere it is low. Undoubtedly, the average annual GDP growth of 3.3% in the United States in the 1990s was very fast.[34] The neighbouring Mexico recorded a similar rate during the same period, but this meant slow growth, because it not only failed to shorten the cumulative distance, but even, in view of the relatively weaker growth dynamics in per capita terms, resulted in an even greater income disparity.[35] In 1992-2001, overall GDP increased in Mexico, on average, by 3.2% per annum. But calculated on a per capita basis, growth was merely 1.5% annually. As a result, the distance between the two economies and the living standards of their populations increased even further.

It should be noted that, from the point of view of growth-rate dispersion and catching up with the developed countries, this is the main difference between the market economies emerging from "Third World" and "Second

[33]According to a PlanEcon forecast, per capita GDP (in PPP terms) in Tajikistan was expected to reach $1,028 in 2002, whereas at current exchange rates it stands at a mere $204 (PlanEcon, 2001a). The ratio of per capita GDP between the richest EU member—Luxembourg—and the poorest CIS economy—Tajikistan—amounts to 42:1 in PPP terms, but calculated at current exchange rates, it increases to 243:1.

[34]In the euro area, annual GDP growth in the same period was just 1.8%, thus increasing (rather than reducing) the distance between these 12 advanced economies and the United States to more than 50%.

[35]Per capita GDP in Mexico (in PPP terms) amounts to about 25% of the United States level, but it should be borne in mind that income disparities in Mexico are much greater than in the United States, with the Gini coefficient for these two countries of, respectively, 53.1 and 40.8. If the extreme deciles and quintiles of the Mexican population derive, respectively, 1.3% / 41.7% and 3.5% / 57.4% of the total income, the respective indicators for the United States stand at 1.8% / 30.5% and 5.2%/ 46.4% (World Bank, 2002b).

World" (post-socialist) countries. Let us compare Latin America and the Caribbean with Central and Eastern Europe and the CIS. In the post-socialist economies, overall output grows at the same rate as output per head, as the population, generally, does not change. On the other hand, in the emerging market economies of America, population is increasing steeply. In extreme cases, the spread between GDP growth rate in overall and per capita terms exceeds two percentage points. During the 1990s it reached 2.6 percentage points in Paraguay (respectively, +1.7% and –0.9%), and 2.1 points in Ecuador and Venezuela (respectively, +2.0% and –0.1%, and +2.4% and +0.3%). In the entire Latin America and Caribbean region, GDP grew on average at 2.9% a year, but on a per capita basis, the increase dwindled to a lame 1.2% annually, that is, below the social perception threshold. Worse still, in as many as five countries of the region (Ecuador, Jamaica, Haiti, Cuba and Paraguay), output per head was lower in 2001 than 11 years earlier, although it was only in two of these countries (Cuba and Haiti) that overall output shrank (ECLAC, 2002).

Thus if growth is to qualify as fast, it should be qualitatively higher in per capita terms than in highly developed countries. The term "qualitatively" is used here to imply that, in time, the differences in development level will perceptibly diminish. Bearing in mind the disparities existing at the very outset, it might be assumed that *rapid growth presupposes at least double the growth rate of developed economies.* In the latter group, average annual growth over the last 35 years has been 3.2% in overall terms, or 2.4% on a per capita basis. Accordingly, rapid growth should amount to at least 5% annually in per head terms. At this rate, GDP doubles approximately every 14 years, so within the time-span of a single generation it quadruples. If so, even if the starting-point was low, qualitative changes for the better take place and the distance to more developed economies is substantially shortened.

The population factor

What makes this point important is that less advanced economies—both from the MGC and LGC groups—are characterized by faster population growth than rich countries. One exception from this rule is post-socialist countries, where, in general, the population does not increase. In the years 1995–2000, as many as 17 out of the 20 countries with the lowest natural increase were post-socialist countries (which indeed showed negative values). According to United Nations demographic forecasts, this tendency will continue to prevail until 2005. Among the top 20 countries with the largest absolute population decrease during this period there are 16 countries of Central and Eastern Europe and the CIS—from –0.1% annually in the Czech Republic, Poland and Slovenia, to –1.0% and –1.1%, respectively, in Bulgaria and Estonia. Hence, in these cases the overall growth rate can be equated with per capita growth rate.

Unfortunately, situated at the opposite end of the spectrum are many of the world's most backward and poorest countries, including two post-socialist economies which have lost much of their national income to local conflicts: Bosnia-Herzegovina and Cambodia. The average natural increase rate in this group varies these days from 2.8% in Cambodia to 3.2% in Mauritania and Chad, to as much as 8.5% in Rwanda (table 2.3).

Table 2.3 Population growth: fastest and slowest (Annual average in per cent, 2000-2005)

Rank	Country or area	Growth	Rank	Country or area	Growth
		Fastest growth			
1.	Rwanda	8.5	11.	Mauritania	3.2
2.	Liberia	7.1	12.	Gambia	3.1
3.	Yemen	4.2	**13.**	**Bosnia-Herzegovina**	**3.0**
4.	West Bank and Gaza	3.8	14.	Congo-Brazzaville	3.0
5.	Somalia	3.6	15.	Uganda	3.0
6.	Niger	3.5	16.	Angola	2.9
7.	Saudi Arabia	3.5	17.	Jordan	2.9
8.	Oman	3.3	18.	Madagascar	2.9
9.	Togo	3.3	19.	Singapore	2.9
10.	Chad	3.2	**20.**	**Cambodia**	**2.8**
		Slowest growth			
1.	**Lithuania**	**-1.2**	**11.**	**Republic of Moldova**	**-0.3**
2.	**Estonia**	**-1.1**	**12.**	**Romania**	**-0.3**
3.	**Bulgaria**	**-1.0**	**13.**	**Serbia, Montenegro**	**-0.2**
4.	**Ukraine**	**-0.9**	14.	Austria	-0.1
5.	**Latvia**	**-0.6**	**15.**	**Czech Republic**	**-0.1**
6.	**Russian Federation**	**-0.6**	16.	Italy	-0.1
7.	**Georgia**	**-0.5**	**17.**	**Poland**	**-0.1**
8.	**Hungary**	**-0.5**	**18.**	**Slovenia**	**-0.1**
9.	**Belarus**	**-0.4**	19.	Sweden	-0.1
10.	**Kazakhstan**	**-0.4**	20.	Switzerland	-0.1

Source: The Economist, 2001. Post-socialist countries in bold.

Sustainability

If, then, "fast growth" could be conventionally defined as a real per capita GDP growth of 5% plus annually, another question arises: what is "sustained growth"? It could be assumed, also by convention, that *sustained growth refers to a macroeconomic reproduction process which spans a period of at least 10 to 20 years, allowing per capita national income to double at roughly half-generation intervals.* Such criteria of sustained growth are undoubtedly met by China's

economic expansion over the last 25 years or the doubling of the GDP by Ireland during the 1990s and its continued growth at about 5% annually in the first years of the current decade.[36]

Likewise, the average growth of per capita GDP by 6.4% annually in Republic of Korea in 1965-2002 can be labelled both rapid and sustained. Unfortunately, the same cannot be said about growth in Poland over the last decade.[37] Even though GDP increased in 1994-1997—in the course of the implementation of the policy known as "Strategy for Poland" (Kolodko and Nuti, 1997)—by as much as 28%, likewise increasing on a per capita basis by 6.4% annually on average, this prosperity was too short-lived, being prematurely interrupted by erroneous economic and especially monetary-policy decisions implemented since 1998. As a result, the economy was brought down to near stagnation in 2001-2002, with a mediocre growth of 1% annually. Thus the distance to developed countries began to increase again, instead of being progressively shortened—which, by the way, is still possible (Kolodko, 2002a).

The trouble is that few economies indeed are capable of keeping to the rapid-growth path for an extended period. Out of the 20 fastest growing countries in the 1980s, which recorded an average GDP increase of 4.5% to 10%-plus a year, only eight made it again to the top 20 in the 1990s.[38] These eight countries with the fastest-growing output are: China, Viet Nam, Singapore, Malaysia, India, Taiwan Province of China, Oman and Republic of Korea. It should be noted that the first five countries on this list developed in the 1990s even faster than in the 1980s. It is intriguing or, indeed, fascinating to observe that virtually all of them followed policies that were a long way off the Washington Consensus and monetary orthodoxy, which usually inform the IMF-proposed structural adjustment programmes.

What is more, the situation on the opposite pole was going from bad to worse during the period in question. Whereas in the 1980s there were 11 national economies with a negative average yearly growth—from –6.8% in Iraq to –0.1% in Mozambique and Niger—the number of such countries doubled, reaching 22 in the 1990s. One of the reasons was the post-socialist transformation, intended to boost economic growth. But it turned out that this effect could not be expected at this phase: as many as 16 post-socialist economies had negative average annual growth in the 1990s, while by 2002,

[36]The IMF forecasts that, in 2003, Ireland will remain the fastest growing economy among the rich countries and its GDP will increase by a further 6.2% (IMF, 2002).

[37]In Poland, thanks to the reforms of the pre-transformation period, the transitional recession was the shortest in the region, lasting merely three years: from mid-1989 to mid-1992. Growth has thus continued for 10 years, although during the two quarters at the turn of 2001/2002, it was brought down to a negligible rate of 0.3% (on a year-to-year basis).

[38]There are also cases like Burundi, which maintained in the 1980s an average annual growth of 4.4%, placing it among the 20 fastest growing economies, only to end up in the following decade, in the aftermath of a devastating ethnic and military conflict, with a negative growth of 2.9% annually, among the 20 slowest growing (or, to be precise, fastest shrinking) countries.

only seven[39] out of the 28 post-socialist countries have exceeded their GDP levels of 1989.

Growing from within

Finally, there is the third prerequisite of the catching-up process: the endogenous character of growth. It is indispensable in that *only by building, during one phase of rapid growth, the foundations of continued expansion in the following phase, can the self-sustaining character of growth be assured.* The endogenous growth mechanism is thus intimately connected with the market's institutional infrastructure and a high propensity to save and invest. Taken together, these factors should ensure an adequate level of internal accumulation of capital and high efficiency of its allocation.

The average per capita GDP (in PPP terms) in OECD countries will approach $25,000 in 2003. Bearing in mind what has been said earlier about catching up with highly developed neighbours, this amount should be seen as a long-term goal for countries at a medium development level, including the relatively less developed OECD countries, such as Czech Republic, Greece, Hungary, Mexico, Poland, Portugal, Republic of Korea, Slovakia and Turkey. And, it should be borne in mind at all times, per capita income throughout the OECD, which is composed of 30 countries with a total of some 1.16 billion people, runs up to a mere two thirds of the United States level. The emerging markets, including all post-socialist economies, will keep lagging far behind the United States for generations to come. But countries at a lower development level should strive to successively reduce the distance to the next richer group.

From the point of view of the development level attained, the World Bank, as well as some other international organizations, distinguishes three groups of economies: low-income, middle income—further subdivided into lower middle income and upper middle income—and high income. Superposed on these categories in the two lower-income groups is a geographical division into six regions. Post-socialist economies are included in the Europe and Central Asia group (table 2.4).

Closing the distance

Evidently, the distance to the rich countries that the economies at medium and lower advancement levels should make up for, is truly astounding. In many, or indeed in most cases, closing the existing gap is practically impossible—at least in the foreseeable future. Certainly not in this century. And what happens afterwards—we will see. For the time being, let us reiterate, *the*

[39]This threshold was crossed, in chronological order, by Poland, Slovenia, Albania, Hungary, Slovakia, the Czech Republic and Uzbekistan (EBRD, 2002). The next post-socialist economies to achieve this will be, in all probability, Estonia and Croatia, around 2005.

Table 2.4 Population and income levels, 2000

Category/region	*Population (m)*	*Gross national income per head ($)*	*PPP gross national income per head ($)*
World	**6,057**	**5,140**	**7,410**
Low income	**2,460**	**410**	**1,980**
Middle income	**2,695**	**1,970**	**5,680**
Lower middle income	2,048	1,130	4,600
Upper middle income	647	4,640	9,210
High income	**903**	**27,680**	**27,770**
East Asia and Pacific	1,855	1,060	4,130
Europe and Central Asia	474	2,010	6,670
Latin America and Caribbean	516	3,670	7,080
Middle East and North Africa	295	2,090	5,270
South Asia	1,355	440	2,240
Sub-Saharan Africa	659	470	1,600
Euro area	304	21,730	23,600

Source: World Bank, 2002b.

point is to have poorer economies develop faster than richer ones. The focus, therefore, should not be on coming abreast of the richest, but rather on efficiently closing the distance, and gaining on them rather than lagging ever further behind. All the more so since the rich by no means intend to stay put. Assuming that their per capita GDP increases at a similar rate as it has in the last 35 years, after two more generations it will reach (on a PPP basis) some $90,000. Even if the less advanced countries manage to maintain a high growth rate—5% annually, on average—most of them will still bring up the rear. In some cases, indeed very far behind the leaders (table 2.5).

Table 2.5 Catching-up in the first half of the twenty-first century

	*GDP per capita in PPP (in $)**				*High-income group (%)*	
Category	*2000*	*2012*	*2025*	*2050*	*2000*	*2050*
Low income	**1,980**	**3,225**	**6,705**	**22,705**	*7.1*	*25.0*
Middle income	**5,680**	**9,250**	**19,230**	**61,135**	*20.5*	*67.3*
Lower middle income	4,600	7,490	15,580	52,750	*16.6*	*58.0*
Upper middle income	9,210	15,000	31,190	105,615	*33.1*	*116.2*
Post-socialist economies**	6,670	10,865	22,590	76,490	*24.1*	*84.1*
High income	**27,770**	**35,200**	**50,240**	**90,900**	*100.0*	*100.0*
Euro area	23,600	29,920	42,700	77,250	*85.0*	*85.0*

GDP per capita in a given year under the assumption that the average rate of growth from 2001 will be 2.4% in the case of high income economies and 5% in the case of all emerging market economies.

**East Central Europe and the CIS

Source: Author's own calculation.

But it is a well-known fact that many countries—both within the MGC group and, especially, some of the LGC economies, undergoing marginalization—are unable to attain such growth dynamics. This is also true of some post-socialist economies, in the case of which less favourable geographical location combines with misguided economic policy and the institutional weakness of the emerging market. Some countries have not only failed to achieve high growth dynamics in the past, but will be likewise unable to do so in the future. In recent history, only a few countries managed to overcome their age-old backwardness. Among these, one should mention especially Republic of Korea, whose per capita GDP has attained about 50% of the United States level, Singapore (70%), Hong Kong SAR (71%), Ireland (72%) and Finland (71%), where sweet herring with potatoes is a national dish not because everybody loves it, but for the simple reason that as late as the 1950s many Finns could afford little more.

There is compelling evidence that many other nations have begun to catch up with more advanced economies. This is true of the already mentioned Costa Rica in Central America and the Dominican Republic in the Caribbean, as well as Chile (with 86% GDP increase during the 1990s) in South America. Countries doing fine in Africa include Uganda and Côte d'Ivoire (44% growth in the 1990s), Egypt (54%) and Ghana, where the proportion of population living in poverty shrank during the 1990s from 53% to 43%.[40] In Asia, apart from China, Viet Nam and India, mention is also due to Malaysia, which, thanks to its unorthodox strategy, doubled its income in the 1990s, and Bangladesh, which saw a 58% increase of its national income in the 1990s.

The post-socialist countries

As regards post-socialist countries, there are grounds to believe that fast growth will continue, among others, in Azerbaijan, Estonia, Latvia and Kazakhstan, and in Europe—in Albania, Hungary and Slovenia. Some other economies, too, especially the countries in the process of integration with the European Union may—although this is by no means automatic—enter the path of fast and sustained growth, kept up by the endogenous mechanism of extended macroeconomic reproduction. It would be unreasonable to expect that all the countries from this group will manage, in the space of a generation or two, to increase their output at a rate conventionally described as fast, but there are many reasons to believe that their growth dynamics will be better than in the richer countries, including the European Union (Kolodko, 2001b and 2002b). Alternative growth paths for this group, differing in output dynamics, and their consequences in terms of per capita GDP changes in the current half-century are presented in table 2.6.

[40]Oddly enough, this feat was attained despite the relatively low growth rate of 2% (in per capita terms) in 1983-2001.

Table 2.6 Effect of alternative growth paths

	GDP per head (PPP) assuming 3%, 4% and 5% average annual rate of growth								
	Starting-point	3%			4%			5%	
	2002*	2012	2025	2050	2012	2025	2050	2012	2025	2050
Slovenia	15 850	22 598	33 186	65 496	25 376	42 254	104 143	28 464	53 674	164 480
Czech Republic	13 380	19 077	28 015	55 290	21 422	35 669	87 914	24 029	45 309	139 169
Hungary	11 790	16 810	24 686	48 719	18 876	31 430	77 467	21 173	39 925	122 631
Croatia	11 500	16 396	24 078	47 521	18 412	30 657	75 561	20 652	38 943	119 615
Estonia	10 900	15 541	22 822	45 042	17 451	29 058	71 619	19 575	36 911	113 374
Slovakia	10 730	15 298	22 466	44 339	17 179	28 604	70 502	19 270	36 336	111 606
Poland	8 290	11 820	17 357	34 256	13 273	22 100	54 470	14 888	28 073	86 227
Latvia	8 040	11 463	16 834	33 223	12 872	21 433	52 827	14 439	27 226	83 626
Belarus	6 980	9 952	14 615	28 843	11 175	18 608	45 862	12 535	23 637	72 601
Romania	6 200	8 840	12 981	25 620	9 926	16 528	40 737	11 134	20 995	64 488
Russian Federation	5 625	8 020	11 778	23 244	9 006	14 995	36 959	10 102	19 048	58 507
Bulgaria	5 570	7 941	11 662	23 017	8 918	14 849	36 598	10 003	18 862	57 935
Lithuania	4 190	5 974	8 773	17 314	6 708	11 170	27 531	7 525	14 189	43 581
FYR Macedonia	3 970	5 660	8 312	16 405	6 356	10 583	26 085	7 130	13 444	41 293
Turkmenistan	3 960	5 646	8 291	16 364	6 340	10 557	26 019	7 112	13 410	41 189
Kazakhstan	3 550	5 061	7 433	14 669	5 684	9 464	23 325	6 375	12 022	36 975
Yugoslavia	3 390	4 833	7 098	14 008	5 427	9 037	22 274	6 088	11 480	35 260
Armenia	3 330	4 748	6 972	13 760	5 331	8 877	21 880	5 980	11 277	34 636
Ukraine	2 950	4 206	6 177	12 190	4 723	7864	19 383	5 298	9 990	30 684
Bosnia-Herzegovina	2 700	3 850	5 653	11 157	4 323	7 198	17 740	4 869	9 143	28 083
Uzbekistan	2 700	3 850	5 653	11 157	4 323	7 198	17 740	4 869	9 143	28 083
Kyrgyzstan	2 560	3 650	5 360	10 579	4 099	6 825	16 821	4 597	8 669	26 627
Azerbaijan	2 540	3 621	5 318	10 496	4 067	6 771	16 689	4 561	8 601	26 419
Albania	2 290	3 265	4 795	9 463	3 666	6 105	15 047	4 113	7 755	23 819
Georgia	2 290	3 265	4 795	9 463	3 666	6 105	15 047	4 113	7 755	23 819
Republic of Moldova	2 090	2 809	4 125	8 636	3 094	5 151	13 732	3 404	6 419	21 739
Tajikistan	1 028	1 466	2 152	4 284	1 646	2 740	6 755	1 846	3 841	10 693

*GDP for 2002 in dollars of 2000.

Source: GDP in 2002, PlanEcon 2001a and 2002b. Growth scenarios, author's own calculation.

The distance to the rich countries that post-socialist economies have to make up is in many cases enormous. For Kazakhstan to reach the United States' current income level, its GDP would have to grow, until 2050, at the average annual rate of 5%. This seems hardly probable, although this country does have the potential for fast growth for 10 or 20 years. In the case of poor countries, like Albania or Georgia, whose GDP per head (in PPP terms) stood at about $2,300 in 2002, even if such a growth rate were maintained over the time-span of two generations, they would still be below the income levels enjoyed today by the rich countries.

It follows that one should try to catch up with one's neighbours. Albania will need as much as 48 years of an average growth of 4% annually to reach Slovenia's current per capita income level. Georgia in 2025, after 23 years of growth at an average 5% a year, will not yet have reached the level then attained by Croatia, even if the latter country were to develop at an average rate of merely 3% annually.

In post-socialist economies, the attainment of the current level of rich countries—that is, a per capita GDP of $27,000—would require increasing their current levels by a factor ranging from 1.7 in the case of Slovenia, to more than 26 in the case of Tajikistan (figure II.2). Even if this does happen one day, the rich countries will then be still richer and the pursuit of the moving target will go on (Kolodko, 2000b).

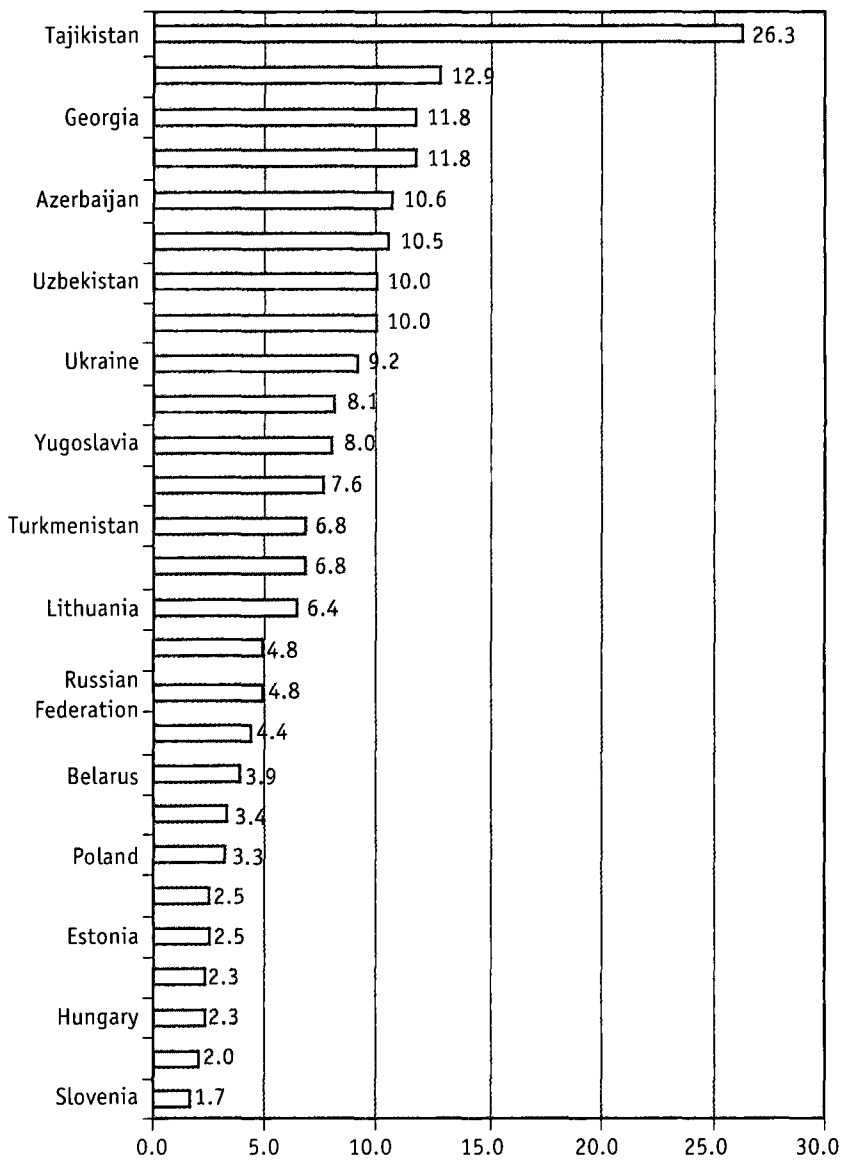
Now, in the 21st century, chances to catch up with more developed countries, although unevenly distributed, are opening up before quite a few emerging market economies. This is a result of the contemporary phase of globalization, which, as we know, also poses numerous threats. While trying to avoid the latter, many emerging-market economies can make good use of the new opportunities: Argentina and Ukraine, Brazil and Russian Federation, Chile and Poland, Nigeria and Pakistan, Islamic Republic of Iran and Thailand, Costa Rica and Malaysia, Mexico and Croatia, Tunisia and Sri Lanka. Half a century from now, some of them will be counted among the high-income countries, while others may even be demoted to the low-income group. It is time to address the question of what this will depend on.

What determines fast growth

There are many known growth factors, but the current phase of globalization brings new elements into economic theory and policy. In particular—especially in the case of MGCs—the relative importance of the external environment, in relation to the domestic market, is increasing. *Demand for goods manufactured in a given country and the supply of available capital increasingly depend on tendencies prevailing in other parts of the world and in the global economy as such.* A national economy may enjoy long-term growth only on condition that both effective supply and real demand are on the increase. The

Figure II.2 Catching up with high-income countries in emerging post-socialist markets

How many times GDP must multiply to catch up with the income level of a rich country, i.e. $27,000



Source: Author's own calculation.
The coefficients show how many times the country's GDP must multiply to catch up with the income level of a rich country, i.e., $27,000.

dynamics of these two flows determines the general economic dynamics, with globalization changing the traditional proportions of the internal and external components, in favour of the latter.

This means that *only those countries can succeed in ensuring fast economic growth which, on the one hand, can stimulate, in a preferably inflation-free way, the increase of domestic demand, and take advantage of their increasing openness and international competitiveness to tap the external demand, and, on the other hand, are capable of not only creating their own capital, but also attracting foreign savings and turning them into long-term capital, enhancing their own productive powers.*

On taking a closer look at the mere dozen-or-so emerging-market economies which have succeeded in overcoming the development lag in the last decades, one can notice that this success stems from a combination of two sources: macroeconomic stability and human capital. Without these, no catching up is possible, either today, or in the future. Only those countries which can take care of these two factors will have a chance for fast and sustained growth. But even this is not enough.

Six factors of growth and development

Sustained social development and fast economic growth crucially depend on six factors:

- Human capital;
- Financial and real capital;
- Mature institutions;
- Size of markets;
- Policy quality;
- Geopolitical location.

The combination of these factors will, in the coming years, decide success or failure in catching up with the rich countries.

Human capital

The role of human capital is increasing in the current phase of liberalization and integration, which unfolds in the course of yet another stormy scientific and technological revolution connected with the expansion of ICT and growth of the knowledge-based segments of the economy. For this reason, the high quality of education at all levels and relatively high spending on research and development (R&D) will increasingly act as growth stimulants.

The trouble is that globalization entails, by definition, migrations, which also involve the educated. As a result, *instead of education, or brain training, we often witness brain draining.* It is felt in many emerging-market economies, including the post-socialist ones, from which there is an outflow of mostly highly skilled workforce to more developed countries. In this way, the relative competitiveness and development potential of the countries where these people were educated and trained is adversely affected. This is an aspect of globalization which limits the catching-up potential.

These migrations are paralleled by large-scale movements of poorly educated people. Unskilled labour looks for a new and better place in the global village, thus not only improving their own material situation, but also contributing in a specific way to a reduction of development disparities. By changing the balance of regional and local labour markets, such flows contribute to the relative increase of wages in the countries that people leave (the supply of unskilled labour dwindles, so average wages go up) and their relative decrease in the countries in which they arrive (the supply of unskilled labour increases so average wages go down).[41] Currently, such dependencies can be observed, for instance, between Mexico and the United States, Algeria and France, the Ukraine and Poland, Viet Nam and Thailand, Indonesia and Australia, Mozambique and South Africa, or Bolivia and Chile.

Thus if the outflow of workforce—and especially skilled labour—does not favour high growth rates, measures should be taken to avoid it. This is no simple task in a liberalizing world, and is best accomplished by overcoming the vicious circle of low growth rates and population outflow. *The reason why people leave their native land is not the low-income levels in that country, but, rather, the lack of realistic prospects for perceptible and speedy improvement in this field.* People do return to their homeland, too—bringing with them their experience, acquired knowledge and savings[42]—if they can view their country's development prospects with optimism. Feedback thus arises which can be either favourable or detrimental to development.

Poland, for example, recorded in 1994-1997 net (positive) immigration, because of its unprecedented economic dynamics and a significant improvement not only in the current living standards, but also in the level of social satisfaction and optimism about the future. More people were coming back to Poland—quite often equipped with new knowledge and experience gained abroad—than were leaving the country. This trend was reversed a couple of years later because of the unnecessarily dampened growth rate. In 1999-2001,

[41]During the "second phase of globalization", in accordance with the World Bank periodization, that is, in the years 1870-1914, migrations had an even stronger impact on the changing economic dynamics than did goods trade or capital transfers (World Bank, 2002a). In those years, "Emigration is estimated to have raised Irish wages by 32%, Italian by 28% and Norwegian by 10%. Immigration is estimated to have lowered Argentine wages by 22%, Australian by 15%, Canadian by 16% and American by 8%." (Lindert and Williamson, 2001, p. 19).

[42]Of course, one does not have to return home in order to transfer the savings made abroad to one's native country. It is estimated, for instance, that the transfers to India made by Indians working worldwide are six times higher than the entire official aid received by that populous country.

at least a quarter of a million people, mostly young and educated, left their country for faster developing regions of the world economy. Some of them, regrettably, for good.

Financial and real capital

Development must be based on real and financial capital. For many countries at a medium or low development level, its shortage is the principal barrier to economic growth (World Bank, 2002d). Achieving and maintaining such growth requires, in the first place, the formation of domestic capital, while foreign investment and aid can only play a supplementary role. Systematic capital formation requires financial equilibrium and a high propensity to save. Both are difficult to attain in backward countries, especially in the absence of well-developed institutions of financial intermediation—the banking sector and the capital market.

If the low propensity to save is aggravated by capital flight—which is quite often the case in emerging-market economies—the problem is hopeless.[43] However, when the banks and other organizations manage to accumulate an increasing flow of savings and turn it into active capital, a great deal depends on systemic regulations which should facilitate efficient capital allocation. Otherwise, the apparent abundance of assets might not be productively employed as capital (de Soto, 2000).

Foreign capital, which should increasingly be referred to as "originating from other parts of the global economy", can only supplement domestic capital in the financing of development. A strategy for catching up with the richer countries cannot be based on the assumption that this process will be financed by capital from these countries. It can only play an auxiliary role. This applies both to foreign investment, especially direct (FDI), and to the aid of the richer for the poorer.

The influx of FDI itself, and, consequently, the increased presence of foreign companies on the market of a given country, is not in itself a guarantee of progress and accelerated growth. Sometimes it just demonstrates that domestic companies are weak and their products are unable to satisfy the demand not only in other parts of the world economy, but even at home. However, foreign capital may contribute to the growth of output and improved efficiency of the emerging-market economies in which it is invested, if four processes take place:

- First, the incessant *process of "creative destruction"* of the old firms by new ones must indeed be creative in the sense that the penetration of foreign capital and the influx of FDI result in the disappearance

[43]According to World Bank estimates, about 40% of African countries' private capital was kept outside the continent in the 1990s. If the poorest continent thus finances, de facto, the development of other parts of the global economy, it is small wonder it remains the poorest.

of obsolete (mostly domestic) companies which are uncompetitive and unable to expand on the world market, but this is more than compensated for by the emergence of new companies, offering more competitive jobs and better products. Such replacement processes occur everywhere—also in the most highly developed countries[44]—and constitute the main vehicle of technological progress and microeconomic efficiency improvement, which, in the long run, should translate into faster growth.

- Second, *changes in the market and price structure should facilitate competition and foster economies of scale.* Foreign companies have an obvious interest in driving out domestic firms. Given the unequal power of companies to resist such pressures, this affects especially small and medium-sized enterprises. The ultimate impact of this kind of competition on output dynamics depends, on the one hand, on the openness of the market, the extent of protectionism and support for domestic entrepreneurs, and on the general reduction of manufacturing costs (and relative prices) resulting from the extended scope of production and the accompanying reduction of trade markups, on the other.

- Third, *FDI functions today as the principal transmission belt for the transfer of new technologies*—including ICT—to the emerging markets. The most important thing here is an appropriate proliferation mechanism that will spill over the technologies to related spheres of economic activity and other enterprises. This is not as obvious as it might seem at first glance, for this type of impact would be in the interest of the recipient countries, but not necessarily of the multinational investors. In fact, these interests are often at cross-purposes here. This is due to the fact that over 80% of all FDI originates in just six rich countries—in order of magnitude, the United States, United Kingdom, Japan, Germany, Switzerland and the Netherlands—and it is these countries that derive profits from licences and patent fees, absorbing a total of 90-98% of revenues from this source.[45]

  Therefore, foreign (global) investors may occasionally hinder, rather than facilitate, the spread of technological progress. But an appropriate development policy response to this threat should not restrict the influx of FDI, but rather do the opposite: encourage its increase.

[44]In the United States, in every five-year period as many as 35% of all companies go into liquidation, particularly in the small and medium-sized enterprise sector (Dunne, Roberts and Summelson, 1989). But even among large companies, with 250 or more employees, this indicator amounts to 16% (Bernard and Jensen, 2001).

[45]It should be added that most of these funds are cross-invested in the richest countries, while the poorest continent, Africa, receives only about 1% of the global direct investment flow. There were years when a small country like Ireland attracted more investment than this vast continent in its entirety.

The greater the number of modern companies (including foreign ones) which apply modern technologies operating on a given emerging market, the faster is its overall long-term growth.

- Fourth, the inflow of direct investment involves a constant know-how transfer, resulting in *the improved skills of local employees in the areas of management and marketing.* Quite often it is the lack of basic skills in these areas that hampers output expansion and economic growth. Foreign investment is usually directed to export-oriented sectors—particularly in those countries where the size of the local market is limited—and the penetration of foreign markets requires greater skills. In time, this knowledge accumulates and finds use on the domestic market as well, with all the beneficial effects on productivity, efficient goods trade and growth rate.

While most emerging markets, regardless of internal capital accumulation, may and should count on private foreign investment to give their rapid growth strategy an additional boost, some countries may also rely on *foreign aid.* These need not be the poorest countries, for transfers of this kind are also a function of geopolitics, regional policy and regional integration processes (Hettne, Inotai and Sunkel, 2001). Thus, for instance, foreign aid on an extremely large scale has been directed in recent decades to Ireland, whose success in catching up with the most highly developed countries would not have been possible without the aid received from the European Union.

Unfortunately, the stream of foreign aid flowing from the rich to the poor countries largely dried up in the 1990s. Despite the United Nations recommendation, undoubtedly appropriate, that highly developed countries should raise the relative amount of development aid to 0.7% of their GDP, the actual proportion fell over the 1990s to 0.22%. This resulted from the combination of naïve belief that private direct investment would be more than adequate to compensate for this loss, and reasonable doubts about the ability of some of the poorest countries to absorb the received aid in a sensible way (Easterly, 2001).

Rather than to places where capital seems to be particularly needed, FDI is far more prone to flow to areas where growth dynamics is already high and a vibrant emerging market exists. At the same time many instances can be quoted of misallocation of funds directed, in the form of non-repayable aid, to countries in particularly strained circumstances, mainly in sub-Saharan Africa. Undoubtedly, without a substantial *increase of the scale of assistance to the poorest economies*—both in the form of the cancellation of debt of those highly indebted poor countries[46] (which cannot be expected to be repaid

[46]In particular, this refers to the 41 economies that make up the so-called HIPC group (Highly Indebted Poor Countries), out of which as many as 35 are located in Africa. In some cases, like Mozambique, they spend more on the servicing of their foreign debt owed to rich countries than on education and health together. Under such circumstances, there is no chance for development.

anyway) and new funds for the financing of human capital and infrastructure development—these economies will not only be unable to enter the category of emerging markets, but will not even manage to make sufficient progress to join the MGC group, where growth rate considerably exceeds the average.

Mature institutions

Mature institutions are of fundamental importance for sustaining a high growth rate. The trouble is that the emerging economies are characterized—by definition—by still underdeveloped institutions and too liquid, as well as frequently opaque rules of the market game. This affects allocative efficiency and impedes growth. Importantly, weak institutions create relatively greater inefficiencies and waste. Everything—with the possible exception of corruption, money laundering and organized crime—functions in such circumstances less efficiently than in institutionally mature economies.

This is why structural reform and successive institution building are so important for the emerging markets (Porter, 1990; North, 1997; Kolodko, 1999b). Today this truth is generally acknowledged and, thankfully, its importance is emphasized by influential international organizations (World Bank, 2001), although this was not always the case. The involvement of such organizations in institution-building in the emerging-market economies appears to go beyond the direct participation in the financing of various projects. The campaign to overcome the development lag is largely fought on the institutional front, where the framework for the functioning of the young market economies is being strengthened.

Size of markets

The size of the markets also has a bearing on growth rate. Under globalization, markets undergo integration, and so they expand in size. At the same time every national economy relinquishes part of its sovereignty over the part of the world market it represents. Thus its capacity to interfere with the market is reduced, which may be a good thing or a bad thing, depending on the effectiveness of the intervention policy. At any rate, a larger market provides a better scope for the proliferation of technological progress and the reduction of manufacturing costs due to economies of scale. A larger market also stimulates enterprise, as it exposes companies to greater competition from other manufacturers. All this has an impact on the production pace and thus may be able to enhance the capacity for catching up.

In a closed economy, the only way for a market to expand was through the increase of internal demand (and supply). Now markets expand because liberalization and globalization are in progress. Some of the emerging post-socialist market economies face in this context their integration with one of

the largest and best-developed markets, the European Union.[47] This is often expected to lead to a rapid convergence and reduction of development disparities between the Union's old members and the candidate states. It should be clearly pointed out, however, that *integration with the European Union by no means automatically entails accelerated economic growth.*

Unquestionably, the integration does create opportunities for such growth, but if these opportunities are to be utilized, many requirements, discussed above, must be met. Some countries achieved this feat in the past, others failed to do so (Daianu, 2002). When Ireland joined the European Union in 1973, its GDP stood at a mere 59% of the Union's average. Now it takes pride not only in having caught up with, but also having overtaken others, as this indicator currently exceeds 120%. Greece, on the other hand, joined the Union in 1981 with an income equivalent to 77% of the EU average, and now its relative position has eroded, as the indicator in question has dropped to just 66%. Similar mechanisms will continue to operate in the future: some actors may succeed, and some may not.

Quality of policy

This will depend on the quality of economic policy, since membership in the European Union—or in any other integration organization elsewhere, be it NAFTA[48] in America, ASEAN[49] in Asia, or SADC[50] in Africa—does not preclude conducting one's own, national development policy. It does restrict, even more so than globalization does, the members' political, and especially economic sovereignty, depriving the governments and central banks of the use of certain economic policy instruments previously at their disposal, but this does not render policy-making totally impossible. Policy-making should, generally, consist in maximizing the advantages offered to the emerging markets by globalization and in mitigating the inevitable risks brought by globalization.

[47]The share of the European Union in the global output is estimated at about 20% in PPP terms and 27.8% at current exchange rates. By way of comparison, the same indicator for the United States stands at 29.9%.

[48]The core of NAFTA, or the North American Free Trade Agreement, is the United States. The other members of the grouping are Canada and Mexico. NAFTA has almost 400 million inhabitants and its GDP exceeds $8 billion, that is about $20,000 per head. Of course, Mexico weighs down this average significantly.

[49]ASEAN (the Association of Southeast Asian Nations) was established in 1967 and initially included only five members: Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Brunei Darussalam joined in 1984, Viet Nam in 1995, Lao People's Democratic Republic and Myanmar in 1997 and Cambodia in 1999. The population of ASEAN region counts about half a billion people, yet the total GDP of it is less than a tenth of the GDP of the United States or European Union. However, ASEAN is strongly committed to openness and active external economic links (not only due to the export-oriented Singaporean economy), hence it is well advanced into integration with the global economy; more than the other regions. The foreign trade turnover of this grouping are matching its GDP and are hovering around $800 billion annually.

[50]SADC (the Southern African Development Community) includes 14 members from the southern part of continent: Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Seychelles, Swaziland, United Republic of Tanzania, Zambia, and Zimbabwe. The entire grouping contributes half of Africa"s GDP, yet a major part of this comes from just one country, South Africa.

Geopolitical location

Besides, of course, one can always celebrate or bemoan one's geopolitical situation. Its geographical component is unalterable, but it is possible to endeavor to change the political circumstances for the better. In the long run, some actors even succeed in this task. This is particularly likely when they manage to utilize fast growth to catch up with the economies which made the forward leap a long time ago.

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Comments and Avenues of Enquiry

Detecting the "gaps": a method to fine-tune strategy

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As a policy maker, I think that my intervention will be mainly targeted to a policy-making approach. Of course, we can have ideas and draw some conclusions but we do not have a single recipe. Still, I am more optimistic concerning theological questions because I have an answer why there is this imbalance between people believing in heaven and people believing in hell: at least one Catholic theologian I think Küng from Germany, is not sure that heaven is happiness and hell is punishment. Heaven, he says, is always happiness. Hell is just something empty. This asymmetrical approach, he says, sometimes works, encouraging people with a reward, while if they behave poorly, then there is just emptiness, not necessarily a physical punishment.

Now policy makers do have to search for consistency and symmetry. With a group of friends we have worked out a way to approach different situations and arrive at positive common conclusions. It is the methodology we applied in the G8 Education Taskforce that I chaired last year. What it proposes when there is a question of development and how best to help countries, is that four things be checked, then on the basis of the check, some answers and common strategies can be designed.

The first thing to check is if there is a *policy gap*. This is the prerequisite and can indicate whether there is poor leadership or a potentially good leadership. If there is political commitment to institution-building, the rule of law, accountability, market rules, and so on, you do not have a policy gap—but there are many countries where there is no policy gap but there are problems because of *social gaps*. This is quite evident in education. It is not enough to build schools: there are countries that have schools but lack teachers, or do not have well-trained teachers, or have teachers but unfortunately one out of three are dying because of HIV/AIDS. This is a question of social capacity, which is crucial: we have examples of countries that received a lot of aid, but because they had no capacity it just went to waste. This can also be seen in the area

of infrastructure: you can help countries to develop small and medium-sized enterprises but if you do not have any distribution system and roads to ship the merchandise, then you have a problem of capacity.

Then there is, of course, the most evident shortcoming, the *financial gap*. Financial resources are scarce in developing countries. There is also the problem of volatility—of prices, of raw materials. To bridge this gap there is only one solution which is public-private partnership. Public-private partnership means co-financing; having guarantee schemes; having new rules or new financial governance concerning the World Bank and IMF; new coordination among regional banks and the World Bank; new IMF policies; better integration between IMF policies and the World Bank. Also, innovative financing is not very distant. In Italy, we are passing a law to de-tax private contributions targeted on programmes in developing countries. We have estimated that with this device we could raise an additional five billion dollars in the OECD area. It is a question of a common approach and willingness.

The fourth thing to check for is the *process gap*. In Italy we suffer from great fragmentation of programmes. We have bilateral programmes with at least 15-20 countries. We have different programmes via multilateral institutions. We have the international financial institutions. This fragmentation of programmes had to be changed into integration in planning and then in implementation. For this we now have as a key element the *poverty reduction strategy papers*, which provide a framework, a roadmap that makes the country consistent, and hopefully also makes the international community consistent in designing new programmes targeted to the goals of a national plan.

So these four gaps—policy gaps, social gaps, financial gaps and process gaps—are markers of sorts that are useful to fine-tune a strategy in a given country.

We do think that there are big differences in dealing with countries at different stages of development. In Europe we can understand that it is one thing to plan political and economic cooperation with countries where, as in Eastern Europe, the problem is to de-structure one system—the former centrally planned system—and structure one. It is quite another matter is to plan cooperation with countries starting from nothing. Maybe from the political point of view, it is easier to start from nothing rather than de-structure something and then structure it anew.

On the question of productivity, which was at the heart of Mr Magariños's presentation, we think that there is a dual approach that can be coupled together according to the situation. From the development cooperation position, we understand that in some countries, we have to have some sort of Smithsonian (as in Adam Smith) approach that begins by looking at the market. If it is too small, let's try to help the country to integrate in its subregional market. We have the experience of the European Union, previously the Economic Community. A subregional market is necessary to have the possibilities of economies of scale and division of labour to mobilise trade. This is crucial.

However, and I think this was hinted at in the presentation, very often it is not only a question of the size of the market (though in Africa we do need a bigger market in any case): it is a question also of technological transfer. And here comes the other approach—the Schumpeterian approach—that says you need a technological leap in order to grow. Technological transfer is a key element that demands technical assistance, targeted financial assistance and a very integrated international strategy. Here again the public-private partnership is indispensable.

To conclude, I think that pooling resources, pooling strategies, better support coupled with accountability, bringing together public and private sectors (and not only as if they were two different channels), bringing all the international actors together—this is the road to be followed.

First, define the values

MICHAEL BRAUNGART
McDonough Braungart Design Chemistry

To take up Professor Kolodko's image, is it not a little bit too easy just to say there is heaven and hell? From my perspective, hell does not exist: it is just the absence of good. So in my field it is just the absence of quality.

To rephrase my point, we seem to be saying that we have a good theory, but human beings do not function the way they are supposed to. Indeed, it would be successful if there were no human beings. Should we not restructure the theory to focus more on human beings first, and their needs, and then say, "How can we design a system that really works for humans needs?" What Professor Kolodko says sounds a little like that old architecture which we had in both West and East when we just made buildings and then looked at how people fit into them, instead of asking how we can respect human beings and create a packaging around them in a way that we serve human beings.

I think there are key questions to which economic science needs to find an answer. How can you protect human self-confidence, human identity? How can you create an economic system which allows people to have self-esteem? It is a matter of discovering how you can create an economic system which really makes people proud, which supports people and strengthens their identity; their local identity, their regional identity. The first key thing that we need to discuss is what are the real values which we share, not what is the structure we can make people fit into.

Policies also needed for the "empty" spaces

GHISLAIN ROBYN
Consultant
UNIDO

Professor Kolodko made a very energetic, very interesting plea in favour of the power of policies, arguing that policy makers can make the difference. They do

make the difference. I know that we will want to know how to intervene correctly; that is no doubt our topic. But to determine how well we can practice policy-making, we should have a notion of the limitations of policy-making.

Take any country—Poland, Great Britain, Belgium, the United States—and you will see, not a uniform country, but pools where activity takes place and deserts where there is no activity. Deserts which are completely empty. There, nothing grows any more. But you have one set of policies; a single set for a country with huge contrasts, comparable to a certain extent to the contrasts that Professor Kolodko shows in his chart. In that case, policy-making will not make the difference.

I think it is true, as Giandomenico Magliano has said, that the past you inherit does play a role in what policy makers can do. You cannot create a modern dynamic leap in an area that is an industrial cemetery, like many of the Eastern countries. Take Moldavia: a tiny little speck that used to produce turrets for tanks that nobody buys anymore. Plants employing 10,000 people used to make those turrets that would then be sent somewhere in Siberia where they would be mounted on a tank. That no longer exists. What exists is a disappointed working class. What exists is leaders from the former era who are trying to reproduce the old social relations of the past. They are attached to that. This, I think, we must understand when we make policies. We must understand that incentives are necessary. This is the key to action.

It is true that liberalization gives rise to uniformity of productivity—but among the central activities. This leaves empty many regions where there is no activity at all, and for these regions, we should also invent something.

Africa must adopt a regional approach

MANSOUR CAMA
President
National Confederation of Employers of Senegal

The image of hell and heaven was very interesting. Maybe in Africa we think that we are in hell and you are moving to heaven because of what we are imagining about globalization. In my view, the only answer we have is the regional approach, regional integration, because our markets are so weak and small. That we think that these are global and what we have to is to implement regional integration. We have in this a framework for our development: partnership among ourselves and partnership with developed countries. We could phase the two.

But we cannot move to this regional integration if we do not have very clear and wise national policies. Here the partnership between the private and public sectors is very important, along the lines mentioned by Mr Magliano. Integrating the African economies to the world economy needs a lot of effort. I do believe that Africa can compete, but this will largely depend on the political leadership, and on our ability to build a vision and share it. Yet this seems to be what we do not have at this point in time.

Requisites: specific context, political will and continuity

S. A. HASAN
Managing Director
Tata Limited

I belong to the private sector in India and it is generally left to us to implement policies that are decided elsewhere. I think that the lesson we should learn is that there are "horses for courses"; you cannot have one policy that is going to fit all countries. You need to look at specific, local conditions, the aspirations of the people, the past that we have had and how we grow on that. Another thing which is crucial for successful implementation of a policy is the political will. If it is not there, I do not think you will be fighting a winning battle—you will be struggling, expending a lot of effort.

The third important thing is that there has to be continuity. If you have changes of regime, if you have changes of leadership, if you keep chopping and changing, you end up lacking a sense of direction, a sense of purpose. Then the missionary zeal with which many people have worked in the past, keeps getting watered down and filtered, detracting from the general effort that is needed.

Starting from scratch: Singapore and Hong Kong SAR

SIR RONALD GRIERSON
Former Chief Executive
General Electric Capitals

My first observation is that one has to be very careful in using words such as public-private partnership. I am myself deeply sceptical of what is being attempted under that designation in my own country, which turns out to be a rather expensive joke. But taking it more widely, I was at one time the chairman of an organization created by a socialist government in Britain called the Industrial Reorganization Corporation—so I have lived at the meeting point between public policy and the private sector, and I believe the correct relationship is a healthy respect by each for the other rather than an attempt (which I do not think is likely to be very successful) to make it look as though there was some natural affinity between the two. The private sector is concerned with making the economy grow and the public sector is supposed to lay down policy: mutual respect has, in my experience, always been the best relationship.

My second observation has to do not with my own country but with the developing world. I think or I feel that it might help to look at the two outstanding cases of economies developing from scratch, as it were, and

developing very successfully: Hong Kong SAR and Singapore. I happen to know both quite well and I would just like to mention one little anecdote concerning Singapore. In 1968, when the economy of Singapore depended almost entirely on the presence of the British army, navy and air force, the British government decided to withdraw all three services. This created a tremendous problem and Mr Lee Kuan Yew went to London to complain about the brutality of this decision, more or less implying that the economic future of Singapore, as a result of that, was very bleak.

The British Government could not think of a better answer than to send me out to Singapore as the head of a mission in order to study what the economic prospects of Singapore were going to be after the withdrawal of the British armed forces (of which, by the way, I had at one time also been a member, in Singapore). I went out there and spent a week going around Singapore, partly with Lee Kuan Yew and partly on my own with my mission, to inspect the various facilities which were going to be vacated by the British armed forces and whether they could be used for this or that industrial development.

At the time, the only industrial activity in Singapore was a caterpillar assembly plant and there was no prospect of anything else. When my mission was at an end after about a week, I gave a press conference, together with Lee Kuan Yew, at which I said I thought there was a possibility of Singapore developing some sort of industrial activity other than the caterpillar assembly plant. I said it without the slightest notion that Singapore might be on the threshold of one of the most exciting industrial developments in Asia, if not the entire world, in a very short space of time. There was not the slightest indication. I talked to Mr Lee on several occasions since then and asked him whether he had foreseen anything remotely resembling what happened. He had not; certainly I had not, and I do not think anybody could have foreseen it. And yet, there you were, within a very short time Singapore has become extremely prosperous economy by the standards of Asia and even by world standards.

I think, therefore, that there must be some point in looking more closely at both Hong Kong SAR and Singapore.

Managerial reform in the public sector

HERNÁN MARTÍN REDRADO
Vice-Minister for Foreign Affairs
Argentina

Professor Kolodko's point that ineffective public policies are the reasons why many emerging countries have not bridged the gap, I think, puts things in the correct framework. There is always a big temptation in our countries to put the blame outside, to think that the problems are beyond our borders, while as we have seen, the explanation for bad performance needs to be focused on internal policies.

One of the points that I would like to complement is his final point, about micro-economic management. I will contend, from my experience in academia and in public policy, that one of the key things that we have not been able to build is a performance-driven organization in government. That is to say, how to measure performance in government, not only from a quantitative perspective but from a qualitative one. To turn the question around, how do we build better lives for our people? What I see in Argentina, in Venezuela, in Poland or any other emerging countries, is that we have not reformed the managerial quality of the institutions of what we call government—*el Estado*, in Spanish—to give them the flexibility we need to be responsive to the public needs, to the needs of our population.

I have been in three positions in the administration: chairman of the Securities Commission, chairman of the Institute of Technological Education and now Vice-Minister for Foreign Affairs. Probably I now have the best-trained people in my team. We have career, we have a pyramid structure. But when I ask people in my team, at the beginning of the year, what objectives they have, they usually start mentioning such things as the agenda of a meeting, say in Mercosur. It is very difficult for people in the public sector, even the best-trained, to think in terms of objectives, to be performance-driven, to think of what, at the end of the year, they want to have achieved.

So I will contend, to complement the very provocative ideas presented by Professor Kolodko, that we need not only micro-economic management at the level of the private sector, but also managerial reforms inside the government. This creates new agenda items: how do we move towards a performance-driven government, building in concepts like empowerment of the people? What kind of incentives do you offer the people working in the public sector in order to train better, to perform better? How do you measure such initiatives in order to provide better quality of public policy?

Addressing specific constraints

JUMA NGASONGWA
Minister for Industries and Commerce
United Republic of Tanzania

I want to add to what has been said about the need for productivity-specific interventions, both at the economy-wide scale but also at sectoral level. In United Republic of Tanzania, where I look after the industry and trade sector, my main concerns have been the gaps or constraints in the supply chain which prevent me from taking advantage of existing market niches. We have specific problems which will need specific solutions. For United Republic of Tanzania it will be, for example, to improve the infrastructure, the railway system, the road system, to a level whereby products can move faster from areas of production to areas of, say, transhipment to overseas markets.

I would also like to add to what Professor Kolodko said about institutions. In United Republic of Tanzania, because of our historical background, the private sector is very young—in its infancy, one would say—and therefore it does not have the necessary capacities in terms of financial or structural resources; for example, organizations which you can trust in terms of giving resources so that they can make the necessary investments. Or take our privatization programme, where the people who bought the assets never developed them; they are lying idle. So you can talk about a private-public partnership, but you cannot have that kind of arrangement if you do not have a private sector.

Response: a look at policy-making in real life

GRZEGORZ KOLODKO

If one is dealing with economic theory and especially with economic policy, one is exposed to criticism and attacks all the time, because policy is not only about coordination, policy is about conflict management. There is an inherited, implicit conflict of interests and addressing this issue is extremely difficult. Different economic agents are expecting or foreseeing or asking or calling or pressing for different solutions—and now the problem is even more important because we are in the global economy. Nobody says that they want, say, to deprive the retired people. Everybody says they are fighting to protect the national environment, or for income distribution, or for transparent regulation, or for low taxation to promote the growth.

The difference between developed, institutionally mature markets and developing or institutionally underdeveloped or to a degree emerging markets is that there is much greater room, unfortunately, for political gain in the emerging markets. I avoid diplomatic parties and official gatherings because the instant I am there, everybody wants to make a deal with me; everybody is seeking gain. Most of them are trying to cheat me, because they have vested interests. When I was recently with the Philharmonic Orchestra, the First Violin asked me, "Prime Minister, when will you raise salaries?" This is how we work. The salary of the violinist in the symphony orchestra until recently depended on a government decision. It still does, but now only for so-called national institutions of culture, of which we have 32.

So what about the others? I am not a social Darwinist. I think that the de-regulation and decentralization of paying for the cultural institutions makes sense only if it is given to the local governments, but that implies that the local government has the resources, the money to support, for instance, the local symphony orchestra. I do not like these unnecessary ugly demonstrations here and there—in Geneva or Seattle or Prague or Washington—but most of the people are right. They are really asking to change the agenda and to take care of certain matters.

So real policy-making in real life, not in the seminar room, is an extremely difficult art—and it is an art, not just a knowledge or technocratism. It is an art of sailing between the Scylla of primitive neoliberalism and the Charybdis of too much populism. It is very difficult to find the way. It is extremely difficult and sometimes you have to hear that you are too liberal or too socially or too populistically oriented. But I have to challenge any suspicion that there is any sort of "social Darwinism" either in my research on economic thinking or in my recent policy-making. Go to my website (www.tiger.edu.pl.) and you will instantly see "Globalization with a Human Face". That is our slogan.

Transition versus transformation

We are looking for a way to develop a social market economy of the post-communist type, but in real life, not in the text book, not in the ivory tower of research in this or that university—but also, of course, not in the profit-oriented business. Is it the transition to the market economy or is it post-communist transformation? Is transition the same as transformation? No. Transition is from here to there—and we know what is there, or so we presume, in the very particular case of certain Eastern European countries which are applying to join the European Union. In these countries, we may say that this is transition to a full-fledged market economy. If you want to see the future, you take a look into the recent past of Spain, Portugal, Greece, to an extent even Ireland. That is the future of these new members of emerging markets of the post-communist Europe. The institutional framework in these countries, of course, is not like that of the United States. Within Europe we would be much more similar to the relatively weak institutional fundamentals in Italy, than, say, the stronger ones of the Benelux or the Nordic countries.

But for many other countries, it is transformation. They are transforming; it is an open-ended process. We have to accept that we are sailing uncharted waters and that the world will be different in 25 years, in 50 years, in 75 years. There will be new values of which we might not even be aware yet. There will not be only the second Japan, the second United States, the second Germany, the second Sweden, the second whatever. Maybe for Turkmenistan the dream now is to be the second Turkey. Yet for Turkey, the dream is to join the European Union and for the European Union the dream is to defeat the United States in the global competition fight. Maybe, perhaps not in our lifetime, we will even have to compete with the extraterrestrials. The point is that there are very many unpredictable things.

I think this is indeed an open-ended process, but honestly and simply, there is no such option as joining the European Union for Georgia, for Azerbaijan, for Kazakhstan—even if the Kazakhi are saying, "Well, but 4% of Kazakhstan is in Europe, from a strictly geographical point of view." Paraguay is in America and that does not suffice to apply to be the 51 state of the

United States, because other factors weigh more. So this sailing between the Scylla of neo-liberalism and the Charybdis of populism is actually looking for a way to create a social market economy.

So what is the question? The question is how to share the results of growing economy—but is it a growing economy? At least for me, the first question for any policy maker, for an economist, before considering how to distribute the income, is whether we have done the feasible and sensible and possible—everything at the macro and micro, policy and business levels—to raise the rate of growth and to sustain it. This is the most important question. That is my way of thinking and acting—and I am angry about the time wasted, because really we could have achieve much more in Eastern Europe over the last decade.

Efficiency versus equity

The question about the trade-off between efficiency and equity still holds. Now is it possible to have more equity and higher efficiency? Very many liberal biased colleagues say no: if you want to have faster growth, you have to sacrifice, you have to accept higher unemployment, higher exclusion. They do not say this in so many words. They say that the labour market must be more flexible. I do agree that labour markets must be more flexible, even in the European Union if compared to the United States. But if that implies that the private sector must have a completely free hands to hire and fire, and the Finance Minister and the Social Affairs Minister has to provide for the people who are unemployed, then I am not sure it is an acceptable viewpoint. We have to share responsibilities with the private sector on retraining, redeployment, contribution to social security, to the healthcare, etc.—because otherwise the profits will be privatized 100% and the losses will be nationalized 100%. And how to pay it? Out of the fiscal deficit? Then, of course, the IMF is right that we have to contain the fiscal deficit, but how to do that? By collecting the taxes? No: the private sector does not want the taxes, so we end up fighting with the so-called shadow economy, which is a tax in a different format.

So we are seeking a policy of improvement of efficiency and also, at the same time, taking care of equity. This is possible. In Poland in 1994-1997, for instance, the economy was growing by 6.4% a year in real terms. If Poland's GDP is now 129% of the pre-transitional level of 1989, it is because of the strategy adopted in 1994-1997, not because the shock without therapy before and the cooling without sense afterwards.

The biggest challenge, though, is not in Eastern Europe or the European part of the former Soviet Union, including Russian Federation—where GDP growth means per capita growth, because there is no population growth. Here is a tremendous difference between us and Africa, Asia and Latin America. We have very many Latin American countries where even 2% growth of real GDP implies per capita decline because of the population growth.

Technology versus jobs

A point for UNIDO. We have been talking about technological progress, but what does one do when one has inherited a rate of unemployment of 18%? Do we still fight everything in order to achieve fast technological progress, or do we tailor policy to protect as many jobs as possible, even in non-competitive industries which are barely making ends meet but employ people. What we do if, a great global Japanese company, is pushing us and playing with us, lobbying to invest over three years about €400m—not a great deal of money—in a high-tech car engine factory that will employ 450 people. But they are asking, to give them a subsidy of €50m over a period of time. In a sense they are blackmailing us: they say that if the do not get what they want they will invest in the Czech Republic, or in Hungary. And, of course, the media go crazy about that; you cannot go to lunch without meeting the cameras and the question, "Are you going to waste this chance?" And the chance is simply to subsidize them, because if we will not, the Czechs will—all to create 450 jobs in a high-tech industry.

So what would you do if you had €50m and an 18% rate of unemployment? I know very many means of financial engineering and supporting small- and medium-scale business, whereby for such an amount of money I can support the creation of 4,500 jobs instead of 450. But, of course, not high-tech—say, repairing the roads.

These are policy choices, but it is also a very interesting case study. What do we do at this stage of development? We are trying to bring down unemployment as the highest priority but without falling into too much populism. This is possible. In 1994, when I presented my strategy for Poland, I was accused by the opposition that was contrary to the Philips Curve—because unemployment was high (about 17%), inflation was high (close to 38%) and my policy was to bring both down significantly. That is against the Philips Curve. We brought unemployment down from 17% to 10% and we brought inflation down to 13% by the end of 1997. Unfortunately, because of this idiocy of over-killing the economy, unemployment is at even more than 18%. Inflation is 1.2%. So now the question is how to bring unemployment down without actually raising inflation because this is the real accomplishment.

What about the populistic option: let us have a little bit more of inflation, we have a little bit more money, which will fuel the economy? No. It will backfire—and here I am as orthodox as my colleagues from the IMF.

One more point to compare. I recently met my fellow Finance Minister from Lithuania. She is not paying a penny to the social security out of the State budget. Why? Because the average pension in Lithuania is at only 40% of the average salary in the national economy. Because of the whole historical and demographical processes, I have to pay out of my budget the equivalent of 5.5% of GDP to subsidize our pay-as-you-go pension system. Then you read in the *Financial Times* that we have to overhaul the system—the same as

they would tell Argentina: you have to fix it by tomorrow. This is completely irresponsible advice. One has to understand the structure of the problem. There are 9.2 million people who are disabled and retired, there is the law, and there is the legacy. So we are fighting this process in a very gradual way; it will take another generation to overhaul the system. There are those who suggest that this is loose fiscal or financial policy. Actually, there is no policy choice, at least not in the short run. In the long run, yes, we are going to get much closer to the Chilean-style system of social security.

Chapter 3

Alternative Paths to Prosperity: The Evidence from Africa and South Asia

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> Unless one can close the gap in capital per worker, one will not close the gap in output per worker. Hence the need for strong incentives to accumulate capital in poor countries and, indeed, to keep the capital in the country where it is being accumulated.
>
> Closing the gap in inefficiency between countries requires fostering international linkages—reducing all the inconveniences of doing business in a foreign country.
>
> Without broad access to assets and markets, a country will be afflicted by high levels of inequality, and hence social and political instability, that deter investment.

I will focus on Africa and South Asia, because these are the two poorest regions of the world, in which the majority of the world's poorest people live, and because eliminating extreme poverty is the objective of the organization for which I work, DFID. I will refer first to some common conditions for the elimination of mass poverty, but also emphasize that there are alternative ways of meeting these conditions. Then I will turn to another dimension of alternatives and talk about different development trajectories in open economies and in particular about how differences in human and natural resources affect the paths that they follow, focusing on the differences between Africa and South Asia. Finally, I will offer a few comments on industrial policy, which may have some implications for the work of UNIDO.

Common conditions for the elimination of mass poverty

It seems to me that all countries that have eliminated mass poverty, in any part of the world, at any time in history, have done all of the following three

things: created strong incentives for investment, fostered international business linkages, and provided broad access to assets and markets. These three things, in my view, are necessary conditions for the elimination of mass poverty and together I think that they are sufficient conditions. None of them is unfamiliar, although this way of packaging them may have some novelty, and I will go over them quickly. But they are so important that one should never forget them, and I want to highlight one or two aspects that I feel have been neglected.

Create strong incentives for investment

About half of the gap in output per worker between rich countries and poor countries is explained by differences in the amount of capital per worker, human and physical. Unless one can close the gap in capital per worker, one will not close the gap in output per worker. Hence the need for strong incentives to accumulate capital in poor countries and, indeed, to keep the capital in the country where it is being accumulated. Of these incentives, the most important is to reduce the non-commercial risks of investment, which are very high in some poor countries. Above all, there must be peace and political stability. I would emphasize also the importance of adequate infrastructure. For example, an unreliable electricity supply adds to the risks of investment.

Foster international business linkages

The other half of the big gap in output per worker between rich countries and poor countries is explained by differences in total factor productivity, which measures the efficiency with which all resources are used. Again, this gap in efficiency has to be closed, an issue on which Mr Magariños has focused (see Introduction). This requires the international transfer of technology in the broadest sense, covering working practices of all kinds. And there is no doubt in my mind that international business linkages are the most important channel through which such transfers occur, particularly through trade, but also through direct foreign investment.

What does it take to foster international business linkages? Economists focus on trade policies and policies towards direct foreign investment. These are important. But one should not overlook the importance of low transport and communications costs, as has been emphasized by United Republic of Tanzania's Minister for Industry. Transport and communications costs depend on geography: distances are much longer, for example, in most of Africa than in most of Asia. They also depend crucially on infrastructure: good transport services reduce transport costs, even where the distances are long. I would emphasize also the importance of simply reducing all the inconveniences of doing business in a foreign country. Reducing hassle, corruption, and personal danger, for example, are things that rate highly on the lists of priorities of businessmen, although they do not feature in economics textbooks.

Provide broad access to assets and markets

This third condition is not just about equitable distribution. It is about mobilizing the entire resources of a country, particularly its human resources, without which one will not get sustained growth. Moreover, without broad access to assets and markets, a country will be afflicted by high levels of inequality, and hence social and political instability, that deter investment—there is thus feedback from this third condition to the first condition. I emphasize here providing broad access not only to assets (above all, education, land and credit), but also to markets—meaning goods and labour markets within a country. My second condition was about fostering international business linkages, but fostering internal business linkages is also crucial, particularly in large countries. In other words, I am arguing for broad access both in a vertical sense, closing the gaps between different social groups, and in a geographical sense, integrating even remote regions into the development process.

These are my three necessary and, I believe, together sufficient conditions for the elimination of mass poverty. All of them, I should stress, are much easier to say than to do. Indeed, meeting these conditions in some of the least developed countries is a really daunting challenge. However, I also want to suggest, in line with the title of my talk, that there is more than one way to meet each of these conditions. Developing countries have options, and hence they have choices. Consider international business linkages, for example. The successful countries of East Asia pursued various different trade policies. The same applies to creating incentives for investment. The free market, capitalist, private incentive approach was used in some East Asian countries, but China used rather different means to stimulate high investment rates.

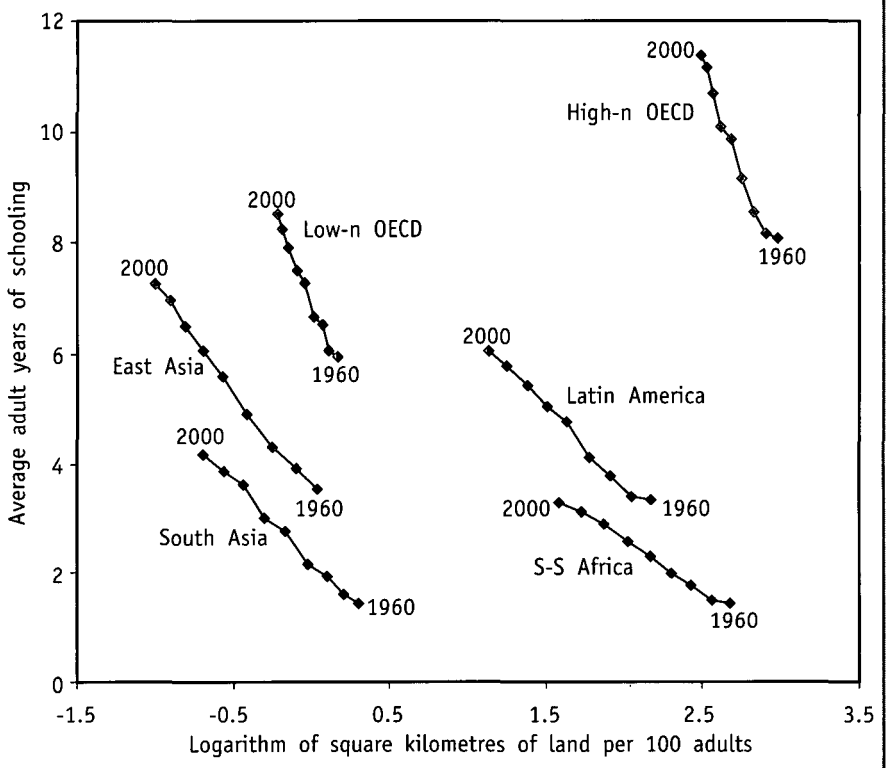
Different development trajectories in open economies

I now come to the alternative paths to prosperity in open economies—by which I mean countries that have met my condition of fostering international business linkages. I want to explain how these alternative paths or trajectories are shaped by differences in the natural and human resources of countries. I will outline the general effects that resource differences have on the sectoral structure of exports and output, and then refer specifically to the implications for South Asia and for Africa.

Variation in natural and human resources

Figure III.1 shows some important differences in resources. Its vertical axis measures average years of schooling, roughly reflecting the average level of labour force skills. The horizontal axis measures land area per worker, roughly

Figure III.1 Regional resource ratios, 1960-2000



Source: Wood (2002). Adults are over-15s.

reflecting the relative availabilities of natural resources and of labour (the horizontal scale is logarithmic, so in reality the differences are much wider than the figure at first sight may suggest).

A point in this space would correspond to a particular country in a particular year, and would show where that country fitted into the world in terms of its endowments of skill and of land per worker. However, what is shown in figure III.1 is not a set of points, but a set of "worms" which refer to six important regions of the world—average values for South Asia, sub-Saharan Africa, East Asia, Latin America, the land-scarce OECD countries of Western Europe and Japan, and the land-abundant OECD (Organization for Economic Cooperation and Development) countries of North America, Australia, New Zealand, and Scandinavia. The "worms" show the evolution of the resources of each of these regions over a 40-year period, from 1960 to 2000. All the worms move in the same direction: to the left because population has gone up in every region and, therefore, the amount of land per worker has gone down; and upwards because in every region levels of education have risen.

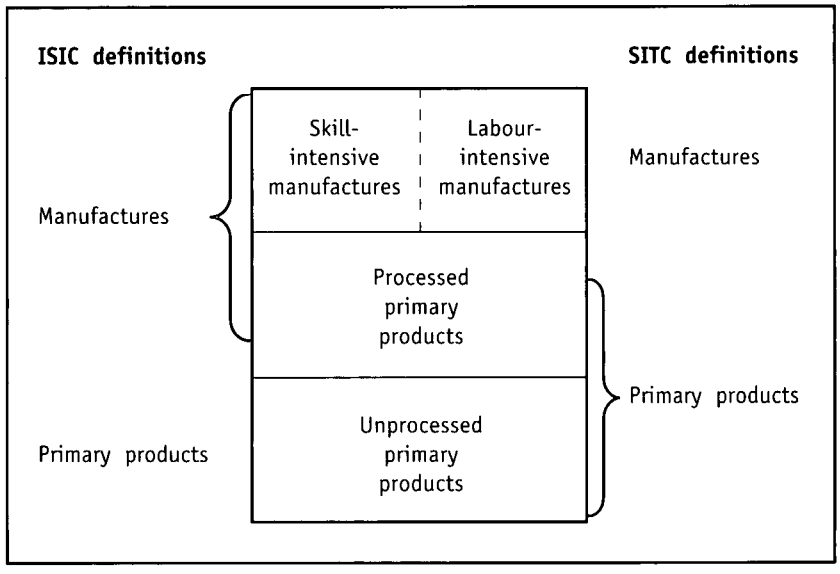
Two main points emerge from this diagram. One is that there are *big differences among regions in terms of their human and natural resource endowments* (within each region there is also a lot of variation). The other point is that *these differences among regions are persistent.* The relative positions of the six regions in 2000 are much the same as they were in 1960, and it is likely that 40 years hence they will also be arranged in roughly the same sort of way.

Effects on sectoral structure

The significance of these differences in resource endowments is that they cause the sectoral structure of output and trade to vary. For common-sense reasons, which economists have turned into a formal theory, a country is likely to specialize in producing and exporting goods that use a lot of the resources that it has in abundance, simply because it can produce those sorts of goods more cheaply than other goods and other countries.

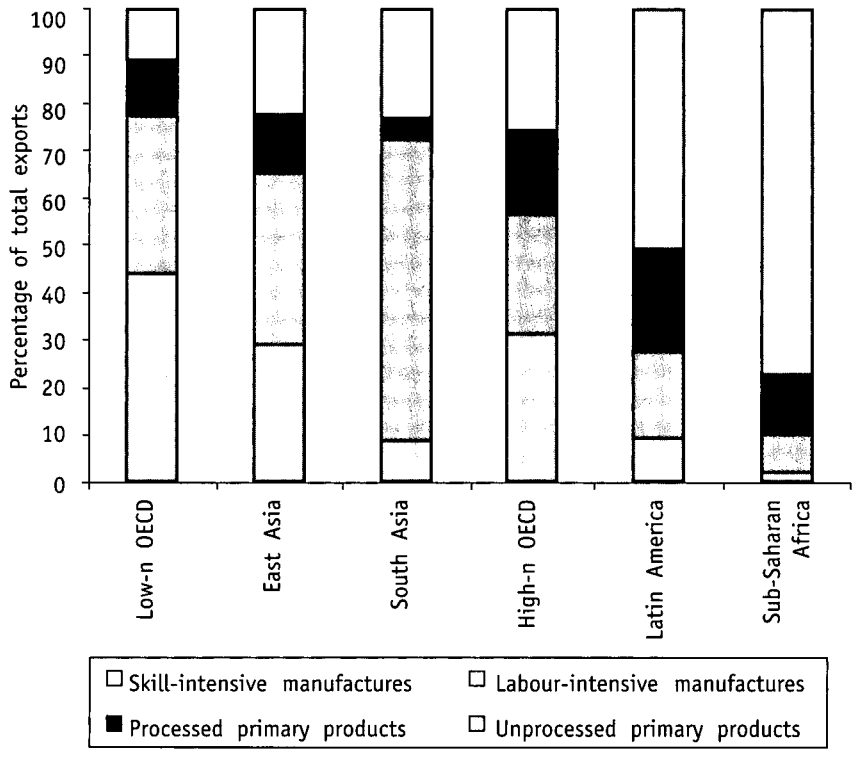
Figure III.2 shows schematically the division of total merchandise exports into four categories of goods, while figure III.3 applies these categories to the same six regions as before, with the three land-scarce regions on the left and the three land-abundant regions on the right. Each column shows how the exports of the region concerned are divided among the four categories. Working from the top, the light blue bar is unprocessed primary products, both agricultural and mineral. The black bar is processed primary products—natural resource-based items that are produced in some kind of factory or indus-

Figure III.2 Export categories



Source: Wood (2002).

Figure III.3 Composition of exports (By region, 1990)



Source: Wood (2002). Unweighted averages.

trial installation. The blue and grey bars both refer to manufacturing in the narrow sense in which it is defined by trade statisticians. The grey bar is labour-intensive manufactures, things like shirts and shoes. The blue bar is skill-intensive manufactures, things like chemicals and machinery.

There are clearly big differences among the export structures of these regions. Moreover, there are some rather obvious relationships between these differences and the differences in resource endowments in figure III.1. In particular, there is a difference between the three columns on the left and the three columns on the right. *Each land-abundant region has a higher primary export share than the corresponding land-scarce region at roughly the same level of development.* That is true, for example, not only of Africa compared with South Asia, but also of the land-abundant OECD compared with the land-scarce OECD. In a country such as the United States, primary products are still a much bigger share of exports than in Western Europe and Japan (despite all the subsidies).

On each side of figure III.3, export structure varies among the three columns in ways that are evidently related to differences in the level of skill per worker. *The share of manufactures rises with the level of skill per worker* (except between South Asia and East Asia), which makes sense because manufacturing is generally a more skill-intensive activity than primary production. *The ratio of processed to unprocessed primary products also rises with the level of skill per worker*, which makes sense because primary processing is in general a more skill-intensive activity than producing raw primary products. And, of course, *the ratio of skill-intensive to labour-intensive manufactures rises with the level of skill per worker.* So broad differences in the resource endowments of different regions map directly into broad differences in their export structures.

The two low-income regions which are my main concern, Africa and South Asia, have rather different resource endowments and hence are likely to have rather different development paths. The "worm" diagram (figure III.1) suggests that South Asia is on the lowest rung of a development ladder below East Asia and the land-scarce OECD countries of Western Europe and Japan. By contrast, Africa appears to be on the lowest rung of a ladder of development below Latin America and land-abundant OECD countries such as the United States. I will refer to each of these two regions separately.

South Asia's development trajectory[1]

South Asia is the more straightforward of the two. As figures III.1 and figure III.3 imply, it has the potential to go down what one might call the East Asian path, provided that it can overcome some internal obstacles to prosperity related to my three conditions. In other words, *South Asia, like East Asia, could eliminate mass poverty through rapid expansion of manufacturing production, with a massive shift of labour out of agriculture into industry.* For there is so little land per worker in South Asia that, so long as most of its people have to earn their living from agriculture, they are bound to remain poor, however productive they are able to make the land.

Within South Asian manufacturing over the next decade or two, the main area of expansion should be labour-intensive manufactured exports, in which the region has a strong comparative advantage. In figure III.3, the light red bar that shows the labour-intensive manufactured share of total exports is far bigger in South Asia than in any other region.

I should mention that this is not a message that South Asian governments necessarily wish to hear. When one talks to policy makers in India, for example, they seem much more interested in the expansion of software exports and of more skill-intensive sorts of manufacturing. India has of course been successful in software, and undoubtedly has further to go in that sector, but in

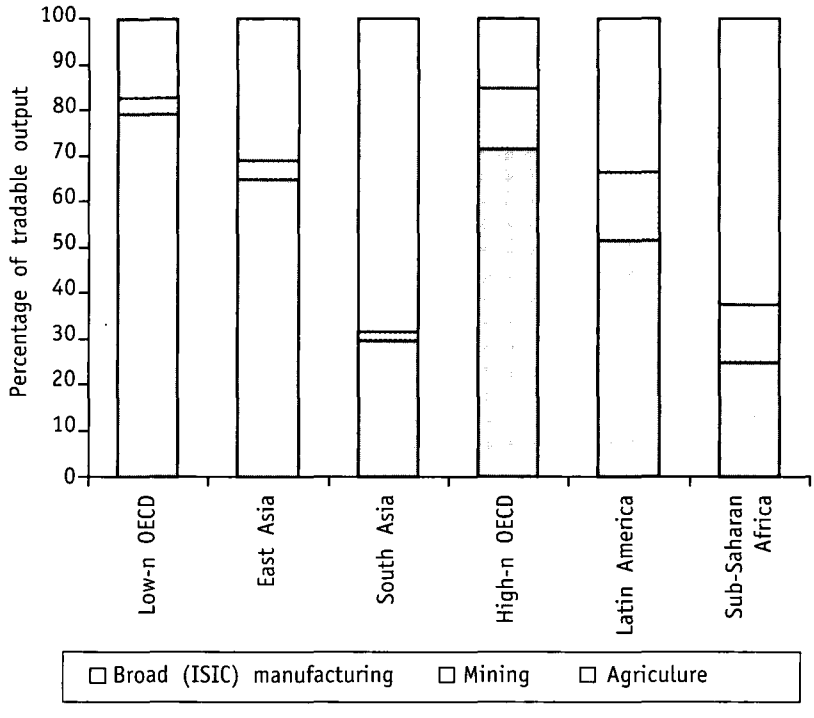
[1]For a fuller discussion, see Wood (2000) and Mayer and Wood (2001).

my judgement this is not fundamentally where its comparative advantage in world markets lies. Moreover, expansion of software is not nearly so effective in reducing poverty as expansion of labour-intensive manufactured exports, because making shoes and shirts could employ large numbers of people who are now poor, in a way that writing software could not.

In order to go down the East Asian path, South Asia will have to meet all three of the common conditions that I stressed at the beginning. It must strengthen incentives for investment, which basically means having a less intrusive bureaucracy and better infrastructure. South Asia also needs easier international business linkages—not least, bigger and better managed ports and airports. In a recent survey, an international footwear buyer said that in five years time it would be sourcing fewer shoes from India than now (Schmitz and Knorringa, 2000). This was because of the hassle at ports and airports of getting the inputs needed to make the shoes into India and getting the shoes out. Much the same, alas, is true of Bangladesh.

The third of my conditions that South Asia needs to meet is broader access to assets and markets—above all, bringing the entire population up to a level of literacy which would enable them to participate in modern manu-

Figure III.4 Composition of tradable output (By region, 1990)



Source: Wood (2002). Unweighted averages. Output is value added.

facturing, and connecting up the interior of each country by a better system of roads and telecommunications. Sixty per cent of South Asia's huge population lives more than 100 kilometres from the coast. It is crucial for poverty reduction that this vast internal market becomes better integrated.

So South Asia still lags a long way behind East Asia. To grasp the size of the lag, consider figure III.4, which is similar to figure III.3, except that it shows shares not of exports, but of tradable output (measured by value-added). The regions are arranged in the same way, and many features of their export structures are replicated in their output structures, as one would expect. But there is a significant difference in the comparison between South Asia and Africa. In the export diagram, South Asia has a much larger manufacturing share (the two red bars), but not in the output diagram. The share of manufacturing in output in South Asia is little higher than in Africa, despite its much greater scarcity of land, indicating that South Asia is a long way from fully realizing its comparative advantage in labour-intensive manufacturing. To put it in human terms, the bulk of the population of South Asia is still scratching a miserable living from the land, when it ought to be working in factories.

The challenge for policy in South Asia is thus to remove the obstacles that are impeding the realization of its comparative advantage. I can say with much pleasure that a lot of progress has been made over the past couple of decades—much more than in the previous two decades. However, South Asia could do a lot better, and poverty reduction could be much faster.

Africa's development trajectory[2]

I now turn to Africa. The main point that emerges from figures III.1, III.3 and III.4 is that *Africa's comparative advantage lies in primary sectors*, unlike South Asia, simply because Africa has far more natural resources per worker than South Asia. So not only is the share of primary products in Africa's exports now large, but it is likely to remain large. It will decrease in the course of development—as figure III.3 shows, the primary export share is lower in Latin America, and lower still in the land-abundant OECD countries. But even at a high level of development, Africa will still rely for a substantial proportion of its exports on natural resource-based sectors.

I must stress that the export and output diagrams are about shares or proportions, not about absolute levels. And the levels of exports and output in every sector in Africa are now so low, compared with what they would be if Africa were prosperous, that there is huge scope for expansion in every sector. In particular, although manufacturing will remain a smaller proportion of exports and of output than in South Asia, it should grow enormously in absolute terms in the next few decades.

[2]For a fuller discussion, see Wood and Mayer (2001) and Wood (2002).

However, narrowly defined manufacturing (not heavily dependent on natural resource inputs) in Africa is likely to be concentrated in a fairly small number of countries and areas, and particularly in coastal regions, which have better links with world markets. This pattern of industrial coastal conurbations in Africa would resemble that in North America, another large land-abundant continent, where most manufacturing is concentrated in a few areas on the coasts or Great Lakes. Where might these areas be in Africa? I guess that one of them will be the coastal strip between Dar-es-Salaam and Mombasa. In West Africa, I suspect that the coastal concentration of manufacturing will be centred on Nigeria, with a third major conurbation spanning South Africa and parts of Mozambique.

Moreover, even with rapid growth of narrowly defined manufacturing output and exports in these coastal areas, *the great bulk of the increase in Africa's exports over the next two or three decades must come from natural resource-based products*, simply because they account for such a large share now. What sorts of natural resource-based products? I would mention two in particular. One is non-traditional, unprocessed items. Good examples are the exports of fish from Lake Victoria, and the horticultural exports of Kenya and United Republic of Tanzania. African countries have good models in this regard in Latin America: both Chile and Costa Rica have achieved great increases in their exports of non-traditional agricultural products over the past couple of decades (Agosin, 2001; Rodriguez, 2001).

The other promising area that I would like to mention is mining. In figure III.4, showing the output structure of each region, the red bar is manufacturing, while the two upper bars are mining (in the middle) and agriculture. And it is clear that in all of the three land-abundant regions on the right, mining is a much bigger share of output than in the three land-scarce regions on the left. Mining is thus an important sector for Africa's development, and particularly for the growth of its exports. It may be even more important than my figures make it seem, because a lot of Africa's land area suffers for agricultural purposes from its tropical climate, which causes leaching of soils and difficulties in pest and disease control. Thus my land area numbers may overstate Africa's land abundance in relation to agriculture—but not in relation to mining.

I should also make clear that when I talk about a major expansion of natural resource-based exports and output, I am including processed as well as unprocessed primary products. In figure III.3, it is worth noting the large share of processed primary products in Latin American exports. So if one defines manufacturing broadly, to include processed primary products, in Latin America that broad share is nearly double the narrow manufacturing share. A similar pattern is likely to prevail in Africa.

Moreover, the expansion of primary processing will have a different geographical distribution than narrowly defined manufacturing, because a lot of primary processing is tied by transport costs to the location of the natural resources. Thus primary processing will be more spread around in Africa than

narrowly defined manufacturing (which, as mentioned, I expect to be concentrated in a few coastal areas). And primary processing is just as demanding in terms of skills and technology as manufacturing narrowly defined—it is not an easier or less advanced sector (Owens and Wood, 1997). This is both bad news for Africa, in terms of the difficulty of doing it well, and good news, in terms of the scope for learning and building up technological capability through primary processing.

Industrial policy reconsidered

I have emphasized the likely differences in the future sectoral structures of these two low-income regions, Africa and South Asia. This emphasis naturally makes one wonder whether the optimal policy packages in these regions should also be sectorally differentiated. Should one pay more attention to some sectors than to other sectors? One is thus drawn into the well-known and much-debated question of industrial policy, including support to infant industries, on which I would like to offer a few thoughts.

The first of these thoughts takes us back to where I started. In my view, the top priority for low-income countries is to meet the three common conditions for poverty reduction: reducing the risks of all kinds of investment, removing obstacles to international business linkages, and spreading access to assets and markets. Without these general or across-the-board improvements, interventions in particular sectors will be of limited value and in some cases counter-productive, especially if they divert public money and effort away from meeting the three more basic conditions.

A second thought concerns the practical constraints on giving support to particular sectors. There has been a lot of experience with trying to protect, promote and develop particular sectors, and most of it is discouraging. It can all too easily lead to corruption; it places heavy demands on the scarce administrative capacity of governments; and mistaken choices of sectors and products to support can be very costly. This has been the general record of industrial policy both in Africa and in South Asia. For example, India's accelerated progress over the last couple of decades owes much to the easing of an elaborate system of industrial planning and licensing which was intended to foster growth but actually had the opposite effect.

This is not to deny that sector-specific support can be effective. I believe, for instance, that it contributed to rapid progress in East Asia. However, there are far more examples of sector-specific interventions working badly than there are of them working well, which leads me to urge caution about any action of this kind. I am particularly hesitant about the protection of sectors from imports and about direct subsidies to individual firms. One can make a much stronger case for indirect interventions such as support to research, training, dissemination of information and perhaps specific sorts of infrastructure.

As regards where to focus such indirect sector-specific measures, the clearest implication of my talk is the importance of providing support of this kind in Africa to agriculture and to mining. If Africa is to take full advantage of its abundant natural resources, there must be more research in these sectors, and more specialized education and training. Again it is instructive to make comparisons, both with Latin America and with land-abundant OECD countries such as the United States. I mentioned Chile and Costa Rica as two countries that have done well in non-traditional primary exports. In both cases this success was based on a lot of sector-specific investment in training, information dissemination, extension services and even specialized higher education in sectors like forestry (Agosin, 2001; Rodriguez, 2001).

Similarly, in the case of the United States, the example of Land Grant Colleges has been alluded to elsewhere (see chapter 8 section on "Land Grants and other state funding"). More generally, one important reason why countries such as the United States and Australia have achieved high levels of output from their abundant natural resources over the last century is that they invested heavily in specialized research and education in agriculture and mining (de Ferranti and others, 2002). This is a lesson that Latin America can learn from North America, and one that Africa can learn from both the Americas. This comparison also shows that the land-abundant development path really can lead to prosperity. The richest countries in the world are the land-abundant ones, not the land-scarce ones, implying that Africa has great opportunities, if only it can realize them.

The correct focus for sector-specific support is less obvious in South Asia. Clearly, there is less need than in Africa for indirect support to natural resource-based sectors (although it would be a serious mistake to forget about South Asian agriculture). What is less clear is where, if at all, one should focus sector-specific support within manufacturing and in services. The software sector in India has succeeded without (and indeed has probably benefited from the absence of) government intervention. And in the sector I identified as having most potential, namely labour-intensive manufacturing, what is needed is mainly just the removal of obstacles. South Asia does not need a lot of technical support to learn how to make and export shirts and shoes. It simply needs to relax the infrastructural and bureaucratic constraints that discourage businessmen in the rest of the world from sourcing these items from South Asia.

Over time, as its level of education rises, South Asia will move increasingly into more skill-intensive manufacturing activities where, in principle, there is more scope for sector-specific indirect support. I hesitate, though, to advocate any active movement in that direction, simply because of past experience of what South Asian bureaucracy can do to industrial development if encouraged to intervene too much.

To summarize, my conclusion on industrial policies is that there is sometimes a good case for support to the development of particular sectors in

low-income countries. However, such support is effective only within a framework in which certain common conditions have been met across all sectors. It is also usually better to avoid direct protection and subsidies, and to use instead more indirect interventions—of the sort on which UNIDO now focuses.

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Comments and Avenues of Enquiry

Questions arising from a shift in development path

GEORGE ASSAF
UNIDO Representative
India

Three lines of inquiry arise from Adrian Wood's interesting and insightful analysis. The first and more general one that the analysis is a very good description and identification of natural-resource-based development paths for each region—but how does one move from one development path to another, if that is envisaged? And what is the role of policy in such a transition?

The second one concerns the point about South Asia, and particularly India, my host country now; the suggestion that in a sense India's resource endowment would imply that its comparative advantage ultimately dictates that there be a massive shift from agriculture to industry. Now, not to undermine the importance which I believe that industry has in India's economic renaissance, but I wonder what would be the implications of that in terms of social and cultural barriers and the importance of agriculture for the Indian identity and the Indian, the Hindu rate of growth?

The third: setting the analysis against the actual performance of successful and unsuccessful countries, how do they compare? How does the analysis match up with the actual performance of various countries?

Implications of adopting the United States and Latin American pattern

KANDEH YUMKELLA
UNIDO Representative
Nigeria

I see some contradictions or difficulties with the trajectories presented by Adrian Wood. The first: if indeed the conclusion is that Africa would follow the trajectory of Latin America and the United States, this means that com-

mercialization of agriculture would be critical, as it has been in Latin America and the United States. In other words, bigger private-sector holdings. But this contradicts the agriculture policy ethos in Africa as proposed by the World Bank: they are still pushing smallholder agricultural development. That is not the way Latin America or the United States has progressed, if you look at the policies of what they call the CGAIR, the Consultative Group on Agriculture Research.

The second is what appears to be a contradiction with Michael Braungart's presentation on environmental issues (chapter 9). Africa has the lowest use per hectare of inorganic inputs in agriculture. So if they have to follow the trajectory of Latin America and the United States, they will have to engage in more intensive production. That goes against the recommendation to more organic inputs—though that is not sustainable either: you cannot run a 2,000 acre farm on organic fertilizer.

The last point is that I have a problem with the deterministic view that locks Africa into commodity trading. This has been the criticism for 40 years, going back to the literature from Latin America on dependency. This is the cycle that needs to be broken. Africa needs to add more value, move into other higher levels of production, which is advocated in a sense by the United Nations Conference on Trade and Development (UNCTAD) recent investment report. So I am troubled by the idea of locking Africa into a trade pattern which is also reinforced by the subsidies in Europe and elsewhere that are creating more distortions in agricultural trade. This is locking us into a process that is, in fact, reinforcing poverty.

Ensuring the right dynamics

GHISLAIN ROBYN
Consultant
UNIDO

Professor Wood's presentation is mostly about tactics. But there remains a question of dynamics. If something happens in these regions, it will probably look like what Professor Wood indicates. But will it happen? Will dynamism go to these regions? This is also an interesting question but a different one.

In the graph comparing resource ratios between regions (figure III.1), the case of the two regions of interest—South Asia and Africa—is tragic. The curves are flat, and they go in the wrong direction: there is less land per worker and also less education. These regions do not educate themselves as much as other regions. They may be a deep reason for that; perhaps there may be no incentive to invest in education when you see your lifespan reduced very much by AIDS, for instance. It would not be a rational decision to invest something that will not bear fruit.

We must be concerned about the dynamics and this is why I think we should introduce the perspective of globalization. Globalization ideally should be complete. But let us look at the production aspects of globalization. What happens there? Some activities appear to benefit from operating in close spatial interactions like science. It also seems that industrial activity benefits from local interaction. If that is true, then, left to itself, globalization will not lead to uniformity of activities; it will lead to heavy concentration of activity. Globalization would serve the interests of people capable of achieving this interaction, but would this serve the interests of other people? We have seen there the collapse of convergence: some countries go flat; their real income seems to be heading towards zero. They disappear from the map of economy activity.

Others climb. We have two parallel ascents; one of true innovation, the other of true adaptation—the transfer of technology ensuring a continuous climb at more or less the same rate as the first. That may be a future for us. Do we want this future? I can see this type of manufacturing appearing on the two English-speaking sides of Africa. I can also see why this region would be favoured initially, but is that what we want? And if we do not want that, should we not have a deliberate policy to set up some manufacturing bases that in the long run will be able to absorb maybe the transfer of technology. No industry, no transfer of technology. Take a country like Peru:, they missed completely the technological breakthrough in continuous processes because all the establishments where continuous processes could be applied have been dismantled. This is a country of 12 or 13 million inhabitants with a long industrial past and it does not produce glass, for instance; you cannot benefit from the progress made in the glass-producing industry because, quite simply, nobody thinks of investing in that country, in that domain.

The role of technology and support systems

FREDERIC RICHARD
Director
Strategic Research and Economy Branch
Programme Coordination and Field Operations Division
UNIDO

Adrian Wood presented in very clear, rational and logical steps the broad framework that needs to be understood and followed to alleviate poverty, and indicated that there are different specific conditions and alternative paths and ways to go about it. What I found missing is the role of technology, particularly if we keep in mind that one of the key elements of globalization is technological progress. A key question, therefore, is how developing countries can move towards alleviating poverty by mastering and accumulating technological capabilities.

In UNIDO's latest Development Report, we have made a very rough analysis of the catching-up process in developing countries. It clearly indicates two things. First of all, it confirms that in world trade—in globalization—technology-intensive activities are the most important. If you are not able to move on technology-intensive activities, you are out of the game. So it is important to determine the paths, which industries you are going to develop. The second finding is that most developing countries—except a few selected countries, particularly in East Asia—are unable to catch up. They are stuck. They do not move. They are not able to improve their technological capabilities.

When we look at the successful examples of those who have been able to catch up, we see a combination of two things. First of all, business linkages. Those who have moved have been able to profit from the global pool of knowledge through foreign investments, through purchase of licences and so on, to be able to acquire, to link, to modernize their technology. But this is not enough on its own. They also need to develop domestic capabilities—local skills, entrepreneurship, research—to be able to use this technology. All these elements do not appear spontaneously in developing countries through market forces. They require support institutions and systems, to help the firm, the industry, to mobilize and absorb and learn these technologies. Look at developed countries: they do that all the time: in my country, France, in the United Kingdom, in the United States—everywhere the importance of local systems to support innovation, to support upgrading, to support learning, is emphasized as the key to development.

More flexibility in policy options

MANSOUR CAMA
President
National Confederation of Employers of Senegal

Mr Wood presents a vision of Africa compared to South Asia, but Africa has more than 44 countries; you have more than 44 Africas. If we just stay with the overview, we do not see any approach that could be really fine-tuned to know what we have to do in order to move our economy. In my country, Senegal, if you look at contributions to the GDP, we see that the primary sector is far behind the secondary and the tertiary sector. Maybe agriculture that was our pillar years ago, but now it has been overtaken by the services. If you go to other countries in Africa, you may find different situations. So I feel that we have to go more deeply into the analysis of individual countries in order to have a dynamic vision.

What I did not perceive in the presentation is where do we put the vision and the choice of strategy? It seemed to bring everything down to a choice

between labour-intensive or skill-intensive activities. We say no to that. We have to be very flexible and take what we have and where we are capable. I do not think that a country like Senegal should be more oriented towards labour-intensive activities than towards services, considering its position in the world, and the kind of education and training our people have been receiving.

We have heard emphasis put on incentives. This has been a major issue for African countries wishing to attract foreign investment. Every country came up with a national investment code with lots of incentives. The results have been very poor because it was not sufficient to offer incentives (and also due to the competition of incentives among African countries). We have been using fiscal incentives, but this does not meet with the approval of the Bretton Woods institutions; indeed, they have been imposing on our countries the avoidance of this kind of incentives.

What I would like to stress, though, is that the most important thing today for our countries is, first of all, a lack of business-oriented minds within our government. If you want to develop your country and move towards globalization, it is very important to have a business-oriented mind. The second most important thing is education and training. The third is the development of infrastructure. Fourth, I do insist, is regional integration because you cannot move ahead with small markets.

Response: The framework does demand specific, detailed application

ADRIAN WOOD

What comes across from all the comments and questions is something I completely accept, which is that my presentation is incomplete, like globalization. What I offered was a very simple global sketch that was seriously incomplete both in terms of description and in terms of policy prescription. In particular, a number of people mentioned the fact that I was not coming down to the level of individual countries, that I was talking about regions—a point absolutely well taken.

In some of my earlier work, both on Asia and on Africa, I have actually done this at the country level as well; I have got pictures for individual countries within these regions that correspond to the regional pictures that I showed. But even then, I would say it is only a starting point: they are alternatives; this is not deterministic. It just provides a broad idea of what might or might not be possible and what constraints and opportunities there are. How things actually work out in practice and in detail depends on a host of country-specific factors and on the policies and decisions that are taken by particular governments and particular businesses.

I would add one point in terms of looking at the prospects of individual African countries which connects both to the point about the importance of regional integration and the point about migration. There are indeed enormous differences among the 50 countries of Africa. Some of them are very sparsely populated and some are very densely populated, including Nigeria. However, it seems to me that the current distribution of population within Africa is probably going to change a lot over time. When we think about the kind of coastal conurbations that I referred to, people are going to move from locations far from the coast to live in these conurbations. And one of the most important attributes of regional integration schemes in Africa, of which I am very much a supporter, is that they must permit a relatively free movement of people within them, if they are really to achieve their full advantages. That is something that is socially and politically difficult and has to be tackled and thought about at a very early stage.

Does my vision for Africa imply that agriculture has to be commercialized or is the route of small-scale agriculture a viable one in this context? I think it is a viable one. If you look back at the history of the United States, for example, it was very different from Latin America: it was based on small family farms and that provided the foundation for growth. Subsequently those farms were aggregated into larger units, but small family farms were what propelled the United States along the initial phase of its trajectory.

I take seriously the point about having to think very hard about the environmental consequences of a natural resource-based trajectory in agriculture, not least because of the point about the fragility of soils that I mentioned. The environmental issues are very tricky and they deserve to be thought about.

A number of people expressed concern that my trajectory for Africa was not only deterministic but sometimes did not offer enough hope in terms of getting away from past, rather unsuccessful patterns of commodity-dominated growth. I would only say that natural resource-based sectors are not all low-tech, old-fashioned, unsuccessful. You can have very high-tech activities and these are very technologically dynamic sectors in terms of science and technology.

But the other point to underline is that I was referring mainly to relative shares and it is also necessary to think in terms of absolute growth: the scope for expansion in Africa of every kind of activity, including manufacturing, some of it probably quite highly-skilled, is enormous and one must recognize this. How does one make it happen? Again, in general terms, I would simply refer back to the early part of my presentation, to those three conditions I described:

- Creating incentives for investment (I did not have in mind mainly fiscal or financial incentives provided by government, but rather removing disincentives in the form of very high risks and costs associated with countries' circumstances.)

- ❑ Building international business linkages.
- ❑ Broad spread of access to assets and markets among people.

Those are the fundamental policies I see that need to be pursued to drive countries along both these trajectories with some sector-specific support of the kind that I referred to at the end. But as I said, there is a wide range of options in terms of detailed policies in both these trajectories and it is the job of all of us, and not least the job of UNIDO, to contribute to working out what exactly these are and how they need to be tailored to the circumstances of particular countries at particular points in time.

Chapter 4

Discerning the New Paradigm: The Five Fronts of an Incremental and Flexible Model

ENRIQUE IGLESIAS
President
Inter-American Development Bank

The new paradigm must be incremental and flexible. It should include a quest for sustainable growth without volatility; a rebalancing of the relationship between the market and the State; the definition of a new social contract; an emphasis of regional integration of the "open" variety; and a focus on the microeconomy.

Flexibility is extremely important, particularly for countries like ours where the interconnection with the global economy is extremely strong. We do not manage the international trends; we buy them up, we are importers of those trends.

I am talking as a Latin American with several decades of working in the practice of development, a long experience with many opportunities, from different angles, to see how things work in the region. You see, Latin America is a developing region where the search for the paradigm has been present in the last 50 years. This is something which you find from the earliest writings of Raúl Prebisch in 1949, the beginning of his influence not only in the thinking of Latin American economists but also worldwide as a result of his work in the United Nations, particularly in the 1950s and the 1960s. So Latin America has a history of a long and sometimes frustrating search for the paradigm of economic development.

A second feature of the region is the big pendulum, the swing from one model to another, between reliance on market forces and State intervention—with very good examples on both sides. The pendulum has been a feature of the whole period, and we are now swinging again. A third element, present in much in our history is that almost natural trend to place too much blame on external forces for our pains and our problems.

The 1950s and 1960s: when ideas dominated

When you look back with some historical perspective, you can see that there has always been interaction between new ideas and practice. In some periods, ideas were leading the movement of society. In others, it was the practice, the facts, the realities which were leading. For instance, in the 1950s and 1960s—and I belong to the 1950s—there was great mistrust of the market forces, great suspicion about international relations; the path of inward-looking development was very attractive to all of us, and the ideas of import-substitution, and of a guiding State were at the centre of our minds. I remember when I was studying our basic concerns were, for instance, how to build a development bank, to intervene with the force of the State, and to promote industrialization.

When you talk today to some people, they still remember those years as the brilliant era of economic thinking in Latin America. There was a paradigm to refer to. People had clear ideas, and in some cases, these ideas are still around, particularly in some of the big countries. Take Brazil, perhaps the country which took the most effective way path as regards the implications of the model based on inward-looking development, under the guidance of the State. And the growth achieved was not bad: at 5% on average it was actually much higher than the rate of the last decade.

Then in the 1960s the model improved: it took a step forward and went into internationalization of the economies throughout the region: the pioneer efforts of regional integration, which preceded the European Union. We started in 1962. So we were always seeking to improve the paradigm.

In those days, of course, the attraction of planning was in the air. For us, the experiences of the socialist countries were somewhat mysterious, but attractive. So always the paradigm was being bred on outside influences. And the 1950s and 1960s were probably the period of the richest paradigm on development. We thought that we had clear ideas of how to do things.

The 1970s: practice takes over

Well, the situation turned out not to be so simple and we learned that underdevelopment was much complex than we had envisaged through that type of paradigm. And in the 1970s the model collapsed, basically because we had three unsolved tendencies:

- The tendency to instability, resulting from macroeconomic mismanagement.
- The tendency to inefficiency, because we had shut off the economy from international forces.
- And, of course, also the tendency to inequality, basically due to the way we dealt with our social problems.

So the old system collapsed and for a time ideas lagged behind the practice and the practice moved the whole thing—including an element which was for us the discovery of the first global issue of modern times, the price of oil. Until we came to a new paradigm arising from the return to orthodoxy, to neo-liberal policies. It was Chile who began to do it and later on, almost all the countries in the world were to follow under the umbrella of the so-called Washington Consensus.

The 1990s: ideas stage a comeback

The return to orthodoxy, as you know, dominated the whole of the 1990s. We thought that the whole question was about a return to macroeconomic stability, the opening of the markets and, very strongly, the reduction of the role of the State.

Under those three pillars, we had mixed results. The glass was half full and half empty. This sort of approach worked in some countries. Chile is a very good case. I think Mexico is also, in its own way, a model of success. Probably also El Salvador, maybe Uruguay before the last crisis of contagion with Argentina. There were clear achievements in Latin America, in terms of management of the economy and in terms of professionalism. It is very important not to let this go unrecognized.

Nevertheless, when you look to the 1990s, when once again the ideas led the practice, we had a growth rate that was not brilliant, at least as an average. There are some countries where it was, like the Dominican Republic, but in general growth was not really brilliant: only 3.2% after a long "lost decade", as we used to call the 1980s. Growth was also extremely volatile, which is a new phenomenon: up 5%, down 3%, no growth. This volatility in growth was a very disappointing experience; it is one of the items I will return to further on.

We had also experienced disappointment in the social sphere. We had expected a much quicker response to the social problems, and this was not the case. There was some slight reduction in poverty as an average, but Latin America remained more unequal than ever. We are the most unequal region in the world. We have this rare privilege. This is really very difficult to explain. We had made clear gains in the political sphere: we had returned to democracy, which is not a small achievement. Although democracy continues to be supported by the people, its social legitimacy suffers if you do not have enough capacity to solve the social problems—and it is quite clear that there is an erosion in the way that democracy is being felt by the people. People are asking, what have you done on those issues? Why are things moving in the opposite direction? We are again in this sort of permanent movement between practice and ideas, and now the big question, which is very much in the mind of everybody, is where is the new paradigm? What can you advise us? How can we move in our policies and what are the new grounds on which we have to base our policies?

Seeking the new paradigm

For me, the first step is to be very humble. After 40 years of looking for the paradigm, I have started to become a bit humbler, in terms of not looking for the big paradigm—because I think it is complicated; it is very different to have a paradigm of a globalized economy than to have a paradigm in a much closer perspective as it was in the 1950s and the 1960s.

I think the new paradigm should be, first of all, *incremental*; and second, *flexible*. There are certain things which we have to accept as being on the table no matter what the political system. And flexibility is extremely important, particularly for countries like ours where the interconnection with the global economy is extremely strong. We do not manage the international trends; we buy them up, we are importers of those trends. They place new challenges before us every day, so if there is a prize, it will go to those countries that are flexible enough to internalize the trends of the world economy and to navigate on those trends successfully.

So I say: an incremental paradigm and flexibility in the way we deal with challenges. Everybody agrees now that macroeconomic stability is something that has to be respected. I think that governance is also an issue which is very much in the centre of everybody's mind. The opening of the economy—there you can still ask, what *kind* of opening of economy? But there are trends which we all understand, and we know we need to have this opening-up to the world economy. Now which are the fronts on which I think this incremental movement should take place? I will mention five, which are those that are very much in my mind, and also in the minds of the people with whom I am working.

The five fronts of an incremental paradigm

Sustainable growth without volatility

The first front is the quest for sustainable growth without volatility. This demand emerges from the experience of the last 10 or 12 years. Argentina was a very good example: it had high growth in the first half of the 1990s, but at the expense of becoming very vulnerable to volatility and to impacts from outside, as happened in the second half. So the question is not only to have sustained growth, but how to safeguard this sustained growth from volatility.

My generation was used to only one volatility, that of commodity prices. This was the volatility of the 1950s and the 1960s. The challenge of the 1960s was trying to bring some type of stability into the prices of commodities. But in the 1990s we discovered another volatility which we had not known before, a financial volatility which comes from exposure to financial flows that are no longer in the hands of a few banks, but of millions of people. This new volatility gives us the feeling that we are entering into the club of world finance without the necessary safety nets, both internal and external.

Of course, we have discovered this now because we are all generals after the battle. But I think that there are certain valid questions that we are asking ourselves as a result of this volatility. Was it right to open up the capital accounts so quickly? Was it right to have a highly dollarized economy, to have a dual economy in terms of currency? Was it right to open up the financial markets so much? Maybe. Of course, there is the lack of international safety nets. We were all thinking at the beginning of the 1990s, that we would create a new financial architecture. This has not been the case. We do not have a financial architecture. We do not know how to manage or to moderate this sort of volatility. We do not have, for instance, a lender of last resort for the emerging markets. It would be one idea. So in a way, this first point of sustained growth avoiding volatility in a globalized economy is a major issue on which we will have to work and to help to find the answers, based on the bad and good experiences of the last 10 or 15 years.

Rebalancing the market-state relationship

The second big issue is that of rebalancing the relationship between the market and the State. On this, the pendulum swing in Latin America was really enormous. There was a first period of statism, of State interventionism, and now we have swung with the orthodox to the other extreme. I think there are lessons to be learnt on this matter from the success of Asian countries. I think we need a State and we need intelligent interventions. The framework of the market must be in some ways more directed by some intervention by the State. This question of a State which practices intelligent intervention is extremely important to define. It is not only a technical problem. It is basically a political problem, because it implies acceptance by society and overcoming certain prejudices which are very strong on both sides. So finding how to stabilize the pendulum in this area is a major task we have to confront.

Defining a new social contract

The third front is the question of social support. I recently heard Nancy Birdsall, the very distinguished economist who used to be vice-president of our institution, asking herself what should be the new social contract in a globalized economy? Look at the situation now in Latin America. We are under construction. We have no growth or negative growth, fiscal difficulties, tremendous social deficits and an additional problem: the new poor. When Argentina moved from 22% below the poverty line a year ago to 53%, these new poor came from the middle classes. And dealing with these poor is very different to dealing with the previous ones. This has created tremendous frustration. We do not know how to do it because we do not have the resources internally, nor the social contact which can make change palatable. So the question of the social contract in a globalized world, as Nancy put it, is a major challenge with no easy solutions. It is one of the most pressing issues because it is a major source of unrest in our societies.

Emphasis on regional integration

The fourth issue is regional integration. I am a child of the integration movement. I used to believe in it in the late 1950s. I still believe now, at the beginning of this new century. If integration was a vision of the founding fathers of our modern economy, today it is more valid than ever. Nowadays we have to find some kind of safety net—and integration, apart from being a force of growth, should also be a safety net. Latin America has the richest experience in the developing world on integration and it still demands to be emphasized, not to create a "Fortress Latin America", but aiming at what we call *open regionalism*; a foundation on which we can continue working with the United States and Canada, or with the European Union, to open our markets.

Focusing on the microeconomy

The fifth front is a much-needed focus on microeconomic problems. Over the last 10 or 15 years, we have placed much emphasis on the macroeconomic problems, and rightly so. But we may have lost sight of the need for incentives—when we talk about incentives, we have to go to the very foundations of society, to the bottom, to the *micro* side, in search of the actors. This has not really been worked out properly. Take Latin America, with its population of 500 million: we have 65 million micro-entrepreneurs who employ 110 million people—and they are getting only 2.2% of the credit within our countries. These three figures are quite enough to tell you that there is something there which we should transform from a latent Sleeping Beauty force into a major engine of wealth, together with those other engines of macroeconomic stability, etc.

Key constraint: the world economy

These five fronts, form part of what I call an incremental type of paradigm in which we are going to work. Of course, these are the Latin American realities, but I tend to believe that the approach is probably applicable in other parts of the world.

I have not said anything about the international front, which was where I started out on these considerations. There are many clouds on the horizon of the world economy and all of us, particularly so in the developing countries, are most dependent on where this economy is going. It cannot be ignored when we are trying to work out paradigms of development for the years to come, because this is a constraint which we do not control but which could be a major determinant of on our choices.

A vital cement: the quality of politics

Last but not least, when you consider what holds all these things together, you come to the political ingredient. This is nothing new but my impression is that the new types of challenges we are facing will demand a very strong increase in the quality of political leadership, of the ability to build consensus. In this area, Chile is a brilliant example: not only what they have done in the economic field but also how they were able to distil a few basic points on which to build a society-wide consensus. They had many confrontations because that is the essence of democracy, but there was a strong underlying consensus. When I speak about the quality of politics in this incremental paradigm, I think it is by far the most important force with which we have to deal. Sometimes, the economists or the practitioners of economics tend to put the blame on the political bodies for what turns out wrong. I think we must be careful on that, because it is not quite true. I have learned through the years that this is a little bit of escapism which is not fair and not ethically acceptable. When you make political decisions or give political advice, you must also take into account the political limitations. It is in working together so that you can raise the quality of politics beyond leadership, inspiration, communication, charisma. Economic advice should also be architectured in such a way that really we do not try to put the blame for everything on the politics and the politicians but also assume responsibility for making viable, intelligent choices with, of course, a chance of success.

Chapter 5

Why do we have to invest in globalization?

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Globalization is very old as a phenomenon but it is also an ongoing process and a non-linear one. Globalization is really about pushing back the frontiers and making discoveries. Nowadays, globalization is associated with something happening at the same time but traveling much faster, which is a huge technological revolution.

This is happening mostly in communications in the so-called knowledge economy. And so, globalization catches our attention and imagination in ways that did not happen before with other discoveries.

Why do we have to invest in globalization? By choosing that title, I am implicitly giving in the background a very affirmative vision about globalization, as we have known it in the last, say, 10-15 years—but at the same, by speaking of the need to invest in globalization, I am also indirectly pointing to the fact that, in my own personal view (and this I share with many intellectuals around the Washington area today), globalization has its gaps, its holes and many imperfections, and we have to put them squarely on the table and not sweep them below the rug.

First, how do we define globalization? And here, with all due respect to many academics which I respect, I have searched in these three years I have been in Washington for a good conceptual definition of globalization, and I must say that I have not found it. I have found a wide range of differences in the kind of issue and focus that different authors are using when they speak about globalization. I know that in California there is a whole effort of looking at globalization in a futuristic way and attempting a conceptual approach. And perhaps that is one of the reasons, if I may say so, why there is so much polemic and confusion about globalization and its application in the actual daily real world as we live it now in 2002.

Pushing back the frontiers

I will just offer some approximations to the concept. One of my hobbies is economic history. If I apply that to this exercise of attempting an approximation to globalization, I must start by noting that, globalization is very old as a phenomenon. I am most discomfited by people who present globalization in panels or seminars—for example, at the World Economic Forum (WEF) in Davos—as if they had discovered gunpowder or a new concept, and speak of it as a huge renovation or revolution similar to the Renaissance. I think not. Globalization is really pushing the frontiers and making discoveries. I can think of Neanderthal man living in a dark cave and feeling hunger and going out in that pre-historic age, to try and hunt with his big stick and almost no clothes. And simply by discovering that there are other caves with similar people roaming around, well, that was globalization for him. He experienced a whole shift of a frontier he had not encountered and he was shocked and surprised. Something similar happens today when people discuss and are shocked by globalization and discover this frontier pushing, if I may call it that.

And then we can think of Marco Polo, who was a great traveller of his times. When he went to China or Central Asia and discovered the wonders of exchange and brought back exotic products, that had a lot to do with trade and globalization—again, he was pushing the frontier and finding new things in something which was unimaginable for part of the so-called Western world or seeds of the Western world at the time.

Pure scientists, especially those from the natural sciences, have great difficulty understanding the debate on globalization in the social sciences, because people are not attempting a more rigorous approach, at least in hypothesis building and methodology. But when we look at the overtones of the debate and allow ourselves a certain degree of laxity and non-rigor, then you can associate it with what happened in the early 1990s, the fall of the Berlin Wall—signaling the convergence of political systems and broad economic systems, certain convergence towards various forms of democratic government and participation in the broad sense of the word, and, as some people have called it, the rebirth or dominance of capitalism, modern capitalism, as a sort of also convergent answer in the economic structure and some policy-making.

The technological revolution

So that is one component of globalization. The other I associate with something happening at the same time but travelling much faster, which is a huge technological revolution. If I were to write a book on globalization, I would give much more importance to the second factor, this huge technological revolution of which we are just starting to see the first chapters. This is

happening in transportation, but mostly in communications in the so-called knowledge economy—everything having to do with this area of webpages and e-mail and e-commerce and e-trade and e-you-name-it, which arises from huge advances in computers and software and chips. This is something on which policy makers have made an impact, through the liberalization and deregulation of those areas which allow these discoveries and innovations to take place.

Let me give you the example of Chile, in the second part of the 1980s when, earlier than any other country in Latin America, engineers running the telecommunications sector, in close dialogue with very liberal economic policy makers at the time, designed a good deregulation law which also provided strong regulation for the longer term. This was tied with innovation, technology and foreign direct investment penetration which provided an impulse for other areas such as services and modern banking. So in that part of the picture of globalization, you do see the human hand, particularly at the policy-making level. So globalization is, in fact, a combination of the three things mentioned, and though I could not assign shares to each, I put a lot of store in the aspect of technological revolution.

The nice thing about globalization is that it is an ongoing process and a non-linear one, and so catches our attention and imagination in ways that did not happen before with other discoveries. Globalization can be seen as a huge new chapter in inter-connectedness. A world which is smaller, which is faster and which can makes us all communicate in better and more intensive ways. In my conception, globalization means a huge set of new opportunities, of new advantages. And in that sense, I am far away from the globophobics we saw in Seattle or in Prague and in lesser numbers in the last year-and-a-half in Washington at the other meetings of the Bretton Woods institutions. I think the globophobics have very good points on some of the costs and disadvantages of globalization, but these come together with very many demands and concerns and issues that have origins in very different factors or in very different areas, not necessarily integrated or connected between themselves.

Globalization has its cycles

If we apply the test of counter-factor and, say, go back to the early 1970s or mid-1970s, we'd continue with the economic pattern then prevailing, a mixture of semi-democracy and authoritarianism in many (though not all) countries, big State intervention, a huge sector of public enterprises, excessive regulation and lack of innovation. If that were the counter-factor (and I am not saying that it necessarily should be), then at least in some counts, with all the problems that globalization brings today, I would favour the new trend over the old. This is something that is sometimes forgotten in the debate. It is true that the poverty numbers are unspeakable in terms of their size and depth, and

that the stagnation of many countries and regions of the world—just look at Latin America or Africa—is of grave concern. But because of not looking at the broader historical picture, we forget that they were as bad or worse in the old systems of the 1960s and the 1970s. This is no consolation but can help put some order in the debate.

Globalization, much as other discoveries like, say, the printing press or the steamship, has its cycles. It will probably provide, like now, a first wave of geometrical expansion of opportunities and frontiers, and then move on into a kind of staid regime and flatten out—and, who knows, perhaps in less than a century it will be forgotten and we will be engaged in another kind of historical and political and scientific discussion. But we are still in this first set of waves, starting at least noticeably in the first part of the 1990s, that have affected in very profound ways, crucial parts of the economic systems everywhere in the world, directly or indirectly. Look at the banking system today, as compared to 10 or 20 years ago. Look at the insurance systems today. Look at retirement systems today. Look at trade today. Look at transportation, communications. Look at the whole new approach of managing inventories from the smallest firm to the large corporation: the pattern of managing and optimizing the inventory cycle has changed dramatically and that has a lot to do, by the way, with the discussion of recovery or non-recovery, recession or small growth that we have even in the G7 countries today. And, more generally, they have changed dramatically the definition and scope of services.

So globalization has put the focus now, not so much on the quantity of output as measured in a manufacturing firm or sector, but more on changes of an organizational nature and more particularly on best practices—what are the best practices in all of these matters and in different vectors reaching out and mapping a very different networking scenario. I think that is the crux of the matter. And it is very fascinating because it can expand the creativity of human beings all over the globe without being constrained to a particular infrastructure or geo-political setting.

At the same time, we must have global warnings about globalization. Though in principle it looks very positive, it is, at the same time, very incomplete. And that is my first core message: it is very incomplete. Judging globalization is difficult because *(a)* it is new, *(b)* it is conceptually difficult to grasp, *(c)* we have not defined it scientifically enough to be able to discuss it with rigor, and *(d)* it has a many intrinsic problems. It is also a very incomplete phenomenon which carries with it many risks. I will name some of them.

An irresistible wave

On the one hand, this a wave that cannot be resisted, and I think there is a lot of mental convergence on this. First, among citizens. Second, among social scientists. Third, in scientific minds. Fourth, and dominantly, among

entrepreneurs. And fifth, among artists and people of the creative world, both formal and informal. I come from a family of artists. My daughters are sculptors, painters. My wife is an expert in museums. When I come home they hate to discuss about economics; they reject it. But I see them using, fascinated, the possibilities that networking and e-work and new technologies create for their own innovation and creativity.

It is a wave that cannot be resisted. I have been three times to China, and when you go in an official capacity, they treat you well, and more than that, you can get some more minutes of conversation with the actual policy makers in this very complex Chinese system which is, as you know, a society opening up but at the same time resisting opening up, in a delicate balance. When you look at the subtext of these conversations, you see that the chief interest of their agenda is always, how can we bring globalization here, to this country, faster and better? So you get the sense that they want to be a different peer for globalization, and not to go backwards. There are many more globalizers in the world than anti-globalizers think.

In India, you have the same phenomenon. They are at the frontier in many aspects of the computer industry—and the Government is heavily subsidizing that—and tertiary education is very important. India, such a large independent subcontinent, always very autonomous, is embracing globalization at a fast pace. And my own country, and Mexico and wherever you look: Thailand, Korea, and so forth and so on.

A need for safeguards

We see that now there is a dominant wave in which globalization is understood as a phenomenon that really should not and cannot be resisted—but where you have to put some safeguards in the process, because you could be easily swallowed by it if left to proceed erratically. And in some scenarios, disorganized globalization can produce a lot of suffering from of.

Let me give you one example from public policy-making, from my own profession and daily work in Chile in 1994-1997, before the Asian crisis of 1998-1999. I was finance minister then. The first four years of democratic recovery had been very good. Chile was a bit à la mode in the 1990s. And I am not detracting from the achievements of the democratic governments that we had in the 1990s—I was part of both—but being à la mode meant that everybody wanted to invest in Chile. And, yes, it was investment in the real sectors of the economy; direct foreign investment, long-term, and we applauded that—but it was also portfolio-type investment: money coming in and out in three days, four days, five days.

I remember as if it were yesterday the visit of two former Harvard colleagues of mine. We had studied basic economics together, and they had gone into business and were running the most successful pensions funds in Califor-

nia. They came and visited me at the Treasury, in my capacity as minister, and they said, "Eduardo, you are missing a great opportunity. If you would withdraw this and that aspects of your capital controls law, we will come here immediately with $5-7 billion each and you will become a $90 billion per year economy. This will boost growth, not to the 6% that you have, but to 10% or more." Still, I resisted that. We established market-friendly capital controls, very mild. They did not say, don't come, or stay out. They said, if you come with short-term portfolio investment, you have to pay these fees to the central bank, which act as a mild marginal tax. It is like belonging to a club. Chile is small, and it is fashionable, so come and pay a fee which also is a safeguard that strengthens the net wealth of the central bank for later, when you leave the country. So you had that rationale. I am not trying to export this system because it is very ad hoc and it worked well for Chile, but might not work well for a lot of countries—and now even we do not have it.

But it was one of the safeguards that kept us from being tempted by something which, I tell you, was appealing from a finance ministry point of view: to ride on a huge boom, favouring private consumption, with monetary policies that would have become lax over time—because why should we care, we are financed by the rest of the world and the rest of the world likes growth, and after all, governments want to be re-elected or win their parliamentary or municipal elections. But we said, no: 5.5% or 6% is more than enough. We want to sustain it in the long run as it has been sustained to the present and these other things can produce a big overshooting of our currency, kill a lot of real manufacturing exports and leaves us relying on short-lived portfolio investment. So for a while, I was the bad beast of world trade. Many columns were written against me and the government saying, this is the guy who comes from Harvard, where they are all socialists: had he been from Chicago, he would have understood and we would be growing at 10%. And I think, looking back, it was good to be considered the black beast of world trade in those years because our way made for more sustainable permanent growth, rather than the short-term miracles as we have seen in other countries.

The second example is trade. We have discussed a lot about trade and its importance for efficient resource allocation and as the agent of growth—and more than that, of high-quality employment. Looking at my African colleagues, and having seen how many of their countries work, I am reminded how important is quality of productivity, quality of employment in order to get out of a low-growth trap. Well, it was funny to see a whole debate about North American Free Trade Agreement (NAFTA) in the United States, in which the so-called siphoning of jobs was discussed from an American perspective when Congress considering whether to do or not to approve the trade agreement with Mexico. Nothing of that siphoning effect seems to have been proven. On the contrary, the effect, as measured by good trade specialists, is that trade, through the NAFTA Agreement between Canada, Mexico and the United States, has been welfare-enhancing for all three of those countries and

not for one or two. And indirectly, it has also meant something very important for a smaller country like Mexico, making such an effort to modernize with those huge poverty lagoons in the rural areas and in Mexico City. It has put Mexico back on the map, and given it an opportunity to do something which for decades no Mexican government had managed to achieve: simple convergence with the United States.

Two bottlenecks

I believe that the two main bottlenecks or imperfections of present globalization trends lie in two main areas. One is exclusion. It is easy to speak as I am about globalization with these examples, but when you have almost close to three billion people living on less than two dollars a day, then much of this globalization language or concept simply brings no hope to them. It is not apparent, does not directly impinge on their lives. Therefore, the whole issue of how you re-connect, integrate, avoid exclusion and produce inclusion into this world is the greatest battle ahead for globalization—which would be a fragile phenomenon indeed if this battle is not won in a reasonably short term.

The second bottleneck is instability in financial flows. This is an issue which is being discussed by bankers and analysts in Europe, Japan, the United States. It is a problem that affects even the state Japanese banks today, and is evident in the difficulties that China and India have in integrating fully into these financial flows. Of course, in my institution, the International Monetary Fund (IMF), we have a lot of research and ongoing discussion, much more than is visible outside the institution, about how to deal with this instability, volatility, particularly of short-term capital flows, which are in a way, very well fed or very well serviced by globalized networking.

Washington Consensus: a misguided debate

There is one area in which I think the globalization debate, in spite of its imperfections and flaws, has been misguided, and this concerns the equation that some do of globalization with the Washington Consensus. I am not sure how the Washington Consensus came to birth; I know some of the authors of the debate at the time, like John Williamson—a very nice and civilized man—and many other people writing at the time about this convergence of views. What is certain is that it had a terrible political name. If it had been called the India Consensus or the Monterrey Consensus, it would have had a much better life. But simply calling it the Washington Consensus was asking for trouble, which we have had.

The debate centred on a particular set of economic reforms, not much applied in Asia, but mostly in Latin America: a very Latin American debate

concerning liberalization, market openness, particularly trade liberalization, financial modernization, and so forth, with emphasis on policies aiming at macroeconomic stability and fiscal responsibility. Taken one by one, these were very reasonable elements and one would not have needed to call them the Washington Consensus; one could have simply said, well, if I take different chapters of different economics textbooks, they make a lot of sense. But they were packaging that sense in response to a particular epoch of debate.

In a paper which I presented as a lecturer in Trinidad and Tobago a year-and-a-half ago, I produced a checklist, only for Latin America and Caribbean countries, of what those economic reforms, as stated in the 12 recipes of the Washington Consensus, had produced in the 1990s, as compared to the 1980s, when this was either just starting or non-existent in most of the countries. My focus was not only on absolute GDP growth but more on that very important problem of Latin America and the Caribbean, the old *instability factor*. I always come back to this instability or volatility factor because I associate it with the fears and insecurities that are driven by some aspects of globalization. I measured 35 countries, comparing the mean average rate of real GDP growth in 1990s with that of the 1980s, for each country on its own terms and crossing it out with increases in the average real GDP growth rate, the welfare per capita as measured only by GDP per capita, an imperfect measure. And I came up with 15 or 16 countries which were all on the positive axis. But I also got five or six countries which were looking very bad. When I looked up this sample taken in 1999 and I compared it with the situation in 2002, I found that some of my countries in the positive quadrant have gone over to the negative side. This tells me that the debate and the research is not complete and we need to understand more of the issues involved.

For example, many countries had dollarized economies with fully open banking systems, but did not realize that dollarization implied very particular and harsh rules of the game in running their fiscal and trade polices. Look at the case of Uruguay today: a fully dollarized economy being hit by events in Argentina, and most recently by Brazil. We can think of other countries, I think, as part of the problem: Argentina choosing its "convertiblity" regime but not realizing that if you choose that, you have to be even more impeccable than a virgin on the fiscal accounts, particularly in the provincial governments.

Questions of symmetry

Many countries try to hook up to globalization and to connectedness but hit the access wall on trade. My position is that the European and United States systems of agricultural subsidies and agricultural protection are a total waste. They are is totally against globalization. They do not produce even a minimum of true welfare in the economic sense. So people will argue, quite rightly, that this has to be scrapped. Let me give you just one example which we have

discussed on our Board at the IMF. We have a stability pact for Europe, a very important thing for European convergence. The stability pact has run into trouble, and now it has had to be postponed for two years, from 2004 to 2006. Interesting, yes? But what is the judgement on developing countries that sometimes have to postpone fiscal adjustment. Do we treat them the same? That is a question for thought. We accept 2006 because, after all, we have to be pragmatic and economic recovery in Europe is also important for the developing world. But look at the position of the citizens of Europe. They have to accept that a subsidy has to be paid to such and such farmers, and not for good reasons. Then they have governments in fiscal deficit (increased in Italy, Portugal and Germany), so the Central Bank has to put interest rates much higher. Therefore, if I am a small industrial manufacturer in Italy or Germany, I have to pay high interest rates in order to pay these subsidies for the farmers somewhere else in Europe.

This cannot subsist. It is against globalization. It is a misallocation of resources and, more importantly, it clearly affects the employment opportunities and the inclusion of opportunities of that more than half of the world living on less than two dollars a day. So the United States and Europe and Japan are giving a lot of Overseas Development Assistance (ODA). We welcome that. They have tried to increase ODA from very low numbers—but they are taking away with the other hand, for protection and distorted policies against globalization, what they give in ODA.

The good news is that at the IMF, in spite of looking like the bad boys, Köhler, Krueger, myself, are denouncing this wherever we go. I invite you to read chapter 2 of the latest *World Economic Outlook (WEO)*, which is entirely devoted to the scandal that agricultural distortions represent all over the world. And we also have a chapter, by the way, about distortions amongst developing countries which have to be named.

The institutional component

I think the big challenge that we have ahead is that globalization will be incomplete if we do not work more forcefully on its institutional components of globalization. This is a crucial feature because without institutions you cannot have these forces working in an orderly, organized, scientifically coherent way and for the benefit for most, not just for the benefit of the few. And in this sense, the earlier globalization debates, the ones that started especially in Seattle and Prague, have produced an unholy alliance which I think is very self-defeating for the welfare enhancement purposes of globalization, if you share this vision. It is the following. Many voices, even in the industrial world and certainly in our countries, in my country as well as elsewhere in the developing world, have been calling for a reduced role of the Bretton Woods institutions. They have said, "Oh, the World Bank, they do not understand

projects or programmes. They have mislaid the jobs in Africa or Asia. The IMF only believes in fiscal adjustment and in monetarist policies. They are old-fashioned; they come from a 'neo-colonial arrangement of the 1940s', while the world has changed." So from the intellectual extreme right to the extreme left, the call is to "abolish the IMF, close the World Bank." Well, if we go back to the scenario where I started, where I see globalization as giving lots of opportunities but still requiring changes to harness creativity, innovation and forces which are hard to grasp to understand, digest, adopt and process in at least a large part of the developing world, then—contrary to what the unholy alliance of the extreme left and the extreme right is proposing—I am convinced that we need stronger Bretton Woods institutions, not weaker ones. I also believe that we will need a stronger United Nations Organization, not a weaker one, because countries have known and citizens have experienced the disorganized effects in markets and in the political sphere of no institutions, no framework, no rule of law. And an international setting of rule of law, ordering and forums such are these, is critical in order to ensure that globalization in the net-net end will work for the benefit of all and will not be chaotic or misguided into strange adventures.

Comments and Avenues of Enquiry

Capital restrictions versus other factors in Chile

HERNÁN MARTÍN REDRADO
Vice-Minister for Foreign Affairs
Argentina

I would like to focus on the issue of financial volatility and the capital restrictions, particularly the balance between these and other structural features that, in my view, weighed more in explaining why Chile has been more resilient towards financial volatility. One is a permanent fiscal surplus that Chile has had, now almost consolidated at 1% of GPD, which as a permanent policy brings a lot of credibility to the country.

Second, the savings rate, and therefore Chile's lack of dependence on foreign capital, helped by the pension fund reform carried out in the 1980s, which was very significant in moving from a pay-as-you-go to a capitalization system. This is a reform that at some point the developed world also will need to undertake.

The third is the trade pattern that Chile has followed. Basically, the diversification or what I will call a multi-polar strategy in terms of trade negotiations—something that in my view could be replicated in other emerging markets. As a matter of fact now, as a policy maker in the area of trade, I am following that pattern of simultaneous trade negotiations with different countries, of diversification by sectors and diversification by countries with which we could reach trade agreements—not only pushing for the North-South trade agreements which are somewhat more complex. We found the issue of agriculture as the main divisive element in trade agreements between North and South but much easier in terms of South-South, as in our case with South Africa, and in Chile's push in South-East Asia.

What kind of capital control system?

KOICHI DANNO
Senior Counsellor
Mitsubishi Research Institute, Inc.

Already in 1986 Dr. Peter Drucker, writing in the journal *Foreign Affairs*, said that we were in the no-risk phase, where the single economy overwhelms the

real economy. The volume of foreign exchange transactions is actually 33 times as large as that of the real-trade export and imports.

In the year 2001, in addition, because of worldwide deregulation, money is moving around quickly and freely throughout the world's financial markets, pursuing differences in exchange or interest rates, differences in time or district and sometimes hedging various risks. The ratio of the single economy to the real economy has been increasing year by year. So what kind of viable control system of short-term speculative funds does Mr Aninat have in mind?

Response: debate on capital controls remains open

EDUARDO ANINAT

I do not know what weight I would assign to Chile-type, friendly, partial capital controls, in the issue of the liberalization of the 1990s. It is difficult; the literature is unresolved. I look at the academic literature and I find one huge pile favouring capital controls à la Chile, and another of the same arguing that they were a coincidence, an irrelevance—and with good intellectual ownership on both sides. This is because many changes took place at the same time.

But if I compose it as a kind of graphical experience, I think it could be compared with the question of being overweight. Chile, because it had this fiscal discipline and a strong central bank and a relatively good trajectory for domestic savings, was like a lean human being under a kind of sports discipline. If that person were to risk eating, say, a big cake every night, maybe the cake *per se* is not doing harm—and here I assimilate the cake to the hot money, overnight capital inflows—but eventually it could have produced a hump or a slump and slowness and then later poor digestion and relapse problems. While the cake was not decisive, I think that abstaining from the cake at those very hectic times helped us somewhat in terms of stability. But the discussion is still not resolved, as I say, from an economic point of view.

I think the whole discussion about globalization is incomplete and not wholly resolved. There is still a deficit, which has a lot to do with the issue of inclusion and exclusion. One particular factor which would be interesting as a main topic for future enquiry is that of labour mobility and migration policies. In globalization today we accept financial mobility and technology mobility but we do not accept labour mobility, with very few exceptions.

Chapter 6

Incentives for Productivity Growth in Developing Countries

WILLIAM EASTERLY
Professor of Economics
New York University

On their quest for economic growth in the developing countries the international financial institutions have followed three myths that have led them astray. The first was the myth of benevolent money. The second was the myth of the benevolent bureaucracy. And the third was the myth of the benevolent intervention. All three of these turned out to be myths because it turned out that people did not respond to money or bureaucracies or interventions but, instead, to incentives. And where the incentives are absent, then none of these interventions work productively to achieve economic growth and development. Where incentives are present, then none of these methods are even necessary because the incentives will themselves attract the money and the necessary bureaucracy and the necessary interventions. So everything comes down to this, that people respond to incentives. When we get the incentives right, then we will know economic growth.

Benevolent money

First, the myth of the benevolent money. Here we thought, in very simple terms, that the money that was provided by the international financial institutions—like the World Bank (WB), the Inter-American Development Bank (IADB), the Asian Development Bank (IADB) and the African Development Bank (ADB)—had a very powerful effect on economic growth through a very simple mechanism that financed investment and productive capacity; that financed machines that expanded the production capacity of the economy and allowed economic growth to take place. Of course, the problem is that there will only be investment if there is an incentive to invest. Simply having a

monetary inflow into the economy does not automatically create investment. People will choose to invest only if they feel motivated to invest, only if there is a good business climate, if there is a good prospect of a good rate of return to capital. If those incentives are absent, then money inflows will not finance investment, they will wind up financing consumption. The benevolent money will not necessarily go into investment and even when it does go into investment, investment by itself does not necessarily create economic growth.

Again, incentives come into play. Even if the machines are there, the businessmen and businesswomen have to feel the incentive to purchase the raw materials and the labour and to adapt the modern technology that goes with the skills, and the workers have to have the incentive to acquire the skills to use the machines. All of these things have to come together by the interplay of many inter-related agents that all have to feel the incentive to invest in advanced technology, skill and efficiency in order for investment to have a payoff in economic growth.

Figure VI.1 illustrates the relationships we get between investment and growth. It shows the investment to GDP ratio on the four horizontal axes and GDP growth on the vertical axis. As can be seen, there is not a strong relationship here in the data between investment to GDP and GDP growth. Investment does not necessarily translate into growth where incentives are absent. Let me give you a specific example, the country of Zambia. Figure VI.2 shows what per

Figure VI.1 GDP Growth and Lagged Investment/GDP (4-year averages)

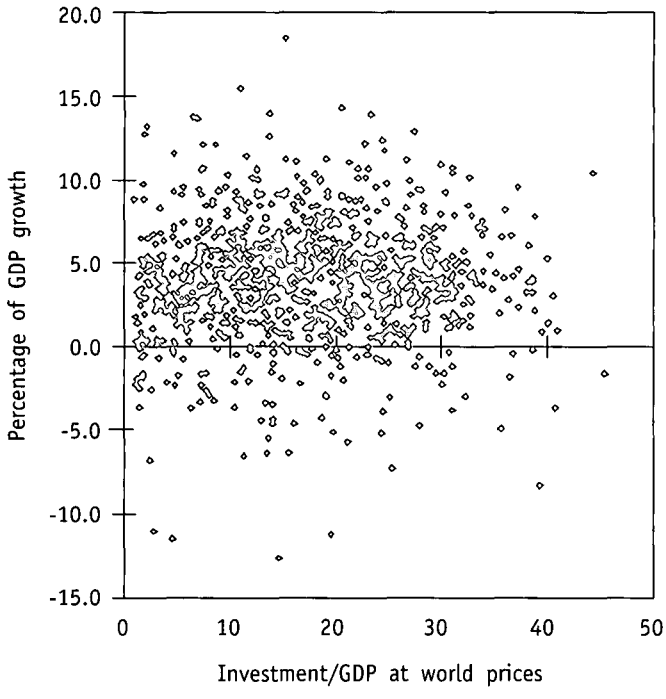
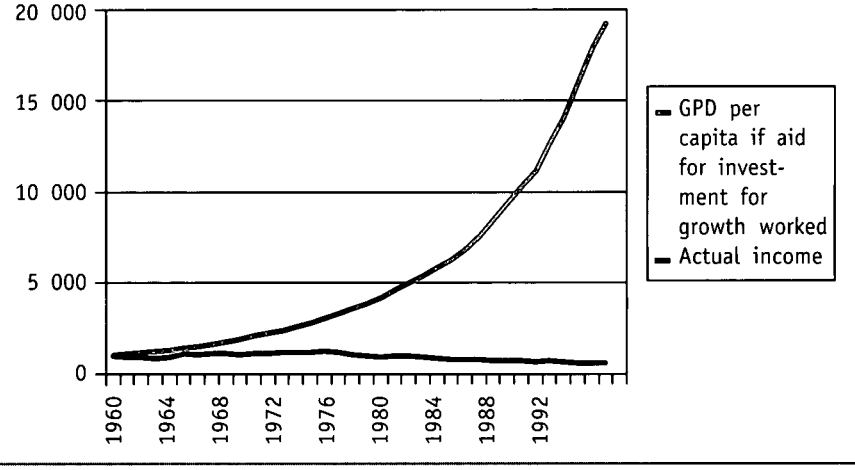


Figure VI.2 Zambia hypothesis (If investment had translated into growth)



capita income would have looked like over the last 40 years if all the inflow of money had financed investment in Zambia and all the investment had gone into growth. GDP per capita today in Zambia would be $20,000. Zambia would be invited to G8 meetings. It would become the G9 with Zambia. The average Zambian would be a rich person. But tragically this is not what happened. What actually happened is the blue line in figure VI.2. Despite all the large inflow of aid money and investment into Zambia, this money and investment did not translate into economic growth. It translated instead into stagnation because the business climate in Zambia and the behaviour of the donors and the way they all interacted was such as to create a very inefficient outcome that did not deliver economic growth.

The benevolent bureaucracy

So we turn to the myth of the benevolent bureaucracy and here I am going to distinguish two levels of bureaucracy: the national government bureaucracy and the international bureaucracy of the international financial institutions. And I am going to be a little hard on both of them. Having been a bureaucrat myself for 16 years in the World Bank, I had some personal insights into how bureaucrats behave. The first mistaken assumption about benevolent bureaucrats is that they actually want economic development—and so outside advisors, outside experts wearing suits and ties, the experts from the World Bank and the IMF, can fly into these countries and just give the right advice; the national government bureaucracy will take the advice and do the right things and that will create the environment for economic growth.

Well, that is extremely naïve. Politically, government bureaucracies do not necessarily want economic development. What they want is enough patronage resources to sustain themselves in power. Governments in polarized societies often choose redistribution away from those who are outside the ruling coalition towards those who are inside the ruling coalition, instead of choosing long-run economic development.

There is an economist from Pakistan named Ishrat Hussain, who said very bluntly that the ruling elite found it convenient to perpetuate low literacy rates in Pakistan. The lower the proportion of literate people, the lower the probability that the ruling elite will be displaced. Now who is this radical left-wing Pakistan economist? He is the Governor of the Central Bank of Pakistan, so he is on the inside. He knows whereof he speaks. And he is a little disillusioned after things like the $8 billion Social Action Programme financed by the donors—that after all of that $8 billion had been spent, the money spent on health per capita was still only $2 per Pakistani; about enough for a bottle of Tylenol each year for every Pakistani. And only about $8 per capita is spent on education.

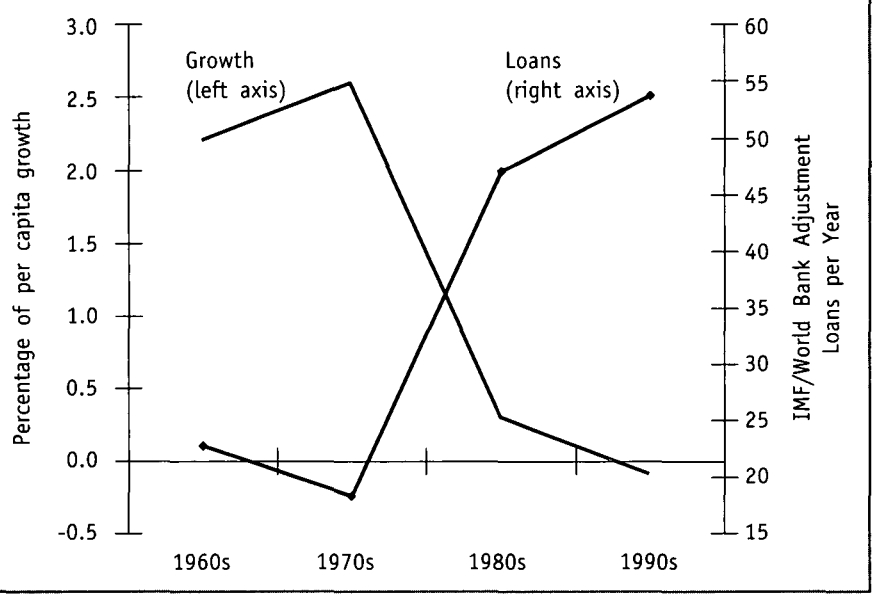
So then we turn to the international bureaucracy. Let us not be hard on the national government bureaucracy that does not necessarily want development but let us look at the international bureaucracy that we assume is so altruistic that all the aid agencies want is to find the most efficient way to reach the poor. They want to minimize the cost of reaching the poor so they can reach as many poor as possible. And so we will see extreme specialization and results-oriented management and so on in the international financial institutions and the international bureaucracy. Rather, if they were purely altruistic, maybe that is what we would see, but unfortunately that is not the case. Instead we see an astonishing proliferation of bureaucracy where the World Bank, that had only 600 employees in 1960, now has over 10,000, not counting the nationals that staff much of its local offices in every country.

And we see an increasing bureaucratization of development, with ever more baroque development frameworks. President Wolfensohn of the World Bank put forward his 14-item comprehensive development framework in 1999, ranging for everything from the spoken word to motherhood. But Mr Wolfensohn seems positively restrained by the standards of the Monterrey Conference which wound up with a consensus document that recommended 78 different actions to poor countries, including such ambitions as democracy, equality of boys and girls and peace on Earth and goodwill to men. Now I do not know how many of you have had management experience, but I would imagine that as a manager you cannot accomplish 78 different actions within one given term of office. But actually the Monterrey Conference seems kind of restrained compared with the Johannesburg Summit, that increased the list to 185 actions recommended to the rich and the poor nations. So in 2003, if we continue following this trend, I think we are going to have a very interesting international conference with approximately 500 actions.

Structural adjustment

So the myth of the benevolent international bureaucracy is that they truly work for developing countries, on things like structural adjustment, that has been the byword of the international financial institutions over the last two decades. They have talked about how structural adjustment—the combination of reform with growth-promoting measures—was supposed to bring adjustment with growth. That countries would adjust but they would get economic growth. The kind of result that they actually achieved over the last two decades can be seen in figure VI.3. The black line on the right-hand-side axis shows the number of structural adjustment loans per year, and the blue line on the left-hand-side axis is the growth per capita of the typical developing nation. So during the era of structural adjustment, of adjustment with growth, we actually got a lot of structural adjustment loans but we did not get growth.

Figure VI.3 Results of IMF/World Bank "adjustment with growth"



I am not going to argue that the expansion of structural adjustment caused the declining growth. I think that that is going too far. But certainly the objective of adjustment with growth and maintaining growth while you structurally adjust the economy was not achieved. That objective that was set out at the beginning of the 1980s for adjustment lending was not fulfilled. They had adjustment with stagnation and decline.

Debt relief

Another attempt to make governments benevolent is to give debt relief. Here the idea is very natural: since the adjustment loans were not productive, since adjustment lending did not work, it only stood to reason that countries were going to have trouble paying back the adjustment loans because they had not generated growth, so they had not generated much capacity to service the debt. So the World Bank and the IMF had to agree to debt relief. This could have been a kind of embarrassing moment for the IMF and the World Bank; that they would have had to admit that the structural adjustment loans they had made had been unsuccessful and they had had to write them off. But fortunately for them, they were able to capitalize on a public relations bandwagon by a coalition known as Jubilee 2000 that had mobilized great consensus for debt relief—and some of my future academic colleagues, such as the Pope, the rock star Bono from the group U2, the Dalai Lama, who has a great paper on debt relief in the journal Econometrica, and even my President, George W. Bush, came out in favour of debt relief. Because of this great consensus, the IMF and the World Bank were able to get away with writing off their adjustment loans by saying they were just being benevolent. They were giving debt relief—but debt relief has been already tried for 20 years.

What is remarkable about debt relief is that more and more keeps being given yet it never seems to solve the problem. There was a previous 20-year-long process of Paris Club reschedulings of debt, the conversion of loans to grants, the replacing of non-concessional loans with concessional loans, and then in 1996, we had the Highly Indebted Poor Countries (HIPC) initiative. But that still did not solve the problem, so in 1999 at the Cologne Summit, we had *enhanced* HIPC. And that still was not enough so at this year's annual meetings, Mr Wolfensohn was still passing around the hat trying to solicit donations for *enhanced* HIPC. But still I am rather pessimistic: it will not succeed in solving the problem. So debt relief has been another failure of the international bureaucracy, a failure of the international bureaucracy to achieve adjustment with growth, or debt relief with growth.

Benevolent intervention

So that brings us to the third myth, the myth of the benevolent intervention. Here the idea of the international financial institutions was that there was some magical intervention that would bring economic development to the poor nations. The legend of the quest typically has at its centre some magical objective—like Jason going in search of the Golden Fleece which was going to bring all kinds of long life and everlasting prosperity, or the Knights in the Middle Ages going in quest of the Holy Grail. If only you can find this magical object, it will bring you everlasting prosperity. Well, the kind of

magical objects that we tried as international financial institutions for developing countries were things like schools, health clinics, family planning, central bank independence, and currency boards. Major reforms in public administration and democracy is probably the latest fad to come down the road: democracy and good governance, cleaning up corruption, these are all sort-of-magical ideas that if only you perform this one action the economy will be transformed into a developed one.

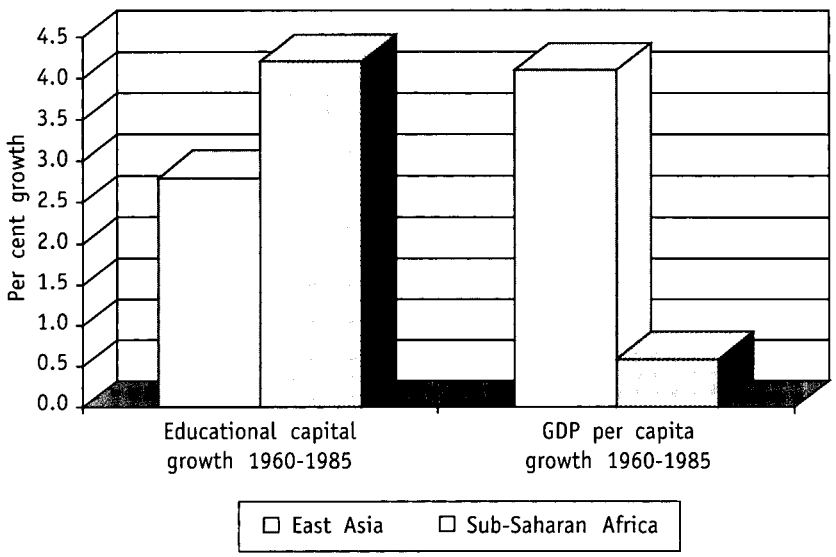
Education

Again, we ran afoul of the principle that people respond to incentives. None of these magical objects will work if the incentives of all the players in the development game are not right to make them work. Let me give you the example of education, which is truly a Holy Grail, if anything is. There actually has been a massive expansion of education in the developing world. The enrolment rates have gone way up in the developing world, in primary, secondary and tertiary levels, but creating skills requires more than just erecting school buildings and staffing them with teachers. It requires good institutions and highly skilled teachers that are truly motivated to pass the skills on to their pupils, and it requires much effort on the parts of parents and students. An example of how you can run astray, comes from some work I did on Pakistan: a survey that found that teachers were more often than not unmotivated political appointees who, in many cases, turned out to be not much more educated than the students they were teaching. That is, you had teachers with a third-grade education teaching third-graders. The bottom line was that this set of institutions in teaching in Pakistan was not actually creating high skills, even though there had been a formal expansion of schooling.

Also, the parents and students have to feel confident that the skills are going to pay off. That when the student graduates, that there will be a high-skilled job waiting for them when they graduate. You only make the effort to acquire skill if you have confidence that you are going to have a high-skilled job waiting for you. Otherwise, having skills is of no more use than, say, a hairdryer to a bald man: it is a technical wonder but it is just not all that relevant if the context does not exist to make it productive. So students and parents often did not have the incentives to make the effort because skilled jobs were not waiting for them.

There is evidence that education did not turn out to be as productive as we hoped. There does not appear to be a strong correlation across countries between the educational expansion that we have seen over the past three decades and the rate of economic growth (figure VI.4). If you compare East Asia and Africa, taking the official enrolment rates and deriving the educational capital of the labour force, Africa actually had faster growth of that educational capital than East Asia did. And yet, GDP growth was much slower in Africa than in East Asia. And this pattern holds across all countries. There

Figure VI.4 Education and growth: sub-Saharan Africa vs. East Asia



is just no correlation between growth of education and growth of GDP per capita. This caused one of my former colleagues at the World Bank, Lant Pritchett, to write an article asking, "Where Has All the Education Gone?" We have had this tremendous outpouring of education, but the places where it was outpoured the most were not the places that grew the most.

The need to re-orient incentives

We need a new development agenda. We need a revolution in development thinking and practice and the realization that "business as usual" by the international financial institutions is just not going to work. It has not been working. It is not going to work in the future.

And the kind of things we need to move away from is this over-emphasis on quantities of inputs. Every year, the IMF and the World Bank come out with their glossy annual reports where they brag about how much money was disbursed, how many schools were built, how high investment was—but these are all inputs into economic development, these are not the outcomes of economic development. So we should forget about all these studies, all this target-setting for how much money should be spent on inputs, the emphasis on mobilizing certain amounts of money for this and certain amounts of money for that. Instead we should concentrate on re-orienting incentives so that all the players in the development game have the right ones.

That probably requires many changes in institutions at the international and national level. At the international level, the international financial institutions have not really been held accountable. They are what my former boss, Joe Stiglitz, called the most unaccountable government institutions in the world. They are not really held accountable for the failures of structural adjustment lending or the failures of debt relief, or the failures of the educational expansion. Only when they are held accountable, will they really feel the incentive to change and to achieve results as opposed to just trying to mobilize quantities of inputs.

At the level of national governments, we also need deep changes in institutions, the kind of institutions that create a good business environment, such as protecting private property, enforcing contracts, having an easy, transparent system for registering land titles, protecting citizens against predators, against corrupt government officials, holding governments accountable for their actions. These kind of deep changes in institutions are necessary and they cannot be achieved overnight. They cannot be set as one of the goals in the five-year plan, but there will be a gradual change in institutions that will gradually lead to economic development.

Above all, we cannot give up and accept poverty, even if the record of development and economics has not been all that glorious so far. I think that in the development economics profession, we are now at the point where the medical profession was maybe 80 years ago, when it was in-between having learned that patent medicines do not work—those patent medicines which contain large doses of opium and lead and mercury. Somehow the doctors finally learned that empirically, and then later they discovered antibiotics and there was a medical revolution. I think we are at the point now where we have realized that the patent medicines of the past have not worked. We have not yet discovered the antibiotics that will. That is a task for the next generation of researchers and leaders.

So let me close with a paraphrase of a former United States President, "Let us keep striving so that development of the people, by the people, and for the people, does not perish from the Earth."

Comments and Avenues of Enquiry

Moment of enlightenment

FREDERICK SUMAYE
Prime Minister
United Republic of Tanzania

I have a simple question for Professor Easterly: when—because you have been working in the World Bank, as you said, for quite a number of years—did you learn about these things? Was it after you had left the World Bank or when you were still working with the World Bank? All the World Bank people and IMF people, even now when they come to our countries, reinforced these things which you do not support. So, as a person who has worked in the World Bank, when did this light come to you?

Global institutions, incentives and politics

SURESH PRABHU
Member of Parliament
India

If we are seeking a smooth transition to a new worldwide regime where there will be fewer poor and less inequality, we need worldwide institutions to achieve it, because it is beyond the effort of national governments to bring about a change like—if it were possible, it would have been brought about by now. We need a global effort to do that; that is a starting premise. So obviously we need the global institutions to address the problem. If global institutions are going to come out with one single recipe for all problems, how are they going to achieve it? In a world in which we are now moving towards genomics, it is not just a cure but predictive medicine that is required. And yet, we are continuing to work on the basis of a prescription which is age-old.

Incentives are needed—I fully share that, but let us look at it. When can you incentivize an activity? Incentives will obviously come from the outcome, because you cannot give an incentive to somebody who is not going to

perform, so the performance will ultimately turn into an outcome and the outcome can be rewarded in the form of an incentive. To bring about that outcome, you need some input, and in this case that is obviously financial capital. Now to pursue a particular model of development in your national economy, if you have no freedom to choose a model different to what is prescribed by the multilateral agency, how can you incentivize an operation? So how do you get the incentives process started in the first place? Start a process of a new thinking about the world economic order to allow new approaches to be grown and developed.

Do we really have several multilateral agencies working in different areas, trying to address different things? We have heard that every time we have an international convention, there are new action points and probably a new institution is born. And that means that instead of the beginning of a solution to the problem, we probably have the beginning of a problem, because the bureaucracy only burgeons. If that is how it is, how can we work towards a system of more focused action on the important issues?

One problem that we often see is that those who speak the right language are not successful politicians, because people saying we are talking like economists. How do you ensure that on this type of work, thinking is mainstreamed into adequate political language? And how do we ensure that institutions are properly insulated against so-called political intervention? When Professor Mowery alluded to research in the United States (chapter 8) he made a very interesting point: that despite the fact that every Congressman wanted that a research institution in his own district, the evaluation of proposals had not really been politicized. How can we ensure that such matters, such evaluation of new models that could emerge from different countries, are assessed on economic parameters and not on political considerations?

Incentives and international lenders

ABEL JOHN RWENDEIRE
Managing Director
Programme Development and Technical Cooperation Division
UNIDO

I am interested in the indication that growth in education in sub-Saharan Africa was much higher than in East Asia, and would like to know in more detail how the various subsectors of education developed. I know that in some of the countries in East Asia there was great emphasis on technical education, skills, training and so on. If you compare this with the emphasis in most African countries, you find that general academic education predominates. In most countries this occurred because at the beginning of the colonial era, there were places in the bureaucracies, so if you got a diploma or degree the chances

were that you could get into a white-collar job and there were many incentives attached to that. But there are now fewer places of that kind, so there is no incentive any more. Incentives are very important.

If I look at some of Africa's problems with the international financial institutions, infrastructure stands out. I recall in my own country, Uganda, we had proposed about 10 years ago building a dam for hydro-electric power to serve industry, but the World Bank refused. It said it had carried out a study and did not think that we would be able to utilize the power. Now because of other elements in the structural adjustment that has been implemented very well, there was a leap in the demand for power, and we have actually had to start rationing power in Uganda. If we had had that opportunity to construct the dam, there would not have been blackouts, rationing of power and so on.

Then we have the railways in East Africa; they need a lot of investment but the World Bank would not come up with money to refurbish them. Also, communications: I recall that a study was done which indicated that mobile technology would not be very useful for Uganda, because they looked at the landlines, saw there were very few, and said, no, this would not help. The Government pressed, but was not given funds to invest in actually starting up the mobiles. Now a private company has come in and even wheelbarrow pushers, who were not part of the former study, bought the mobiles. There has been phenomenal growth of mobile communications; much more than had previously been imagined. So what is the real lesson, when the infrastructure is described as part of the incentives and yet the international financial institutions do not want to invest money in it?

Achieving "critical mass" in the private sector

FELIX UGBOR
UNIDO Representative
United Republic of Tanzania

I hear clearly the need to encourage private sector. I quote: "Growth potential requires deep changes in institutions that affect incentives in the private sector." It is probably a myth to think that we do have a private sector in most developing countries, in the sense that we do not have that critical mass of private sector that can take advantage of most of the opportunities—including even the incentives you might wish to offer.

So the question arises, how do we go about developing or maturing this private sector—people who would be able to hold their ground, who can understand issues of globalization, who can take part in negotiations with the knowledge required. Even if you have incentives in place, you need people in the private sector to take advantage of them. If they are not there, what do we do? How do we go about creating them or maturing their growth?

Finding the link between education and growth

ADRIAN WOOD
Chief Economist and Director
Economics, Business and Statistics Division
Department for International Development
United Kingdom

Bill Easterly was very kind to restrict his criticism to international financial institutions: I think a lot of the mud should actually be thrown at the bilateral agencies—particularly in the matter of the proliferation and duplication of development assistance efforts. I do not have to tell Prime Minister Sumaye that having about 15 bilateral agencies running around United Republic of Tanzania on top of all the multilaterals occupies a good deal of time of the people who are meant to be governing and administering the United Republic of Tanzania; a very serious problem.

I would just speak a word in defence of education. I am familiar with the graphic that was shown and indeed with the earlier works that shows that there is absolutely no relationship between the proportional growth rate of education and the proportional growth rate of income. But actually there is quite a strong relationship between the increase in the absolute number of years of schooling and proportional growth rates. And this macroeconomic relationship actually corresponds with the microeconomic relationship that one finds in national country data between the number of years of schooling that somebody has and the proportional increase in their income, the log of their income. So I think that one does get a stronger relationship if one looks at it in a slightly different way.

I recognize that Bill was focusing on growth as an outcome but I think most people would regard the increase in education as a good thing in itself, and there is a fair amount of compelling evidence that these increases in education, particularly for women, contribute to other desirable outcomes such as more control over fertility, improved nutrition and health of their children. I think one should not be too critical. I would be much more inclined to accept the criticism that what aid agencies have done to promote education has not been effective rather than that effective education has not had good results—and I would say the same about investment. I think that there is actually in the long-run a much stronger relationship between investment and growth than Bill is willing to allow but that aid agencies have not been very effective in promoting investment in terms of what they have done with their aid.

Focusing on the quality of investment in education

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I would like to follow up on the issue of education. Bill Easterly pointed out briefly and maybe contentiously that it was very different to invest in school buildings than to invest in teacher training or, for example, in carrying out social programmes within schools. My experience is that decentralization and accountability in the school system is critical. You give the power to utilize the resources to the teachers and not to the bureaucracies; not to the Minister of Education, but to the teachers in even in the most remote places of my country.

So the question is maybe not to talk broadly about investment in education but about what kind of investment and what kind of incentives—because, if not, you may have counter-intuitive results. I believe that the best wealth redistribution is good incentives to invest in education in order to bring people up the ladder. Taking up Professor Wood's point of about the number of years of schooling, I would offer a suggestion: trying what we call in Spanish "double-timing", that is to say, morning and afternoon at school, to keep the children, especially those in the first grade, as long as possible in school. Obviously this provides a tool to fight famine, especially if you can get children out of poor homes and spending eight to nine hours in school. Then clearly move them up the ladder, focusing maybe on less school and more empowerment.

There are, of course, several questions to answer. How to prioritize those incentives? Are quantitative incentives to be considered? Fiscal incentives? How do concepts like accountability and decentralization come into play?

Responsibility and accountability in global bodies

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The problem with the excellent presentation by Bill Easterly is that one might agree to a quite an extent with the diagnosis—but then comes the difficult part of the exercise: what are the implications? If the diagnosis is right, where do you go from here? Is the theory wrong or is the policy wrong, or are both wrong, or are we looking for the answer to a wrong set of questions? Do we

really need a revolution or do we need to be properly directed by the intellectuals and the political leaders? Pretty often there is confusion between the means and the ends of the policies, when they are not working as they are supposed to. In real social and economic life, it is the same as with a human organism: some medicine works to some extent, but action produces reaction and one has to be flexible enough not to repeat the same remedies when the organism starts acting in a completely different way.

Keynesianism used to be a wonderful economic theory and it did make the economy work some time ago. And then somehow the strength of this economic theory and economic policy evaporated, so we came up with a different theory and a different policy; it worked to some extent, but it is now not working. So if there is an elusive quest for growth, it is actually the elusive quest for an economic theory which explains what works and why, and what does not work and why, or if it is simply a matter of policy failure.

There are three illusions, or over-emphasized attention given to money, bureaucracy and intervention. One must say, we do need money, we do need bureaucracy, we do need intervention. Without money there is no funding. I can assure you that as an organizer of finance, one has to have the money to attack the issues and to solve the problems. One also needs a decent, professional, determined, clean bureaucracy. The problem is that bureaucracy goes rotten in a very short period of time. That is also very true of the IMF, the World Bank and all international institutions (I hope to the least degree of UNIDO). Very many people are too long in these institutions and this is just international bureaucracy. They have their own agenda. They keep saying that they are fighting poverty but they are fighting to survive. They confuse the ends with the means and they enjoy the life; they make their living by advising others how to attack illiteracy, or AIDS, or exclusion or debt relief or infrastructure development or investment in human capital.

There is a long list of stories; some have been mentioned in the presentation. I can add to that, drawing from my experience with the IMF and the World Bank during the early years of transition in the post-communist countries, in the mid-1990s and now. They did change, but unfortunately the process of learning by doing in each bureaucracy is very slow, and we do not have a good mechanism for replacing the bureaucracy, or upgrading its quality, or changing the instruments of intervention, or simply not putting good money after bad.

All these systems work in such a way that nobody is responsible. Who is responsible for the post-communist mismanagement. Which person, or institution? If there is the good news, then we have a queue of people in the institutions who would like to take the credit. If things are not working, the same institutions and people are blaming the others. We have no mechanism of political responsibility. That works on the national level, to some extent, because there is the political struggle, the democratic system which gets rid of the bad policy makers, the bad governments, elites, etc.

I would say that the case of responsibility still has to be connected to the debate about the so-called Washington Consensus. This emerged from the financial institutions based in Washington. Because there you also find the White House, the United States Treasury, the American Congress and certain important think-tanks that have influence upon opinion leaders, what is said there has greater weight than what is being said by even better think-tanks based, say, in Venice or in Vienna or Bangkok, because this is Washington. John Williamson coined the term Washington Consensus 12-or-so years ago, yet there was never any consensus—even in Washington, which is proved from time to time, by the fact that Professor Easterly and Joseph Stiglitz have left the World Bank, and that Michael Mussa has left the IMF, because they do not agree with the leading edge of these policies.

I have been there a couple of times as a consultant to the institutions and many people have asked me why I was invited, since I was saying so many things that differed from the mainstream of this Washington-based consensus. I think there were two reasons. The first is that the bureaucracy is there for too long. We want our deputies, our government people, even the presidents to be rotated. The American President cannot be in office for more than two terms, that is eight years, but in the IMF and in the World Bank there are people who have been there forever, and are sure they will stay there forever. There is supposed to be a certain rotation of people because without that there is no rotation of ideas. But these people are not interested in being rotated because they have their own agenda.

The second time I was in office as Deputy Prime Minister of Finance, as I was walking in the corridor I overhead two ladies gossiping. One of them said, "You know, he is my ninth Minister of Finance, and it his second time. Of course, he will be gone and I will stay here." She was right; she will stay there and I will be gone and there will be a tenth Minister of Finance. She is in charge of co-financing housing and, of course, she is much more in charge of this policy than my deputy who is supervising her—because she was there, she is there and she is convinced that she will be there until her retirement, unless I fire her! And, of course, we are not able to fire them because it is very difficult to do so. Sometimes it is even easier to fire a Deputy Minister than this civil servant because they are being protected by certain laws and rules.

There is the case of responsibility and I would like to look at it also from a different angle. There are different international financial institutions which are supposed to support this process of development, getting out of poverty, etc., on a global scale. The first which come to mind are the World Bank and the IMF. Then we have the regional banks, development banks which are not to be compared just because they are regional: I think that the Asian Development Bank is doing much better than the European Bank for Reconstruction and Development. But the institutions which are leading the show, the IMF and the World Bank, are G7 institutions. They are not global institutions, they are not international institutions. What say does United Republic

of Tanzania have regarding the agenda and the approach of the IMF? What say does Poland have? Even Russian Federation? It is run by the G7 and, first of all by the United States, which is the main shareholder. Actually no major decision can be made if there is a veto by the Americans. So these institutions are simply subordinated to the Americans, to United States policies and priorities and the United States vision of the world. We may share this vision or not. We may support it or challenge it, but we have to admit that this is the fact. And we know it—I know it. No major decision is taken without the rubber stamp from the Department of State and the Department of Treasury, and sometimes even from the White House. Argentina is drowning because the United States Government took the decision that the IMF should not throw a rescue line to Argentina. Now maybe they are having second thoughts and regretting that. There was also a political decision to throw a rescue line to Brazil; these institutions are being used for political purposes. If there were nuclear weapons tests by Pakistan and India, political sanctions were imposed— so these institutions are being treated instrumentally according to the wishes of the superpower.

Once I was asked for my opinion when there was a strong debate over bailing out the Russian Federation. I discussed the matter with Stan Fischer, the number-two at the time at the IMF, and said, "Don't do that, you will simply lose this money. This is the Black Hole; they will swim for another three months and then there will be a great, great crisis." Mr Fisher said, "You know what, Greg: I share your view. We'll see." And so three days later there was a decision of the IMF Board to go ahead with a $22 billion bailout for the Russian Federation. Five weeks later, on 18 August 1998, the Russian Federation defaulted. So I said to Stan Fischer, "I do not understand what is going on here. You said that you were not sympathetic towards this bailout. He replied, "*They* made the decision." I knew from elsewhere that Mr Camdessus did not supporting the idea either, so I asked, "*Who* has taken the decision? The answer was, "The Americans." I said, "I thought that you are the American here." "No, I am not." That was the answer of the great Professor Stanley Fischer who was the American envoy in the IMF.

So there are certain decisions which are taken, not according to the substance, not according to the economic rationale, but because of political criteria—and the political criterion at the time was a very stupid one: that only Yeltsin could ensure the Russian Federation's survival, because otherwise there would be a "black" dictatorship, a sort of a post-communist fascism, so we have to put up $22 billion despite the fact that it would simply support the corrupt regime of Mr Yeltsin. Many people knew this, but only when the *New York Times* made public the money-laundering scandal involving the Bank of New York did everybody, including the American Congress, start asking, "What's going on? Didn"t we know about that before?" Yes, we did know about that before. Actually, it was neglected; it was not taken into consideration.

The question of responsibility for the coordination on the policies on the global or international scale, cannot be solved unless the existing financial international institutional order must be fundamentally overhauled and re-designed. It is not going to fly anymore—and it is impossible, due to its very nature, to redesign it from within. Even with such open minds as Jim Wolfensohn's, it is simply not possible, because the Americans work in such a way that there must be a shock from outside imposed upon these institutions—or maybe these institutions should be liquidated and replaced by new one.

So who is going to do it? It depends on the G7 and the G7 has no interest in doing it. So we must wait for another big crisis, on which will make the crises in Turkey, Indonesia, Russian Federation, Argentina and Brazil just peanuts, a joke. Or we have to wait for a leader in the United States or the United Kingdom which will be as tough in tackling this issue as in fighting Al-Qaeda. Otherwise, we will have 355 points and another summit, at Venice, or Bangkok, or Warsaw, or Dar-es-Salaam—it does not matter.

The issue is not so much who is responsible on the individual scale, but I think that from time to time we should admit not only who is right—Professor Easterly is right—but who has been wrong. For instance, we have bad results in Eastern Europe, including Poland's initial period of transition which I refer to as shock without therapy, because of idiocy and ill-advice of certain people from the United States—like Jeffrey Sachs, who didn't distinguish at the time Bucharest from Budapest. He was the Michael Jackson of economics; he knew everything, we did not understand anything—but privatize, liberalize, be tough in financial monetary terms and we will fly. So we are all flying. The GDP in Moldavia is at 35% of what it was in 1989. The GDP in Ukraine is at 40% of the level of 1989. We privatized almost everything. We have an independent Central Bank, everything. We liberalized everything, much more even in our trade than, say, the United States or the European Union. The debt is growing. The economies are shrinking, exclusion is growing.

Now the World Bank proposes to give us another grant because we want to restructure public finances still further. I have taken a look into the grant. What sort of grant is it? If I accept the money they will send me experts, who will take a couple of hundred dollars per day, stay at fancy hotels, then will tell us that I have to cut the fiscal deficit. That I know, and I do not like soft advice for hard money. I prefer this hard money and I will take care of it because I am literate enough. I do know: I teach at Yale; I do not need these fellows to tell me that two times two makes four and call it assistance or aid, then blame us because we have too much corruption. I know we have too much corruption, and I am fighting the corruption—not so the international bureaucracy because they are sometimes part of this corruption.

Debt relief

I am still in favour of debt relief, especially of the Highly Indebted Poor Countries (HIPC) initiative. It is not going out to heal or cure the situation, but without debt relief or HIPC the fact is that the debate becomes senseless. There is no chance of discussing, for instance, how to manage development in Mozambique if debt-servicing is exceeding the budget expenditure for health and education and culture, if agriculture is being paid for by the State budget.

We have a good example. Poland got debt relief of 50%, based on sensible conditionality followed by good structural policy which was combined with development policy. The most serious mistake of the IMF is that they talk only about structural reforms, structural adjustment, but there is no development policy. This is because of the failure in Russian Federation. But compare that with China, where we have reforms that are changing the system and we have development policy that is working within the changing system to sustain and raise the rate of growth.

Response: education not about quantity delivered

WILLIAM EASTERLY

My favourite question was the one from Prime Minister Sumaye: when did I learn that things did not work at the World Bank. I will not divulge too much information so as not to be held legally accountable, but gradually I came to realize that things were not working, and there were other people around me that I learned from who also realized things were not working. Many of us have now left the World Bank. I think the implied comment is that many of us should feel deeply humble after subscribing for too long to these failed ideas, and I totally agree that we should definitely learn humility from past mistakes.

Mr Rwendeire made a very good point about the subsectors of education. Vocational education is definitely part of the story but this takes us back to the question of incentives. You want the national and international bureaucrats delivering the kind of service that the people on the ground are demanding, that they want. You do not want supply-driven interventions by what the international bureaucrats think is needed; you want feedback from the ultimate customers so that they can tell you what it is they really want. And if it is vocational education, then that is what you deliver, not some other kind of education just to meet some millennium development goal.

Professor Wood is very right: I am certainly not going to make a blanket statement that education is useless and bad. After all, my new job is designed to deliver education to people in New York University (NYU). So I certainly

think that in some sense education is very useful and good, but our *emphasis on the quantity of education delivered* is what has led us astray. What matters is not the quantity that is delivered, it is the motivation that everyone involved in education has. If my students at NYU turn out to be totally unmotivated and do not listen in class, then they will not learn anything. If I turn out to be a totally unmotivated Professor who spends no time preparing and just reads from the *New York Times* to the class every morning, then skills will not be delivered. It is the motivation that people have in the educational system to actually create value that matters, and we should be focusing on those motivations and not on the quantities or the volumes of education that are actually accomplished.

Vice-Minister Redrado also commented on the education question and I agree that accountability, decentralization, charter schools—all these are useful experiments to try to get better incentives in the education system.

Mr Felix Ugbor made the point that the private sector is a myth in many poor countries; that there is no "critical mass" for the private sector. I think that is certainly true in many poor countries, but the private sector is something that arises endogenously when the incentives are there. People are not entrepreneurs because the reward to being entrepreneurs is not there in the system. When the private-sector business environment exists, when it is simple to register a business, when it is highly likely that you will keep the profits from a business, then you suddenly find that people start being entrepreneurial—so I think the private sector being missing is a result of bad policy, not a cause of bad policy.

Professor Kolodko said that the diagnosis was right but asked where to go from here—and then was kind enough to supply the answers for a lot of these questions. I agree on a lot of the things that he said. I particularly liked the idea that a lot of where we have gone wrong is confusing ends with means. We have whole bureaucracies designed to deliver the means to development without ever being held accountable for the ends; for whether in the end they actually achieve development or not. And the system works in a way that no one is held responsible when things go wrong, no one is to blame. If there is a cardinal principle of bureaucracy that holds true everywhere, it is that a bureaucracy can be defined as an organization where no one is to blame. With this kind of organization, it is not surprising that no one is motivated to actually achieve results on the grounds. So the beginning of the revolution will certainly be in changing the equation that no one is to blame and holding bureaucracies accountable for the results, and holding individuals within the bureaucracies accountable for the results that they deliver.

One theme that recurred in many comments was about exactly what incentives I suggest to replace the failed panaceas of the past. Mr Prabhu started to point a way to the answer. Number one: we need institutions that are not motivated by political concerns. Number two: we cannot have the same recipe for everyone. A doctor does not treat every patient that comes into

his office with a measles vaccination, regardless of whether you have the flu or you have diarrhoea or whatever. And we need to have stronger motivation for both the national government bureaucracy and the international bureaucracy to achieve results, to be held accountable when they do not achieve results.

I think there is no one big answer that at the end of the day will take the place of all these failed panaceas. What we need, I think, is a revolution that will involve better institutions and better incentives for a lot of experiments, such as school decentralization. An experiment works under some circumstances and not in others: we try it out, we evaluate carefully what works, when it works, when it does not work, and then we act upon the results. And when we do a lot more evaluation, then it will be possible to hold bureaucrats accountable for what they do and then we hope they will have better development futures.

Chapter 7

Making Sustainable Globalization a Believable Aim

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Political Advisor
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> In Johannesburg it was clear that there is an increasing disillusionment in the South with the action of the North—and here I do not think we can draw a clear distinction between the action of the North-United States, or the action of the North-EU. We obviously have to regain credibility: the increasing divide between North and South must simply become our new frontier, our new challenge.
>
> Of course, this is related to the consistency between our internal and external policies, particularly regarding the question of agriculture. We recognize the importance of agriculture for the developing countries. We agree that tariff reduction is not enough.

We feel that the political response to the global sustainability crisis and to the main development issues has so far proved insufficient at all levels—national, regional and international. In order to make globalization sustainable, we think we need a much better balance between global market forces on the one hand, and global governance and political institutions on the other. In all modesty, we think that the European Union is well placed to assume a leading role in the pursuit of global sustainable development. After all, it is a fact that the Union is the world's largest donor—together, of course, with the bilateral action of the member States. It is the world's biggest trading partner and it is a major source of private direct investment. But assuming a leading role does not mean that some person or an organization or a regional bloc has to do everything on its own. Tackling global problems requires simultaneous action by all nations and we can only succeed if all the political and economical actors, including the major ones, commit themselves to face the political challenge.

This global partnership certainly needs to embrace all stakeholders and from this point of view, my first point concerns the internal policies of the developing countries. These internal policies are vital. They include, of course, the policies related to integration with the global economy, macroeconomic stability, a favourable investment climate and institutional and legal reforms—but they also include other domestic policies, in the areas of taxation, income redistribution, decent work rights and the fight against corruption, which we feel are equally fundamental.

Regarding development, we think that the agreement reached in Doha was a very important step; a clear example of the integrated approach to harnessing globalization, promoted by the European Union, which lays the foundations for further changes in the global system. The inclusion of talks on a range of trade-related issues such as competition, investment, trade facilitation and government procurement, after the next WTO Ministerial Conference in 2003, should ensure that market liberalization takes place in a broader regulatory framework, helping countries to manage and maximize the benefit of reforms.

The agreement reached in Doha to negotiate a multilateral framework for transparent, stable and predictable conditions for investment is an important factor in this context. Participation in such a framework agreement is expected to provide greater certainty and to reduce the risk for potential investors. This should help to increase the inflow of foreign direct investment. It should help, also, to promote a healthy balance of trade, encourage efficient production and stimulate technology transfer. The European Union is committed to help developing countries gain a larger share of world trade. This requires a strengthening of the supply-side structure of developing economies, a further opening of the markets of industrialized countries for products from the South, and the further reduction of world-price-depressing agricultural subsidies.

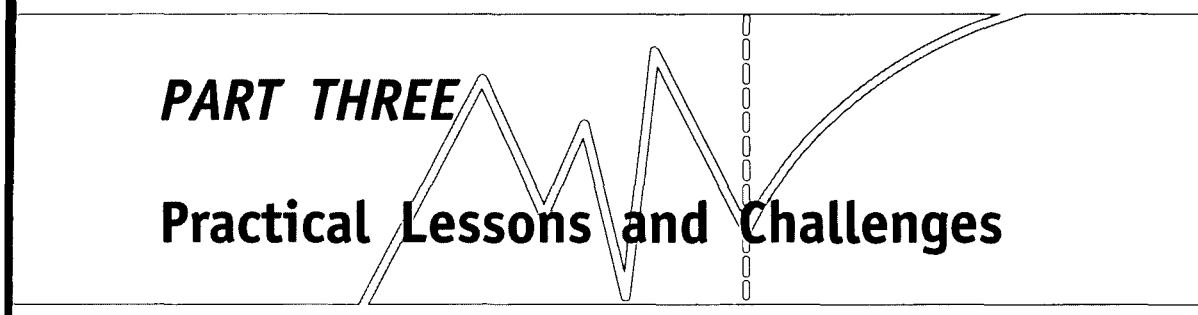
But Doha on its own is not enough. There is another side to the coin, and this is Official Development Assistance (ODA)—which leads me to Monterrey. We recognize that a free world market alone will not lead to equitable and sustainable development. ODA remains critical to support the autonomous efforts of developing countries, especially the poorest ones. ODA should not be seen as a temporary fix, but rather it must remain a permanent feature of a minimally decent international society. The overall Organization for Economic Cooperation and Development (OECD) average is now 0.23% of GDP. It goes without saying that this persistent gap between policy statement and practice does not add to the credibility and to the trustworthiness of rich countries.

And this question of credibility leads me to my third point, which is Johannesburg. In Johannesburg it was clear that there is an increasing disillusionment in the South with the action of the North—and here I do not think we can draw a clear distinction between the action of the North-United

States, or the action of the North-EU. We obviously have to regain credibility: the increasing divide between North and South must simply become our new frontier, our new challenge. The new pact between the North and the South must be based on trust and must be on a shared goal of sustainable development. We did not feel any shared trust in Johannesburg at the end of August 2002. We felt an increasing distrust, a widening gap between the political discourse and commitment of the North and the expectations of the South. This calls for a concentrated focus on this specific problem.

Of course, this is related to the consistency between our internal and external policies, which brings me back to the question of agriculture. We recognize the importance of agriculture for the developing countries. We agree that tariff reduction is not enough. Major reductions in trade-distorting domestic support and in all forms of export subsidies are also needed. I think that the first proof of our commitment in this area is the recent proposal of the European Commission concerning the Common Agricultural Policy (CAP) and fisheries because with it we aim to switch our agricultural policy away from production-linked aid and towards rural development.

This should go together with a new focus of our ODA on the transfer of know-how, transfer of technology and a major emphasis on education and health. This emphasis on education and health is all the more important where our relations with a government of a certain country are not perfect, where the state of democracy in certain developing countries is not the best we can hope for. Of course, the credibility of ODA is linked to quantity, and the goal of reaching 0.7% of GDP is already a big step in that direction. We do not feel it is enough but it will help add some credibility to our action.



PART THREE

Practical Lessons and Challenges

Chapter 8

Intellectual Property Rights, Competition and Knowledge-Based Public Goods: Evidence from United States Policies

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The evidence on the evolution of United States policy suggests that counting patents is not a useful approach to the evaluation of innovative performance, despite the fact that many United States universities cite the number of patents that they have obtained as a key index of their innovative performance. The issue of "quality control" in the review and issue of patents, especially in new technical areas, is now the focus of considerable debate.

United States experience suggests that the underlying incentives that are created by strong competition (or its absence) among R&D performers (be these universities, firms, or public laboratories) may well be more important than strong intellectual property rights (IPR) in encouraging effective public-private R&D collaboration.

"The supply of public goods, yet another public policy dimension, concerns the production of partially excludable non-rival goods. For instance, technical knowledge may be shared without reducing its availability to whoever shares it (this is the attribute of non-rivalry in consumption). However, technical knowledge may nevertheless be subject to various degrees of private control (this is the attribute of at least partial excludability). The peculiar tension between the potential for private appropriation, on the one hand, and the potential for social gain, on the other, is what justifies active public policies in fields such as research and development and education and in other spheres such as the development of institutional infrastructure and the rule of law."

Magariños and Sercovich, Gearing up for a New Development Agenda, *2002, p. 132.*

As the statement above from the first Venice UNIDO conference on *"The New Development Agenda"* suggests, an important policy issue for developing economies is the design and implementation of policies to support knowledge production, dissemination, and utilization. And this policy sphere is one in which much of the "advice" provided by the industrial nations ignores central aspects of these industrial nations' own historical development. I shall try to bridge this gap, at least partly, by examining the historical evolution of IPRs, policy and competition policy in the United States and the influence of this path of evolution on United States industrial development, particularly the evolution of United States high-technology industries in the postwar period.

I shall then discuss some specific issues in contemporary United States policy debates over IPRs that concern their role in facilitating R&D (research and development) collaboration between private firms and universities. These policy initiatives are the Bayh-Dole Act of 1980 and the Cooperative Research and Development Agreements (CRADA) that encourage collaboration between private firms and public laboratories. I shall thus cover each of the three pillars of the United States R&D system—firms, universities and public laboratories—and focus on the ways in which IPRs and competition policy have influenced the evolution of each of these and the collaboration among and between these various institutions.

Development of the "Strong Competition Policy/Weak Intellectual Policy" regime in the United States

Through most of the 20th century the United States had a unique policy environment in both competition policy and IPRs. The Sherman Antitrust Act, the foundation of United States competition policy, was passed in 1890. A nearly simultaneous set of changes in United States patent policy, which strengthened the rights of patent holders and reorganized the patent examination policies of the United States Patent Office, reflected the fact that the United States economy was shifting from a position of technological "followership" to an emergent position of technological leadership.[1] Occurring

[1]As Bright (1949, p. 88) notes, "The US patent laws at that time [the 1890s] contained a provision that an American patent was valid only as long as the shortest-lived patent in a foreign country, if the foreign patent had been issued first. The Canadian patent [for Edison's carbon filament] was declared invalid by the Canadian Deputy Commissioner of Patents, on February 26, 1889, for non-compliance with Canadian statutes regarding manufacture and importation. If that decision had been allowed to stand, the American patent would probably have become void also, since the Canadian patent had been granted before the American patent." Pressure from US firms that had become patent holders led to revision in this statute: The American patent laws were revised as of January 1, 1898 to include a provision that domestic applications for patents could be filed anytime within seven months of the earliest foreign application without prejudicing the full seventeen-year term of the American patent, regardless of its date of issue. The revision resulted in large part from agitation created during the early nineties when the Edison patent and a few fundamental patents in other industries were cut short before their full terms. The modification had an important bearing on the length of patent protection in incandescent lighting after that date. (Bright, 1949, p. 91).

as they did as part of the transition by the United States economy from an agrarian developing economy to an industrial colossus, these policy initiatives created a strong interdependence between United States IPRs and competition policies.

These new policies enhanced the incentives for large United States firms to establish in-house R&D laboratories, and the origins of industrial R&D within United States corporations can be traced to these decades in the late 19th and early 20th centuries. United States firms sought initially to use mergers and cartel agreements to achieve or preserve positions of market power. Following the Supreme Court's 1904 decision in the Northern Securities case, these agreements became legally suspect under the Sherman Act and large United States corporations turned to the development of technologies protected by patents, patent licensing, and the acquisition of patents from other sources as mechanisms to achieve positions of market power and, in many cases, technology division diversification. By the early 20th century, the United States federal courts had adopted a position of deference to patent holder rights in decisions about the use of patents and the use of patent licensing and related techniques to achieve positions of market power.[2]

From the early 20th century through the late 1930s and the "Second New Deal" of the Roosevelt Administration, enforcement of United States antitrust policy was relatively weak. But beginning in the late 1930s under Assistant Attorney General Thurman Arnold, a series of landmark antitrust suits were filed against AT&T, DuPont, and other large United States firms. Many of these cases were not decided until the early 1950s, and the resolution of several of them affected the development of key high-technology industries in the United States during the postwar period. To take only one example, the resolution of the first AT&T antitrust case in 1956 proved to be important for the growth of the semiconductor industry in the postwar United States. AT&T, the firm with the largest single portfolio of patents related to semiconductor technology in the early 1950s, was mandated, under the terms of the 1956 Consent Decree that settled the case, to licence those patents at low royalties to all comers.

This consent decree opened up the patent portfolio of the firm with the greatest technological capabilities in semiconductor electronics at this time to

[2]For example, the 1911 consent decree settling the federal government's antitrust suit against General Electric left GE's patent licensing scheme largely untouched, allowing the firm considerable latitude in setting the terms and conditions of sales of lamps produced by its licensees, and maintaining an effective cartel within the US electric lamp market (Bright, 1949, p. 158; Reich, 1992). Bright (1949) noted that "What the [1911 consent] decree did not require was of equal importance. No restriction was placed upon a manufacturer's right to acquire patents to fortify his interests. Moreover, the decree expressly stated that patent licenses might specify any prices, terms, and conditions of sale desired, although they could not fix resale prices. That permission left an enormous opening for continued control over the incandescent-lamp industry by General Electric, and the industry leader took full advantage of it in later years. Since the GEM, tantalum, and tungsten lamps were rapidly replacing the ordinary carbon lamp, an open market for carbon lamps was not of much importance. General Electric's control over prices charged by its licensees was not seriously affected, and it retained its patent monopoly over the new types of lamps." (p. 158).

other firms, many of which entered the embryonic semiconductor industry. The consent decree and related United States policies (such as military procurement) also encouraged cross-licensing of patents and contributed to the development of a relatively weak IPR environment characterized by substantial inter-firm flows of knowledge. Similar provisions in another 1956 consent decree that resolved a federal antitrust suit against IBM mandated extensive licensing of IBM's patents in electronic computers and related technologies.

United States competition policy had significant implications for two other new postwar United States industries. The emergence of a United States computer software industry populated by independent developers and vendors occurred only after IBM, facing another federal antitrust suit filed in the late 1960s, began to price and market hardware and software as separate and distinct product lines in 1969. This shift in IBM pricing policies created an opening for specialized, independent vendors to enter the sale of software, which formerly had been dominated by producers of computer systems that sold both hardware and software in a single package (Steinmueller, 1996). A similar set of developments influenced the emergence of the Internet. One of its key technologies, the so-called TCP/IP Protocol, was published rather than being patented in the face of the relatively weak IPR and strong competition policy regime that characterized the computer industry by the late 1960s (Mowery and Simcoe, 2001).

Thus, the development of the postwar semiconductor, computer hardware, computer software, and computer networking industries in the United States was characterized by high levels of technology exchange among firms, extensive cross-licensing of patents, and considerable entry by new firms. The development of all of these industries reflected the unusual posture of stringent competition policy and relatively weak IPR policy that emerged in the United States during the early postwar years.

Change in United States Intellectual Property Rights (IPRs) and competition policy after 1980

The relatively weak IPR and strong competition policy regime that typified the United States during the early post-1945 period underwent considerable change during the 1980s, as a result of legislative and judicial actions. In two major 1980 decisions, the Supreme Court decreed that computer software and biotechnology were patentable pieces of intellectual property. In 1982, the United States Congress created the Court of Appeals for the Federal Circuit, a specialized court for appeals of patent cases that became a champion of patent holder rights. Antitrust policy also was relaxed somewhat during this period, as the IBM suit that triggered this firm's "unbundling" of software and hardware was withdrawn by the Federal Government and other suits were settled. The Bayh-Dole Act of 1980 and the 1986 legislation that created

Cooperative Research and Development Agreements represent another aspect of the shift in policy shift toward IPRs.

These decisions and policy changes during the 1980s had several effects. Stronger patentholder rights and the associated increased risk of litigation over patent infringement produced higher rates of patenting in the United States, following a period of decline during the 1970s and the early 1980s. Much of the increased patenting appears to reflect defensive motives, i.e., firms may now file for patents on artifacts that in previous decades they might well not have patented (Hall and Ziedonis, 2001). Such defensive patents provide a "currency" for cross-licensing schemes, but growth in this type of patenting may not represent any increase in the underlying rate of innovation. Regardless of the extent of such defensive patenting, the possibility that these motives account for a portion of the growth during the 1990s in United States patenting illustrates a key fallacy in counting patents themselves as a measure of innovative activity. The economic or technological significance of patents varies greatly, and many patents cover modest or trivial advances in knowledge or art. Merely counting patents may yield a spurious measure of the rate of innovation within an economy.

This stronger IPR regime has given rise to domestic controversy in the United States. The patenting of inputs to science, such as research materials and gene sequences, has raised serious questions about the potential increase in the transactions costs and complexity of conducting scientific research in a more complex web of IPRs covering the inputs to the scientific research process (Heller and Eisenberg, 1998). The expanded flow of patent applications to the United States Patent and Trademark Office (USPTO) also has raised concerns over the rigor of the USPTO's examination of these patent applications. A combination of increased workload, flat budgets for the USPTO, and the expansion of new areas of patenting has led some critics to argue that the USPTO's examination of patent applications now is less thorough, leading to the issue of so-called "junk patents" that are worth a little more than the paper they are printed on. Growth in patent applications in new technological areas is a particular challenge for USPTO examiners because of their reliance on the examination of previously patented artifacts in the examination process. In fields such as software, biotechnology, or "business methods", however, where patenting was until recently fairly rare, little patent-based prior art exists, and non-patent-based prior art often is less easily accessible.

Cross-licensing and patent pools provide two mechanisms used by many firms to address this complex web of overlapping and occasionally conflicting IPRs. Both mechanisms have attracted the attention of United States antitrust authorities because they have been used for anti-competitive purposes in the past. The "strong IPRs regime" thus poses important challenges for competition policy (Shapiro, 2001). More generally, the effects of this regime are beginning to draw greater criticism from industry managers, including managers in some sectors (such as pharmaceuticals) that were major sources of

political support for the strengthening of IPRs in the United States and abroad during the 1980s. The domestic debate over the consequences of the stronger IPR environment that was created in the United States during the 1980s has only just begun, and its ultimate outcome is difficult to predict.

The Bayh-Dole Act of 1980

As I noted earlier, the Bayh-Dole Act was passed in 1980 as part of the shift in United States policy to favour stronger IPRs. The Bayh-Dole Act was intended to encourage the transfer to industry of university and government-laboratory inventions for commercial development. The Act did not legalize anything that was previously illegal but enabled institutions, universities and laboratories to obtain patents on inventions and to license these patents to private firms on an exclusive or nonexclusive basis. The Act constituted an important political statement by the United States Congress that technology transfer was important and that IPRs and licensing were key mechanisms to accomplish these goals.

Bayh-Dole has been cited on the basis of little evidence as a key factor in the so-called new economy and competitive revival of the United States in the 1990s.[3] And a number of other OECD member States and developing economies are debating or have instituted initiatives modeled on the Bayh-Dole Act. But a more thorough evaluation of the effects of the Bayh-Dole Act remains to be carried out. Among other things, recent references to this Act as a key factor in improved United States industrial competitiveness during the 1990s overlook the fact that many United States universities engaged in patenting and licensing of faculty inventions for decades before 1980. Moreover, these universities' patenting and licensing activities were only one aspect of a rich and complex set of collaborative relationships linking them with industry.

Any assessment of the Bayh-Dole Act also must take into account the characteristics of the diverse array of channels and processes through which university or public-laboratory inventions are transferred to industry and commercialized. Efforts to "emulate" the Bayh-Dole Act in other nations also must be informed by a recognition of the other unusual characteristics of the United States universities system that have encouraged collaboration between universities and industry.

The process of university-industry technology transfer differs somewhat from other technology transfer processes in that most university inventions are more embryonic than industrial pieces of technology that are subject to

[3]A recent report by the Congressional Joint Economic Committee argued that "Regulatory reform in the United States in the early 1980s, such as the Bayh-Dole Act, have [sic] significantly increased the contribution of scientific institutions to innovation." (US Congress, Joint Economic Committee, 2000, p. 77), and the OECD argued in a 2000 report that the Bayh Dole Act was an "... important reform which helped spur quick adoption [of new technologies]."

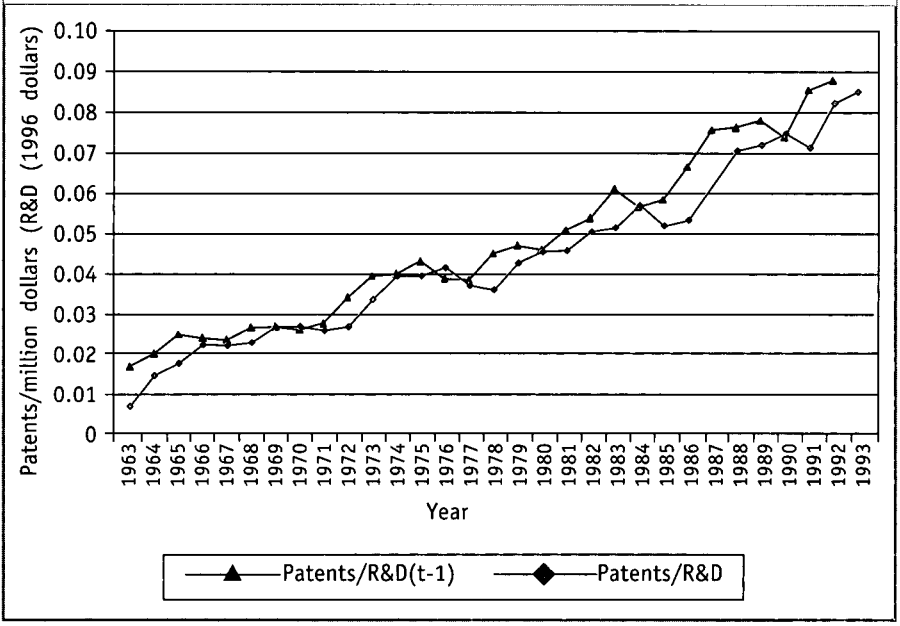
licensing or technology transfer. Because many university inventions are effectively "pre-prototypes", their technological and commercial prospects are difficult to evaluate. Moreover, the commercial development of such inventions relies more heavily on so-called know how or tacit knowledge that is rarely conveyed through patents or licence contracts. All of these characteristics mean that the direct involvement of the inventor is important to the process of technology transfer. The importance of inventor involvement is one reason that many United States universities utilize a decentralized organizational structure for their technology transfer operations. The need for inventor involvement in the transfer and commercialization of university inventions also helps explain the frequency with which university inventions are licensed to new firms founded by the inventor.

In considering the effects of Bayh-Dole on United States universities' transfer of knowledge and technology to industry, therefore, one needs to recognize the importance of the broader "incentive environment" for faculty and other university personnel to seek out collaborative and other research relationships with industry. The structure of the United States higher education system has for most of the past 125 years created strong incentives for the creation of linkages of all sorts between academic research and industry. The United States university system is enormous. It is much larger than the university systems of almost any other OECD economy. It is a very decentralized system, lacking a federal Ministry of Education. The higher education system in the United States also is populated by many different kinds of institutions: public, private, religious, large, small, high-quality and low-quality colleges and universities all play important roles in education and research. Moreover, these institutions frequently rely on local industry for political and financial support. Research universities compete fiercely for prestige, resources, faculty, and students. This decentralized system thus is characterized by considerable inter-institutional competition and institutional autonomy, characteristics that long predate the Bayh-Dole Act and that create strong incentives for collaboration between industry and university faculty in R&D, patenting, and licensing.

Reflecting the strength of these incentives to develop research collaborations with industry, many United States universities were active in patenting and licensing, as well as other forms of collaboration with industry, well before the passage of the Bayh-Dole Act in 1980, although a number of other universities began or expanded their patenting and licensing activities after 1980. Interestingly, many of the universities active in patenting and licensing faculty inventions before Bayh-Dole avoided direct involvement in the management of patenting and licensing. Their "arms-length" approach to managing patenting and licensing began to change during the 1970s, however, and during the post-1980 period, virtually all universities entering into patenting and licensing were directly involved in the management of these activities.

Although the passage of the Bayh-Dole Act triggered some changes in the role of universities within the United States national research system, much of the post-1980 growth in patenting and licensing would have occurred without Bayh-Dole. *This growth reflected both an overall strengthening of IPRs in the United States and a long-established trend of growth in federal funding for the biomedical research* that has been the focus of much university licensing and patenting. Figure VIII.1, which depicts trends in the ratio of patents to university R&D funding during the 1953-1993 period, displays no sharp break in trend immediately before or after 1980, the year of passage of the Bayh-Dole Act. The evidence in this figure suggests that growth in United States university patenting after 1980 reflected continued growth in academic R&D spending, rather than any sharp increase in the "propensity to patent" of United States universities. Indeed, there is little evidence of dramatic growth in other forms of university-industry interaction since the passage of the Bayh-Dole Act. The share of overall university research funded by industry has not grown since 1980, but has remained at roughly 7% (Mowery, 2002).

Figure VIII.1 Aggregate Patent/R&D Ratios for Universities, 1963-1993



Several other characteristics of the licensing activities of United States universities merit brief mention.

The first is the *high level of concentration of licensing revenues* among a small number of inventions. This characteristic is true of almost any patent portfolio—a very small number of those patents account for most of the

economic or licensing royalty value. Nevertheless, this characteristic of university patents and licensing income underscores the importance of the so-called "homeruns" in licensing revenues. Universities that lack these so-called homeruns, which typically are concentrated in the biomedical technologies, often fail to realize significant revenues from their licensing activities, particularly in view of the high cost of establishing licensing operations.

The importance of biomedical technologies within most United States universities' licensing activities reflects the fact that biomedical patents are relatively effective tools for capturing the returns to innovation (Levin et al., 1987), and the value of individual patents tends to be greater than is true of patents in other technical fields. But in other technology fields, where patents are less economically important and valuable, licensing may yield far smaller revenues. Moreover, efforts to negotiate arrangements for patents and licensing in university-industry research collaborations in these other fields may in fact discourage such collaboration. Patent and licensing negotiations in these other technological fields have become a source of friction in relationships between university researchers and industry in some cases, rather than serving as an important incentive for such collaboration.

As I noted earlier, a number of other industrial and some industrializing economies now seek to emulate the Bayh-Dole Act, focusing on the clarification of IPRs and the ownership thereof as a means of accelerating "technology transfer" from academic research to industrial development. But the available evidence on the Act's effects on United States university-industry collaboration suggests that such emulation by itself, without additional structural change in the higher education systems of many of these nations, will be ineffective or even harmful.

The rush to emulate the Bayh-Dole Act by other nations overlooks several key elements of university-industry interaction and collaboration. The first is the fact that the collaboration in research and technology transfer to industry that many United States universities have pursued over decades spans *a number of channels of interaction that go well beyond patenting and licensing.* These channels include the placement of students, faculty consulting and publications, industry funding of academic research, and many other forms of interaction. Many of these other channels obviously are ignored by reforms or initiatives that focus on patenting and licensing; indeed, some of these patenting and licensing initiatives could have a chilling effect on other channels of university-industry interaction.

In addition, as I pointed out earlier, much of the historically high levels of university-industry interaction in the United States higher education system reflect *the incentives created by the structure of the university system.* In the absence of broader reforms to affect incentives faced by individual faculty researchers, to enhance inter-institutional collaboration and to enhance inter-institutional competition for resources, an exclusive focus on patenting and licensing may well be unsuccessful or even counterproductive.

Cooperative Research and Development Agreements (CRADAs)

Another important policy initiative of the 1980s that sought to use stronger IPRs to support public-private R&D collaboration in the United States is the CRADA. CRADAs were created in legislation passed in 1986, and sought to foster closer R&D collaboration between United States industry and the more than 700 federal laboratories that operate in the United States. Like Bayh-Dole, the Cooperative Research and Development Agreement emphasizes the establishment of formal IPR as a vehicle for supporting collaboration in technology transfer. But CRADAs that seek to encourage collaboration between public laboratories in the United States and private firms *involve public entities whose structure is very different from United States universities.* In particular, the federal laboratories have little if any of the institutional competition and autonomy that characterizes United States universities and creates incentives for collaboration between universities and industry.

The number of CRADAs negotiated between federal laboratories and United States industrial firms grew rapidly during the 1989-2000 period (a 1989 amendment extended the CRADA mechanism to the many federal laboratories managed by contractors), and nearly 4,000 such agreements were active by the early 1990s. Despite or perhaps because of this large number of CRADAs, there is virtually no systematic evaluation of their operation or effectiveness. Recent research on the CRADAs of a large United States Department of Energy (DOE) laboratory (Ham and Mowery, 1998) undertook a small-scale evaluation through a set of detailed case studies of CRADAs covering an array of different technological areas and linking this laboratory with firms that varied in size and industrial sector.

Our research suggests that the reliance within CRADAs on stronger IPRs *could not overcome the detrimental consequences of the laboratory's incentive environment for R&D collaboration with industry.* In several of the CRADAs examined in this research, the negotiation of these IPRs became a source of friction and slowed the completion of CRADA negotiations. Subsidies that were made available by the DOE to the public laboratory personnel undertaking these agreements with private firms created incentives for at least some laboratory personnel to exaggerate the technical capabilities of the laboratory and the benefits of collaboration for the private firms.

A number of the industrial participants in the CRADAs operated by this laboratory were small and medium-size enterprises with limited in-house technical resources to specify and define their technological needs and the scope of the collaborative project. Their limited in-house technical resources also made it difficult for a number of these firms to "absorb" and apply within the firm the results of the collaborative research. For their part, many of the laboratory personnel had worked primarily on defence projects and were not

familiar with the cost and operating environment of private firms. Other administrative and funding problems stemmed from the high cost of DOE laboratory time, which limited the ability of industrial collaborators to obtain sufficient time from laboratory personnel. Laboratory budgetary policies also forced the termination of other projects very quickly at their scheduled date of completion, undercutting the transfer and implementation of the results of these projects.

Overall, therefore, the heavy emphasis within the CRADA mechanism on IPRs seems to have had negative consequences for public-private collaboration in a number of instances. Moreover, the complex incentives of laboratory personnel, which were affected by both the availability of public subsidies for CRADAs and by the weaker (by comparison with universities) inter-laboratory competition for resources and prestige, tended to further undercut the effectiveness of this particular instrument for public-private R&D collaboration. DOE laboratories have instituted a number of changes in CRADA policies and practices since these case studies were completed, but the CRADA policy instrument still has not been the focus of a systematic, rigorous review spanning all federal agencies that could support broader findings and reforms in its operation.

Conclusions

What conclusions emerge from this brief survey of more than 100 years of policy and industrial development in the United States? And how relevant are these conclusions for the experience of today's developing economies? The examination of the development of United States competition policy highlighted the close and complex interaction among competition policy, IPRs, the restructuring of large United States corporations, and the growth of organized industrial research that characterized the 1890-1920 period. Turning to the post-1945 period of United States industrial and technological development, the "weak IPR/strong competition policy" environment characteristic of this period had important implications for the development of the United States semiconductor, computer hardware, computer software, and computer networking industries (including the Internet). In all of these nascent industries, the combination of relatively weak patents, many of which were liberally cross-licensed among firms, and stringent competition policies (which on occasion mandated the liberal licensing by dominant firms of their patents) tended to favour entry, the exploration of numerous alternative approaches to technology commercialization, and had long-lasting effects on the structure of all of these industries.

The evidence on the evolution of United States patent policy also suggests that counting patents is not a useful approach to the evaluation of innovative performance, despite the fact that many United States universities cite the

number of patents that they have obtained as a key index of their innovative performance. The issue of "quality control" in the review and issue of patents, especially in new technical areas, now is the focus of considerable debate in the "strong IPR" era that the United States has entered since the 1980s. Are patents now being issued with too little assessment of their novelty and non-obviousness? This issue is a major challenge for a broader cross-section of developed and developing nations. In addition, initiatives in IPR policies should not be undertaken by governments without serious consideration of the need for complementary policies in competition policy. The United States experience clearly highlights the close relationship between these two policy instruments. And the welfare consequences of strong or weak IPR policies may be enhanced or offset by the development and enforcement of well-informed competition policies.

How have IPRs encouraged or discouraged public-private R&D collaboration during the "strong IPR regime" characteristics of the United States since the 1980s? The summary of United States experience with the Bayh-Dole Act and Cooperative Research and Development Agreements suggests that the underlying incentives that are created by strong competition (or its absence) among R&D performers (be these universities, firms, or public laboratories) may well be more important than strong IPRs in encouraging effective public-private R&D collaboration. Indeed, in the absence of such "structural incentives" for inter-institutional collaboration, stronger IPRs may discourage collaboration. Indeed, in some technology fields, university-industry R&D collaboration have become more difficult since the inception of the "strong IPR regime" associated with the Bayh-Dole Act and related developments since 1980.

Overall, our review supports the importance of competition within R&D systems. Competition among sources of R&D funding (including competition among public sources of R&D funding); competition among the performers of that R&D, be they universities, firms, public laboratories, or firms; and competition among the entities, in most cases firms that seek to commercialize the results of this R&D supports stronger performance in national R&D systems. Competition is an important catalyst for the kinds of R&D collaboration among different sectors of national R&D systems that can prove very beneficial. At the same, it is important to keep in mind that effective R&D collaboration and technology transfer involve a broader array of channels than just patenting and licensing. The diversity and interdependence among different channels for knowledge flow and technology transfer is essential in the design and evaluation of policies to strengthen public-private R&D collaboration.

One area in which the United States experience may be less relevant to the challenges faced by many developing economies, especially small developing economies, is the importance of scale as a necessary condition to support competition and diversity within a national R&D system. Obviously, pluralism and competition are more easily sustained in a large economy such as that

of the United States that supports a large public and private R&D budget. A key policy challenge, therefore, is creating the necessary scale within R&D systems to support pluralism and structural competition or inter-institutional competition. Cross-border collaboration is one possibility—the European Union now is able to support higher levels of competition among R&D performers within the expanded regional R&D system produced by expansion (Garcia-Fontes and Geuna, 1999).

Similar cross-border collaboration and competition among the national R&D institutions of mid-size or even large developing economies could support a more competitive environment for the R&D performers in these economies, with potentially significant benefits for the innovative performance of all national participants. Needless to say, the creation of such cross-border collaborative schemes is a difficult task, but it and other initiatives that seek to complement IPRs with competition policies deserve attention in the evolving development agenda.

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Comments and Avenues of Enquiry

Competition law and liberalized imports

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You know a competition law has to be in place. It is one of the instruments, one of the institutions that we must have to ensure that the market is really open. And we need it properly regulated to ensure that it is also properly practised. But all the countries are now saying that we have a competition law in our country which restricts and inhibits the growth of our industry, because the competition law ensures that there can be a dominant position in a particular industry.

But at the same time, because of globalization and the WTO, you can import virtually anything into your country. So what you are really saying is that the competition law restricts the growth of a company in a given territory, but at the same time allows free import of anything from other countries where the competition law does not exist. What you are really doing is not allowing your company to grow naturally, and in the process creating unfair conditions for your own companies in your country. So now in this twenty-first century will the competition law actually serve the purpose for which it has been so useful in the last century?

Influence of the United States Land-Grant universities

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I was interested in knowing how the establishment of the United States Land-Grant universities have impacted R&D in the food industry because that predates the Sherman Act, because the Morrill Act of 1862 established those universities of Illinois. Berkeley and others have benefited and this has helped the food industry. I think that is where you see some of the fundamental impacts of this industry-university linkage.

One reason why I want to look at the Land-Grant influence, is that it has been a bone of contention with the European Union that, in fact, the United States has subsidized agriculture and the food industry through this extensive array of research that is subsidized. I was at the University of Illinois and teaching at Michigan State: we benefited from State and Federal funding for research, we benefited the food industry and that has had impact.

Regarding the Sherman Act, in the late 1970s and in the 1980s, there was a lot of research by work people like Bruce Marion to back the many congressional hearings on industrial organization theory. Then you also had the evolution of the Stock Shock Performance paradigm, which influenced industry performance, advocating that you look not only at pricing policy but also at other impacts of industrial organization on food safety and food quality. I have a feeling this had a fundamental impact on some of the IPRs that evolved later.

For me, the history of the United States demonstrates that for developing countries, research and development, and technology commercialization must have a lot of state support. It cannot be done otherwise to minimize the risks of adopting new technology. If you go back to the 1862 period with the Land-Grant University, you find that a lot of subsidies went into minimizing the risks for industry to pick up new food technology.

Following on from the point made by Suresh Prabhu, in Africa, you have many problems, not only with competition policy but also with the lack of anti-dumping policies. That has an impact. In Nigeria, we had over one hundred and something textile mills in the north. Most of them are now closed, but the real problem is that people take the new designs, because that is intellectual property, go elsewhere, print them and keep them. No anti-dumping policies. So I wonder how some of these problems been dealt with in the United States.

Then there is the question of incentives. Within universities, how has the United States dealt with the sharing of royalties—say, between faculty and the university? Similarly, the sharing of royalties in laboratories where the government has subsidized their construction and maintenance. I think this also shows the key role that government can play in technology commercialization.

Main lesson: the benefits of IPR have been overstated

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The main thing I have learnt, which I think is very important, is that the importance of IPRs as such, even for innovation in rich countries, may have

been overstated. And the point that the really effective regime is one with a very tough competition policy and not such a tough IPRs regime is a very important one in the context of international negotiations on TRIPS.

A recently published report of an independent World Commission on Intellectual Property Rights which DFID funded and provided a Secretariat for, which I think is the state-of-the-art statement on the relationship between IPR and development, has one central message: that the benefits of IPR for development depend very much on the degree to which the country concerned has got the capacity to generate research itself. The more you are a producer of research, the more beneficial IPRs are likely to be to your development. Conversely, the less you are likely to be a producer of research, as is the case in least developed countries, the less helpful are IPRs likely to be.

What this report calls for is a much more nicely graduated system of IPRs that reflects the potential costs and benefits for development for countries at different stages of development. And as I say, the striking lesson from David Mowery's presentation is that even at the top end, in the United States, the benefits may have been overstated.

The challenge of securing technology transfer

MANSOUR CAMA
President
National Confederation of Employers of Senegal

What you have been doing in the United States was very interesting, and somehow made me feel as if I were from another planet. I would like to find a link with what we could consider, coming from a continent like Africa and from a country like Senegal. Ultimately we are concerned with the technology transfer behind the IPR, and I think that in competition policy we have this problem of technology transfer. With what we see and what is announced in the framework of the WTO negotiation and all about the TRIPS. It seems that you are condemned as developing countries to get low-cost and low-quality technology when we pretend to build our industrial development. And this issue is very important for us. In R&D, be it European or American, things are going very fast, but in our countries we are very slow in moving on this issue.

We are now on worldwide production, but how can we say that we will be able to be a part of this world chain of production if we do not move in R&D, if we do not move in the training of our people to be ready to catch up with all that is coming. We have cooperation between universities, through the Internet and other means of communication but once again, I will address the capacity of our government, to sustain R&D, even if it is at the low-cost

end, in the company or in the private sector. It will be the same when we get to the negotiations. As I have said earlier, it is very important to consider that the framework of the development now of our countries is definitely that of the trade negotiations. So what we have heard is very interesting and very important, but I really wonder how we could take good lessons from what was done and move them to our countries.

When we talk about the competition policy, one thing is to be in your country with that policy to be defined but we, as exporters, as the private sector, also wonder about international competition policy. How could we address this issue when we know that behind many companies, the governments are supporting their products when they are exported. Once again, it seems that we in developing countries are not on the train, we are left on the track.

Dumping is killing development and wealth-creating ability

A. I. OLADAPO
Director
Planning, Research and Statistics Department
Federal Ministry of Industry
Nigeria

As we discuss the issue of productivity growth, I think we should consider the cost of doing business in developing countries, particularly in Africa. In most countries in our region, the lack of reliable chains of supply and inefficiencies in all the public utilities seriously affects productivity and capacity utilization in industry. While we recognize that economic reforms including privatization and market liberalization are necessary for economic growth, our countries continue to suffer from our fear of the dumping of products in our markets.

Dumping is killing industrial development and our ability to create wealth. In Nigeria, for instance, over 70% of our textile mills have closed down since we liberalized in 1997; 45% of our leather tanneries have been closed down and the remaining ones are producing at less than 40% capacity utilization. Meanwhile, our countries have become the largest markets for used clothing and used shoes. So as African countries, asked to open their markets, we must look at anti-dumping policies and competition policies—and the need, we know, to strengthen our standards organizations for effective monitoring.

The importance of having a coherent and consistent policy and environment is critical to sustainable industrial development. However, our public

administrations lack the technical capacity to undertaken effective analysis at the sector and subsector levels, to identify the real issues of interest for the private sector or develop key strategies to help us engage in global markets. Therefore, capacity-building and institutional reforms will be very important for ensuring economic transformation in our countries.

Finally, our country believes strongly in the need for debt relief to ensure that our countries can invest in development. Our country pays $3 billion every year towards debt. These are funds that could have built more schools, more hospitals and industries to create jobs. Our President is leading the fight for debt relief for all African countries. We also believe that the ultimate responsibility for development belongs to us as Africans.

Response: policy evolves as economy and technology mature

DAVID MOWERY

One of the points that I was trying to get across is that I think United States history suggests first that, IPR policy has evolved in response to the country's economic and technological development. I think it is not a coincidence that, through most of the nineteenth century, the United States IPR policy, domestically and obviously globally, was very weak. In both patents and copyright the United States had a reputation as a copier. It is as the United States began to mature technologically and economically in the late nineteenth century that you see changes within both the copyright and patent area. But then again, even in the course of the twentieth century, you see a significant ebb and flow of IPR policy.

Therefore I think it is correct to say that the evidence, at least from the United States, of a sort of a black-and-white economic development that is sometimes cited by policy makers and others is, in fact, not there. It is more mixed. It is a more complex story. One of the particular conclusions one can draw from the development of high-technology industries in the United States is that, particularly in the early stages, as a matter of policy, it is probably wise for patent offices and others to try to tilt towards narrowly rather than broadly defined patent rights—that in some sense very broad patents early on in the development of these industries may, in fact, discourage the pluralism and cross-fertilization that are extremely valuable.

Another point to make is that, because IPR policy have such different effects in different technological fields, it is difficult to believe the kind of one-size-fits-all policy recommendations that sometimes come out. I think one needs to adopt a more nuanced understanding of the effects and the costs and benefits of these policies.

Trade and anti-trust policies

The question of the interaction between trade and anti-trust policy is interesting. Here again, the Sherman Act really was, in part, an outgrowth of the high-tariff regime that characterized the United States in the late nineteenth century. I think again it is not a coincidence that a public demand for a tougher anti-trust policy followed within about 15 years of the erection of essentially prohibitive tariffs on imports in a number of key industries. So there is a complex political interaction between the liberalization or lack of same in the trade regime and domestic anti-trust policy, and arguably open markets can, at least from a consumer point of view, accomplish some of the goals of competition policy. At the same time, I think that if one adopts a stronger domestic IPR regime then it is extremely important to couple that with a more stringent or at least a more carefully reasoned and implemented competition policy.

How much does the United States spend on R&D? About 2.5%. There have been efforts to push it up to three, but it is between 2.5 and 3%.

Biomedical patents and small firms as commercializers

This is an area where United States universities have obviously concentrated a great deal of their patenting and an area in which many of the licencees have been small firms, indeed have been small-firm start-ups, founded by faculty. But what happens in many cases is the small-firm licencees take on the task of pushing the development of this molecule or that patent one or two stages, and then licence that in turn to a large pharmaceutical firm capable of taking it through clinical trials and marketing it. So we have an increasingly complex and highly differentiated pattern of vertical specialization where there is the university as a small firm and then the commercializers. You do have small firms playing that last role, but they are not necessarily taking on the entire burden of commercializing, and in many cases they have found it very difficult to do that.

Land Grants and other State funding

The role of Land Grants in the United States is obviously a very important one. Indeed the Land-Grant universities are among the most important institutions because of their political and financial dependence on local sources of support. And not just in agriculture, but in industry as well: they have been some of the most aggressive collaborators with industry. The University of

Illinois had engineering experiment stations as well as agricultural experiment stations at the turn of the century. You cannot describe United States technological development, certainly during the post-war period, as a phenomenon that was propelled solely by private initiative and by private funding. The Land Grants were part of that. The defence budget was a large part of that as well. And, most recently, the National Institutes of Health, the source of biomedical research funding, have played an enormously important role in expanding that red wedge on one of my figures revealing the share of biomedical patents.

Now the magnitude of State funding is important, but the structure of that public support and public funding is also very important. By and large, though not entirely, National Institutes of Health's (NIH) very large grant budget has been administered through extramural performers. It goes outside the agency, largely to universities, and they compete with one another very fiercely to get that money. The National Institutes of Health is a very interesting agency because it has succeeded in promoting a huge growth in its budget, in a highly politicized atmosphere, which typically requires close attention to redistributive goals (that every member of Congress have one in their district). The NIH has somehow been able to balance that with maintaining excellence and competition in their grants and their research performance.

Similarly the Defense Department was interested in competition for R&D grants, and procurement contracts, and particularly in both giving procurement contracts to new firms, not to established ones, and also mandating in many cases that those firms license technology between one another (because of the concern of the generals in the Pentagon that they not be dependent on a new firm for a critical input). State support is very, very important. It is critical. But the structure of that State support is extremely important in understanding its effects on commercial as well as broader innovation in the United States.

Royalty sharing

Finally, the sharing of royalties. This is an important issue and under the terms of the Bayh-Dole Act, a faculty shares royalties from licensing with their universities in most cases, although the Act does not mandate a specific percentage. One of the interesting features of the Bayh-Dole Act is that it leaves many of the details of implementation to individual universities. It is very flexible. At the same time as it conveys the very strong political message that "thou shalt be allowed to license," it does not dictate details or specific policies beyond very high-level goals . This has the advantage of being very compatible with the very heterogeneous institutional landscape of the United States university system.

Chapter 9

Cradle-to-Cradle Design: Redesigning the Relationships between Industry and Nature

MICHAEL BRAUNGART
McDonough Braungart Design Chemistry
Co-founder

> We need three new design criteria for the next industrial revolution. These are: ecological intelligence, justice and fun. We must ask ourselves: *(a)* Is the product ecologically intelligent? This is no longer about ethics, it is about quality; *(b)* Is it fair; can people earn a decent income from it; does the process cause no harm to the workers? And *(c)* Is it fun? Do we enjoy it? If it is not fun, it is better that we do not make it: life is too short.
>
> We must seek eco-effectiveness. There is a difference between efficiency and effectiveness. Efficiency is doing things right; you do something and you do it right. Effectiveness is doing the right thing.

Traditional environmental thinking is about how to reduce something in order to make it less negative. I am 100% bad: how can I come to be only 90% bad? What I am proposing is exactly the opposite: I am talking, not about minimizing the ecological footprint, but about making the ecological footprint supportive of other animals on this planet. Let us have a big footprint but make it a productive wetland. These theses have become pretty popular in the United States, which has to do with the fact that traditional environmental protection would not work from a United States perspective. If energy consumption in the United States is twice what it is in Europe, then who cares if they reduce 10%? It changes nothing.

The "Cradle to Cradle" idea sets itself up against traditional Western-world thinking about cradle-to-grave in linear systems. We talking about "Cradle to Cradle", which means far more of an African and Asian perspective than a Western one. This thinking comes from two years of travelling in the early 1990s, when I got support from a big Swiss organization to learn about sustainability and what is stability and chaos. An example: if I were to ask you, "How is your relationship with your partner in life?" and you answered, "Oh,

sustainable", I would say, "Oh, I am so sorry for you." So should we really talk about sustainable development? Sustainability is not enough: it is just a minimum, but it is not what we really want to do.

Cradle-to-cradle thinking has changed the agenda in an original manner. We say that human beings are the only animals on this planet which produce waste, while all the others produce materials which go back into cycles to support the next generations of life.

A model: behaving like ants

Take, for example, the matter of world population growth. There is no over-population problem if we behave just like ants. The biomass of ants on this planet is about four times greater than that of human beings, yet they are not an environmental problem because every material flow supports another animal. Consider a community of ants. As part of their daily activity, they:

- ❑ Safely and effectively handle their own material wastes and those of other species.
- ❑ Grow and harvest their own food while nurturing the ecosystem of which they are a part.
- ❑ Construct houses, farms, dumps, cemeteries, living quarters, and food-storage facilities from materials that can be truly recycled.
- ❑ Create disinfectants and medicines that are healthy, safe, and biodegradable,
- ❑ Maintain soil health for the entire planet.

Individually we are much larger than ants, but collectively their biomass exceeds ours. Just as there is almost no corner of the globe untouched by human presence, there is almost no land habitat, from harsh desert to inner city, untouched by some species of ant. They are a good example of a population whose density and productiveness are not a problem for the rest of the world, because everything they make and use returns to the cradle-to-cradle cycles of nature.

All their materials are biodegradable, and when they return to the soil, they supply nutrients, restoring in the process some of those that were taken to support the colony. Ants also recycle the wastes of other species; leaf-cutter ants, for example, collect decomposing matter from the Earth's surface, carry it down into their colonies, and use it to feed the fungus gardens that they grow underground for food. During their movements and activities, they transport minerals to upper layers of soil, where plant

life and fungi can use them as nutrients. They turn and aerate the soil and make passageways for water drainage, playing a vital role in maintaining soil fecundity and health.

They truly are, as biologist E. O. Wilson has pointed out, the little things that run the world. But although they may run the world, they do not overrun it. They make the world a better place. We are just too stupid: we take materials from nature and then we put them in landfills or in incinerators. And if we do this, even 200 million are too many, but if we behave like ants, then we could have a population of about 60 billion people. If you look at the relative calorie consumption of ants compared to that of human beings, it is equivalent to about 60 billion people on this planet.

What the ants do is just following fundamental design principles:

- ❑ Waste equals food.
- ❑ Use current solar income.
- ❑ Celebrate diversity.

I have been working in China for pretty long and have grown accustomed to the fact that, in the countryside, if you are invited for dinner, people expect you to stay until you use the toilet—because they want to have some nutrients back. Otherwise, it is just unfriendly to steal nutrients. This helps explain how the Chinese culture could exist for thousand of years with a population density higher, in its key areas, than in the Netherlands, without having an overpopulation problem. The Chinese only needed to learn first how to deal with medicine so there is no transfer of pathogens, so that the population does not permanently spread infections. Secondly, they needed to learn to support diversity, because then they could use all the different niches.

You can see this by looking at the Chinese menu. We in the West just eat steaks or other "main" dishes, but the Chinese have all different types of food because they process all different types of species. Otherwise they would not get the protein back from nature. If, for example, you do not think about eating insects, then that protein would just fly away. Then you need to go to find your protein somewhere else. For thousand of years the Chinese have been processing nutrients back into cycles.

I have been talking about biological nutrients. The same thinking applies to the technical nutrients as well. The thinking behind this is that all waste becomes food for the next process, whether in a technical cycle or a biological one.

We talk about energy crises, but have in excess of 5,000 times more energy income on this planet than we currently use. We are just too stupid to make use of this: the use of solar income is crucial. And we need to celebrate diversity, not just respect it or tolerate it: we need to support it actively because otherwise we lose the rich variety of cultures and identities as well.

New design criteria

The traditional design criteria, those of the first industrial revolution, are cost, performance, and aesthetics. The three basic questions are: Can I afford it? Does it work? Do I like it?

Yet products designed according to these criteria can frequently be harmful. Let us take two examples. The first is a simple child's swimming armlet. A child using it only wants to swim safely. If we submit the armlet to highly sensitive gas chromatography we see that what it gets, in addition, is a large number of emissions from organic chemicals (figure IX.1). The second is a casual shoe; it is meant to provide comfort, but the same kind of test also reveals an array of gaseous emissions.

It is not hard to conclude that we need to add some other design criteria, which we could call the design criteria for the next industrial revolution. These are: ecological intelligence, justice and fun.

- Is the product ecologically intelligent? This is no longer about ethics, it is just about quality. If I am sure to get a skin irritation from it, it is not so much an evil, immoral thing, as simply a bad product.
- Is it fair? Can people earn a decent income from it? Does the process cause no harm to the workers?
- Is it fun? Do we enjoy it? If it is not fun, it is better that we do not make it: life is too short.

There are essentially two metabolisms within which materials flow as healthy nutrients.

One is the *biological metabolism*—the cyclical processes of nature. The other, the *technical metabolism*, is a model for industrial systems that circulate valuable materials in a closed loop of production, use, recovery and reproduction. Within both the biological and technical metabolisms, the flow of nutrients (materials) brings healthy productivity throughout the cycles. Cradle-to-Cradle design employs materials that flow safely in one or the other of these discrete metabolisms. (figure IX.2).

So we talk about *biological nutrient cycles* and about *technical nutrient cycles*: everything becomes a nutrient. Everything that is consumed, like a shoe sole, or food, or detergents, must be designed to go back into a biological nutrient cycle. Right now, I can tell you that your shoes, for example, contain about 2% of lead because they are not designed for consumption, rather they are designed to be cheap—not good for the environment and not good for human health. If you look at brake pads in Europe now, made by companies like Volkswagen or Ford, they just replaced the asbestos with antimony, so now you breathe the antimony dust. This creates a lot of jobs, because people get sick from that, so you can cure them—but this is not the type of jobs which we actually want.

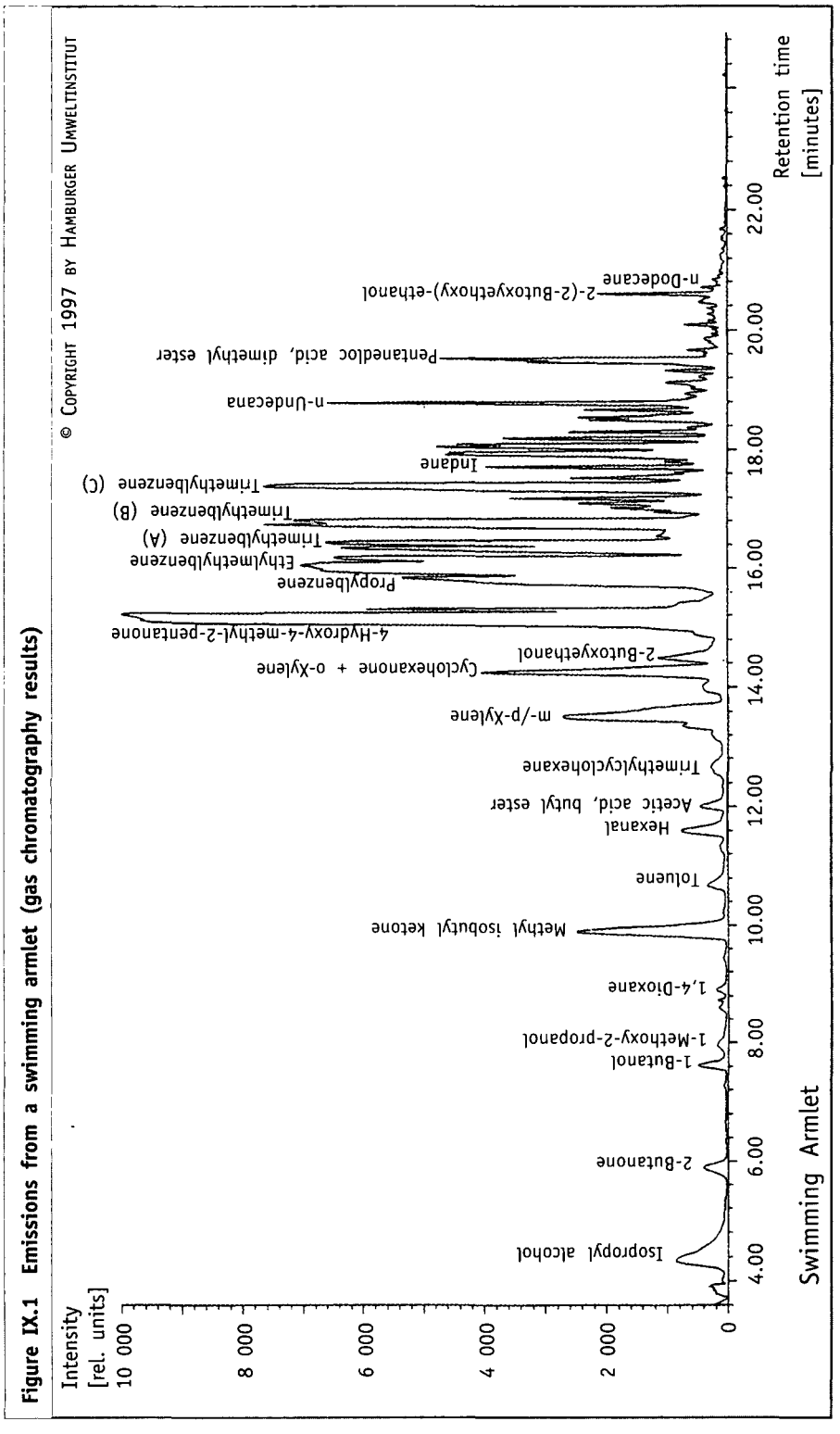
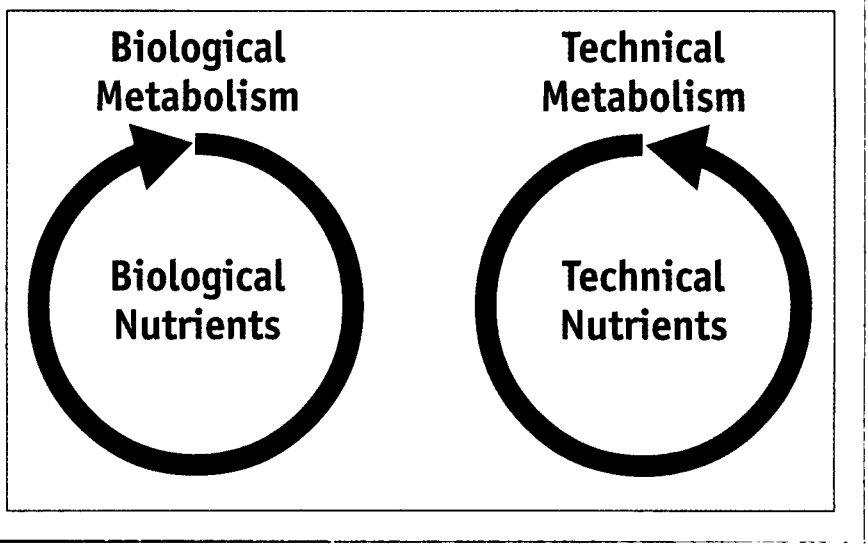


Figure IX.1 Emissions from a swimming armlet (gas chromatography results)

Figure IX.2 Metabolisms



Our focus is everything that is consumed; everything which is actually used up by being used. We always talk about consumers but nobody consumes a TV set; you do not eat your TV set. Maybe if your favourite soccer team does not win, you might feel like biting it, but normally you do not consume it. Equally, nobody consumes a car. The only parts which are consumed are the tyres and the brake pads, but the rest of it is not consumed.

Things which are consumed need to go back into biological cycles. Things which are just used as service products are designed to be technical nutrients.

For example, if you buy a washing machine, you do not want to *own* a washing machine, you only want to *use* it. So we build it. We proposed a washing machine that is now being tested in the Swedish market—where you just sell 3,000 washing cycles instead of selling the washing machine itself. This makes sense because who wants to own 60 different types of plastics? Who wants to own a piece of hazardous waste?

We analysed TV sets. A TV set contains 4,360 different chemicals. Do you really want to own 4,360 chemicals? Instead you just buy what you want. So you pay per view, pay per wash and you buy the insurance of using that TV set so the material becomes a technical nutrient.

And there is a project which we would like to show you in 2003, the year of Ford's 100th anniversary. Henry Ford, as you know, was the father of assembly lines. Bill Ford, his heir now in charge of Ford Motor Co, will be the father of the *disassembly* lines. You no longer sell the car, you sell 60,000 miles of use of the car: even the gasoline and insurance are included. Everything in this car becomes a nutrient.

With this approach we need to have totally new types of economic models. That is why I have taken over a Professorship at the Darden Graduate School of Business Administration at the University of Virginia, to learn about the economic implications.

In the traditional approach you say, "I'm 100% bad. Let's be less bad." So you start with 100% and you try to reduce, to minimize. We are bad, let us be less bad. That is not an attractive proposition.

If you reach 10%, what do you do next? You have the next 100%, with which you can do the same. The business graph is ugly (figures IX.3 and IX.4). Do you want to have a business which looks like that? If you continue and you reach 10%, then do the same with the next thing, you are being eco-*efficient*. But if you are heading in the wrong direction, it does not help to be efficient. Coming from Germany, a country which was quite efficient in destroying life 60 years ago, I can tell you about efficiency: clearly an inefficient Nazi would have been much better than an efficient one. So efficiency, per se, is not good. If you are doing the wrong thing, it is better if you are inefficient. If, for example, you want to go from Dar-es-Salaam to Johannesburg, it does not help you to go *efficiently* to Paris. That does not make sense.

There is a difference between efficiency and effectiveness. Efficiency is *doing things right*. You do something and you do it right. Effectiveness is *doing the right thing*. But I also want to make it clear that efficiency is ugly per se.

Figure IX.3 Eco efficiency 1

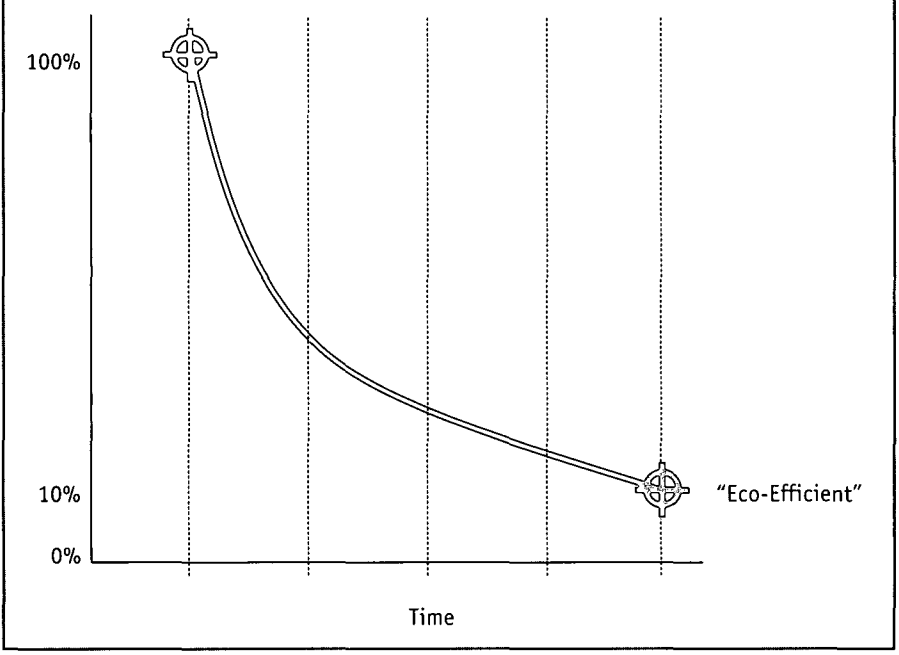
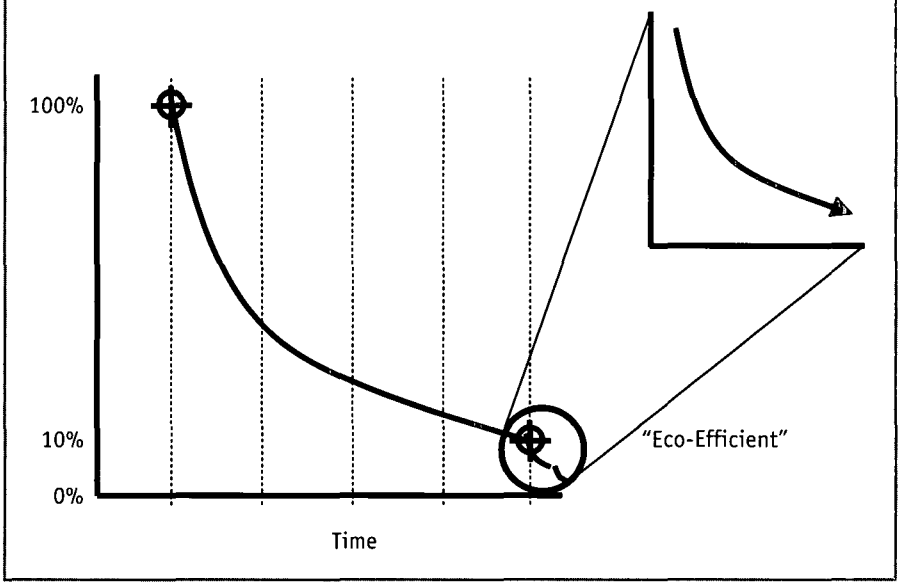


Figure IX.4 Eco efficiency 2

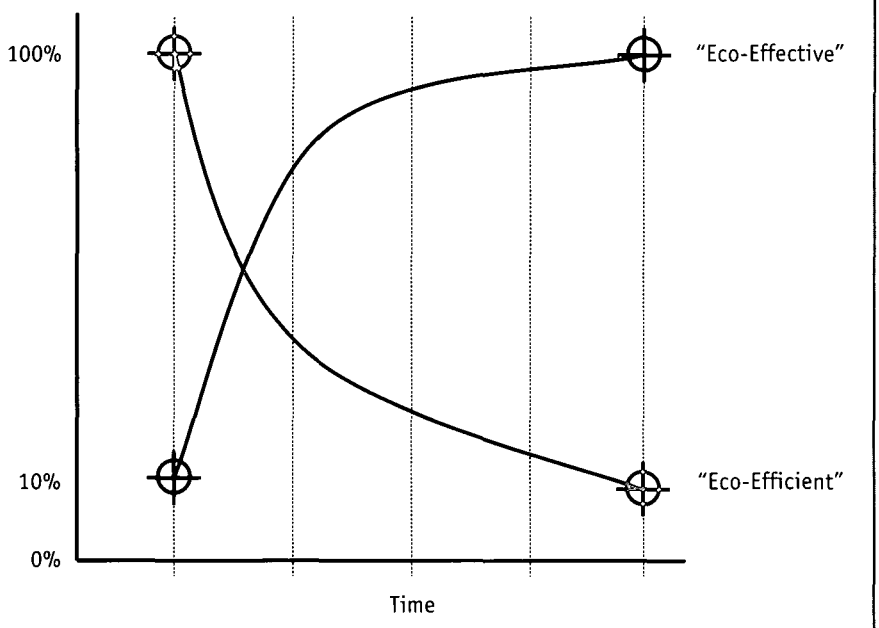


Think about efficiency from a cultural perspective. Think about an efficient Venice. Think about efficient food. Efficient Italian food that a tablet with some Italian flavour and a glass of water. Everything that is really nice and fun in life is not efficient. Everything. Think about Van Gogh or Picasso being efficient. Efficiency is ugly. Efficiency is fast food, as in McDonalds and the like, and it is low-standard.

And nature is not efficient. Think about possibly wanting to have a baby, and consider efficiency in that context. How ugly. Everything that really contributes quality in life is not efficient. Why do you want to be efficient when you talk about ecology? For one baby, you need at least 50 million sperms, otherwise it does not work. Think about how ugly these systems would be if you made them efficient. You would never be happy. It is a northern approach: when it is cold in winter then you do need to reduce, avoid, minimize, etc.—but nature does not work like that.

So what I am talking about is eco-*effectiveness*. Such a system, modelled on the natural world's abundant creativity, can solve rather than alleviate the problems industry currently creates, allowing both business and nature to thrive and grow. Nature in most cases wastes energy and raw materials. Look at as cherry tree in spring, how wasteful. What a waste of all those blossoms for a few cherries. What a waste of energy and raw materials in human terms of eco-efficiency, but nature is highly *effective*. So I talk about eco-effectiveness instead of efficiency (figure IX.5).

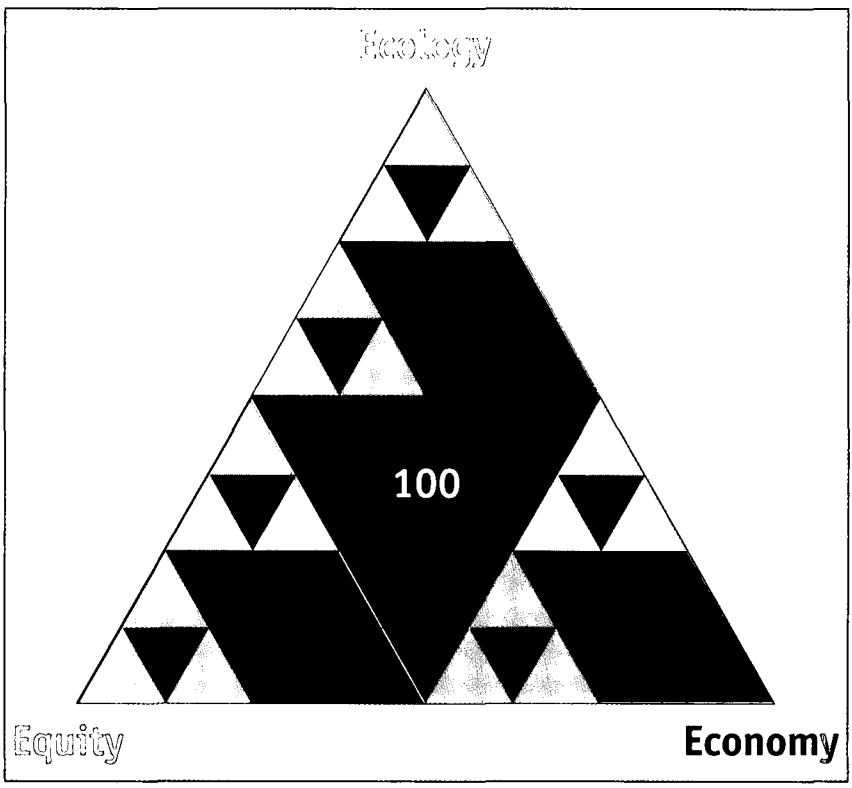
Figure IX.5 Eco-effectiveness



Now you have a positive agenda and this is why it has become so interesting for UNIDO. Now it is no longer this guilt agenda, you can say: "Oh, I reached 10% of what I wanted to reach and the more I do the better I am." "The more I buy as a customer, the quicker the manufacturer can make a change." Then industrial development is no longer a guilt agenda. It is a support agenda. How can we support technical and biological nutrient cycles? You start with 10% and say "hey, what do I need to do to achieve 100%" and then you have a positive agenda instead of a negative one.

We can illustrate the new model with triangles in which ecology, equity and economy are balanced (figure IX.6). This is a big departure from how we originally saw it. In history, we started with capitalism and then, as a counter movement, we had socialism. And as can be seen in the current protests, we will face *ecologism* as well. Capitalism does not work in pure form because, as Henry Ford pointed out, cars cannot buy cars. If you do not give people money to buy the things, then for you it is pointless to produce them. Just as clearly, socialism was never social: if nobody is really in charge of things and has responsibility as an individual, the system does not work. Socialism actually never supported social systems. And an ecologism which says that every animal has the same value and ecology comes first will not support the environment. Not at all, it is just another "ism".

Figure IX.6 Fractal ecology model for a sustaining design



In Western Europe we have agreed on a social market economy in which we seek to balance economy and equity. But we need to include the environment there as well. So it is an ecological and social market economy which is in the centre of the triangle and respects all its three dimensions in there.

Along with the importance of *positively defining the materials* that make up products, eco-effective design includes the *positive design of systems* for maximizing the effectiveness of materials over many product life-cycles. The design of systems for maximizing the perpetual value of materials implies the formation of strategic alliances to coordinate the flow of materials over product life-cycles.

What industry traditionally does is to take, say, the cheapest chemical for each purpose a product is to fulfil. More often than not, you end up with a lot of chemicals just to compensate the negative side-effects of the other chemicals. One of our ventures was to *positively* define the chemicals that should go into a shower gel, and instead of the 20-25 different types of

chemicals you find in traditional shampoos and gels, we came up with a gel that only needs nine chemicals— and not only is it safer, but also about 20% cheaper.

Take the case of the upholstery fabric which the airline Lufthansa, used on its seats. In Europe the mill trimmings from that fabric were declared hazardous waste. The chemical industry has just put in what "works", without regard for health and environment. We shall return to this example.

The traditional approach can be compared to preparing a recipe that is described as being, say, free of cadmium—without pointing out that, instead, it has lead or antimony or whatever. That does not help. It is like trying to comfort someone sentenced to death in the United States by telling them they will not be shot.

What is needed is to define what we put in a product; to choose positively the chemicals and materials which are used. In the case of Lufthansa's upholstery fabric this exercise resulted in getting the same type of product, but much softer—and about 20-30% cheaper, because now the trimmings are no longer hazardous waste and are no longer exported to Southeast Asia or Africa to go into landfills. *Now the trimmings go into gardening to replace peat.* We just use the chemistry, the materials in such a way that they will go into a technical nutrient cycle or a biological nutrient cycle. In this case, as you sit on the fabric, it is actually consumed by being used. So it is a consumption product, which needs to be a biological nutrient.

So when we go back to the chemical industry, we ask them systematically what chemicals can be put into a product, which ones are edible and so forth. In the cases cited, what was used was not primitive chemistry, but high-tech chemistry from Ciba, Bayer, DuPont, and the like. Instead of using the cheapest ones, you use the best—and in addition the overall production becomes much cheaper.

How do we evaluate chemicals? First we make use of the known negative approach. We have look at things we do not want, the X elements, and we draw up an "X filter" to exclude, for instance, those which are known or suspected to be (in humans or animals) carcinogenic, teratogenic, mutagenic or disruptive of the endocrine system.

Then you take a closer look at health hazards, identifying those chemicals which display features such as:

- ❑ Disruption of the immune system
- ❑ Irritation of skin or mucous membranes
- ❑ Carrier function
- ❑ Chronic toxicity
- ❑ Allergenicity
- ❑ Acute toxicity

Then comes the screening for environmentally relevant features:

- ❑ Biodegradation
- ❑ Fish toxicity
- ❑ Daphnia toxicity
- ❑ Algae toxicity
- ❑ Bioaccumulation (log POW)
- ❑ Metabolic pathway
- ❑ Bacteria toxicity
- ❑ Content of halogenated organic compounds
- ❑ Worm toxicity
- ❑ Heavy metal content
- ❑ Persistence

In other words, we conduct a screening of these materials from a new perspective. The question is not whether it is legal or not, but just, "Can I eat it?" or "Can I put it back in a biological system?" So you can get the same product but the production becomes much cheaper by adopting different criteria. The production process is based on criteria such as:

- ❑ Exact knowledge of the composition of inputs
- ❑ Resources (renewable/non-renewable)
- ❑ Transport distance
- ❑ Energy input
- ❑ Social considerations
- ❑ Genetic engineering
- ❑ Dangers posed by intermediates and by-products
- ❑ Animal testing
- ❑ Wastes
- ❑ Climatic relevance (e.g. ozone depletion)

In practical terms, what we do is look at chemicals, evaluate them and summarize the results under four categories: A, B, C and X. A is ideal, B is principally OK but can be optimized, C is tolerable, but X is not acceptable and needs to be phased out (figure IX.7). So we *positively* choose the materials—each chemical, each ingredient— to go back into technical cycles.

Figure IX.7 ABC-X categorization of products

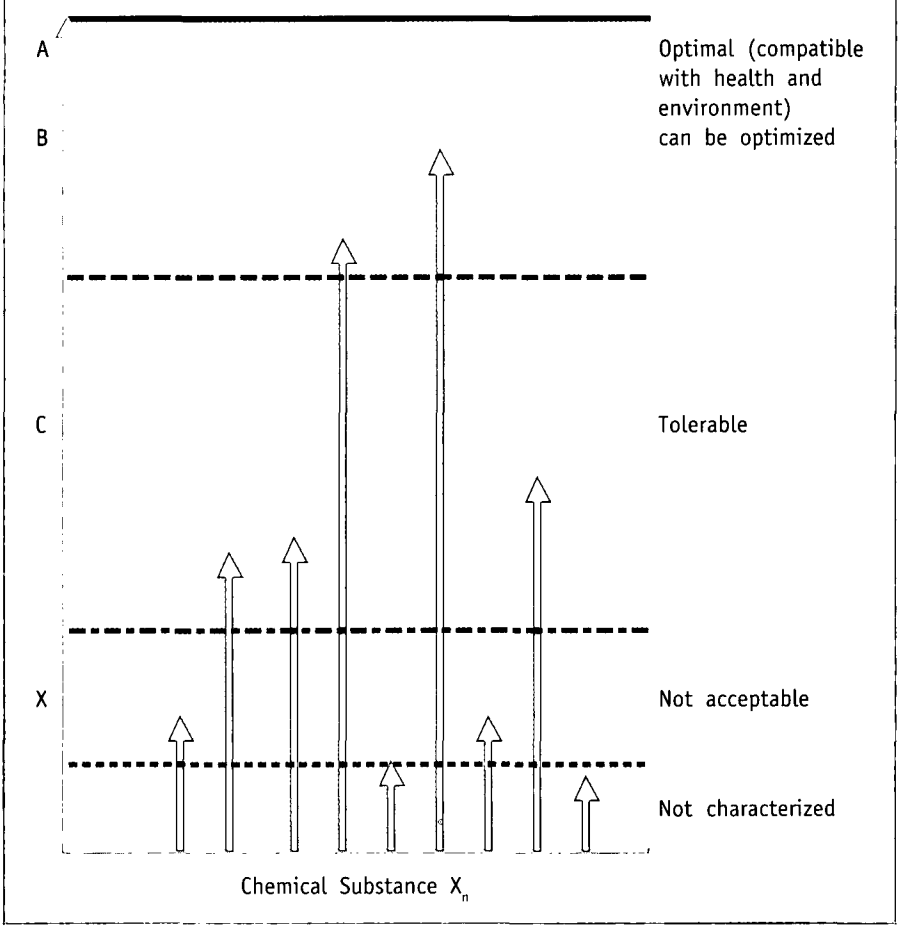


Figure IX.8 illustrates the assessment matrix that is prepared for a fabric, assigning an A, B, C or X for each dye and chemical that goes into its production.

Most of the leading United States companies are working according to these design principles now. One instance is Nike, after I analysed their shoe soles and said that this was toxic waste. We positively choose the chemicals which go in all the Nike products worldwide. Instead of having people in Malaysia wearing masks and building wastewater treatment systems, we positively select the chemicals which go into the products.

Figure IX.8 Sample assessment matrix

Data for the Production of the Designtex William McDonough II Collection

Input	Assessment Summary				Health Hazards												Environmental Relevance											Production								
Material	HH	ER	P	S	AT	SI	IMM	CT	DES	T	C	M	DIS	DRS	S	CF	MP	B/C R	FT	DT	BT	AT	P	B	CHOC	HMC	K	R	T	E	Y	D	EG	W
Wool	B	A	A	A	A	C	C	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A	A	A	C	C	B	A	A	
Ramie	A	A	B	A	A	A	D	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	A	C	C	C	C	A	C
Dye 1	B	C	C	B	A	A	A	E	E	A	A	A	A	A	E	A	D	D	A	E	A	E	D	A	B	B	D	C	A	C	E	D	B	C
Dye 2																																		
Dye 3																																		
Dye 4																																		
Dye 5																																		
Dye 6																																		
Dye 7																																		
Dye 8																																		
Dye 9																																		
Dye 10																																		
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Auxiliary 1																																		
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Auxiliary 12																																		
Auxiliary 13																																		
Auxiliary 14																																		
Auxiliary 15	B	B	C	B	A	A	A	E	E	A	A	A	E	E	D	E	C	D	A	E	A	E	D	A	A	A	B	C	A	C	E	D	B	C
Packaging (PE)	A	B	B	B	A	A	A	A	A	A	A	A	A	A	A	A	C	D	A	A	A	A	D	A	A	A	B	C	C	C	B	C	B	A
Water																																		
Water Source	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Water Use				B																														
Energy																																		
Energy Source	D	C	C	C	D	D	D	D	D	D	D	D	D	D	D	D	D		C	C	C	C	C	C	C	C	D	D	D	D	D	D	D	
Energy Use				B																														
Transportation	B	C	C	C	C	C	C	C	B	C	C	C	B	B	C	C	C		C	C	C	C	C	C	B	B	C	D	D	D	C	C	D	D
Co-Products																																		
Waste Water	B	B	B	B	B	C	C	B	B	A	A	A	B	B	C	B	C		B	B	B	B	C	B	B	B	B	B	B	C	B	B	B	C
Fabric Trimmings	A	A	B	A	A	B	C	A	A	A	A	A	A	A	B	A	A		A	A	A	A	A	A	A	A	A	A	C	C	C	B	B	A
Primary Product																																		
Wool/Ramie Fabric	A	A	B	B	A	B	C	A	A	A	A	A	A	A	B	A	A		A	A	A	A	A	A	A	A	A	B	C	C	C	B	C	B
TOTALS	0.66	0.61	0.41	0.58																														

Input	Total Score	Health Hazards									Env
Material	S	AT	IRR	CT	DES	T	C	M	DIS	A	CF	MI
Material 1	78.36	A	C	A	A	A	A	A	A	C	A	A
Material 2	88.50	A	B	A	A	A	A	A	A	B	A	A
Dye 1	58.36	A	A	C	C	A	A	A	C	C	A	C
Dye 2	58.36	A	A	C	C	A	A	A	C	C	A	C
Dye 3	58.36	A	A	C	C	A	A	A	C	C	A	C
Dye 4	58.36	A	A	C	C	A	A	A	C	C	A	C
Dye 5	58.70	A	A	C	C	A	A	A	C	A	A	C
Dye 6	58.36	A	A	C	C	A	A	A	C	C	A	C
Dye 7	58.36	A	A	C	C	A	A	A	C	C	A	C
Dye 8	58.36	A	A	C	C	A	A	A	C	C	A	C

Nike adopted for its Sustainable Product Design Initiative the following goal: "Develop innovative products that are created and exist in harmony with the natural environment." For us, this is not enough; this is just the Nike position. Our position is that we need to have products which *support* nature because we are too many just to be in harmony with it. We need to support natural systems.

This can be illustrated with the example of an ice cream container, typical of the kind of product which people throw away wherever they happen to be. The traditional response is to say, "Do not litter" or something like that, or propose "waste management". The container could be made from a biodegradable material, which would please traditional environmentalists, but for me that is simply not enough. We have now developed for one of the big companies in the food business, Unilever, an ice cream packaging which is basically a liquid. It is a liquid polymer, a polymer that is a liquid at room temperature. It is only a film when it is in the freezer, when you take it out it is a liquid and it becomes a liquid pretty soon—but that alone is not enough either. So we design the packaging to degrade within hours—but even this is not enough. So we look for seeds of rare plants to be incorporated to the packaging, so that whenever you throw it away, you behave like a songbird: you help to support nature. The packaging now contains seeds of rare plants, so by throwing the packaging away, you support biological diversity. Instead of reducing your negative impact, you support life by throwing something away.

It is common for Germans in Italy to say of the Italians that they lack awareness of environmental problems, because people like to litter. They like to throw things away. And you can see that it is really important to do so, because this is the only way you can get nutrients back into cycles. The northern habit is to collect and to landfill, but then the nutrients disappear, so it is a better option to throw things away and bring them back into cycles. If you look at ancient Roman history, you can see that the Western approach was always to steal nutrients and use them for landfill. The ancient Romans took the nutrients from the farmers and brought them into Rome and then used the leftovers for land-filling. But the farmers around the city of Rome became poorer and poorer so they had to migrate into the city. And you can see the same pattern today in Addis Ababa and Mexico City and others. We are still unable to manage nutrients properly, so the farmers become poorer and poorer.

Today they take artificial fertilizer, and create soil depletion. The natural pattern would be to redistribute the nutrients back so the people can process the nutrients again. But the Romans were too stupid to do so, so they had to expand because they needed to steal the nutrients from further abroad. All of Western civilization has always expanded because of a lack of nutrients. They were unable to process nutrients so the people migrated into the city and then they had to build a military infrastructure to take the nutrients from Sicily,

from all the rest of Europe, etc. When we developed artificial fertilizer, this changed a little bit because we always could add artificial fertilizer—and create a type of agriculture which is not sustainable.

Meanwhile, we do the same with technical nutrients. We take the raw materials from certain countries and we landfill them—or worse. There have been for example, many projects to build waste incinerators in India, in Delhi and Mumbai. And it was called foreign aid support from Denmark and Germany. When the waste did not burn because there was too much water in it, they had to add 30 tons of oil every day to this waste. The only aid support here is for the waste management industry. Instead of processing things back into cycles, what they did was export this end-of-pipe technology.

India is now by far the biggest market for polyethylteraphthalate for PET bottles because all the water and soft drinks like Coca-Cola, is bottled in PET. The PET contains an antimony-trioxide catalyst which remains in the product at a concentration of about half a gram per kilogram. Now in India, the PET Coca-Cola bottles are burnt in households as a fuel. If they use the traditional PET bottle, they poison themselves because the antimony-trioxide is a strong carcinogen and people inhale it.

If you think about this from a nutrient perspective, you look to change the catalyst. And there is alternative, the C94 catalyst, which works just as well. With this you can have PET bottles which can be a nutrient, which can be used as a fuel and which do not poison people.

I went to Coca-Cola in Atlanta and asked them how they could sell their product in India in bottles which contained antimony, particularly as traces of antimony could even be found in the Coca-Cola as well, exceeding in some samples the drinking-water levels which we have in Europe. They replied that they knew that, "but we are not selling drinking water." Because Coca-Cola was not drinking water, they did not need to respect the drinking-water levels for antimony in their product. Now, however, they are working on this and hopefully in the next two years there will be PET bottles in India which do not contain antimony but a titanium catalyst instead.

Packaging and content

From a nutrient perspective, everything is either packaging or content. A TV set, for example, is nothing other than information and entertainment packaging. A newspaper or a book is nothing other than information packaging. A carpet is nothing other than floor packaging. A house is nothing other than secondary human packaging. Textiles are nothing other than primary human packaging. Cars are nothing other than transportation packaging for human beings. Shoes are basically nothing other than feet transport packaging.

We have developed a book printed not on paper but on a composite with plastic on top and at the bottom, and some cellulose in the middle. Paper

consumption in the United States is now 400 kilograms per person per year. If it were just 150 kilograms, there would not be enough trees on this planet pretty soon. But there is no need to use trees for making paper. If the Chinese were to invent paper again today, because instead of leaving behind that ugly gray recycling thing, the plastic book is designed so that you have white paper and can wash out the inks and use the paper again. The first product of this kind is a polypropylene film. The next step will be to make a polymer out of a renewable source. And the future quality will be that it feels exactly like paper.

The Nike case

Let us return to the Nike example, where we produced positive lists for polymers, for rubber chemicals, for additives and pigments, dyestuffs, solvents, and leather. Let us take a look at rubber: We identify the following problems:

- ❑ Carcinogenicity and acute toxicity of rubber chemicals.
- ❑ Sensitization potential of rubber chemicals, especially vulcanization accelerators during production and use of rubber products.
- ❑ Formation of highly carcinogenic N-Nitrosamines from secondary aliphatic amines in rubber rooms.

So if you recycle existing rubber chemicals, then you end up with hazardous waste.

Finding a solution demanded screening and assessing 500 rubber chemicals and the confection of a positive "P-list", an alternative list and a banned "X-list". Next, the development of new product formulations based on the P- and alternative lists.

Cradle-to-cradle redesign means that you think about the next use of the product. When we started with Nike, workers were exposed to hazardous chemicals, and rubber soles were abraded and accumulated in the environment. Following the introduction of cradle-to-cradle redesign:

- ❑ Workers handle only non-toxic materials.
- ❑ Abraded rubber soles are formulated with the intention of serving as biological nutrients.
- ❑ Customers benefit from a higher-quality product.
- ❑ Nike eliminates certain environmental liabilities.

Additionally, there is no more need for end-of-pipe technology: you do not need all the waste management activity that characterized the previous model. What will be done with these products is that there will be deposit on

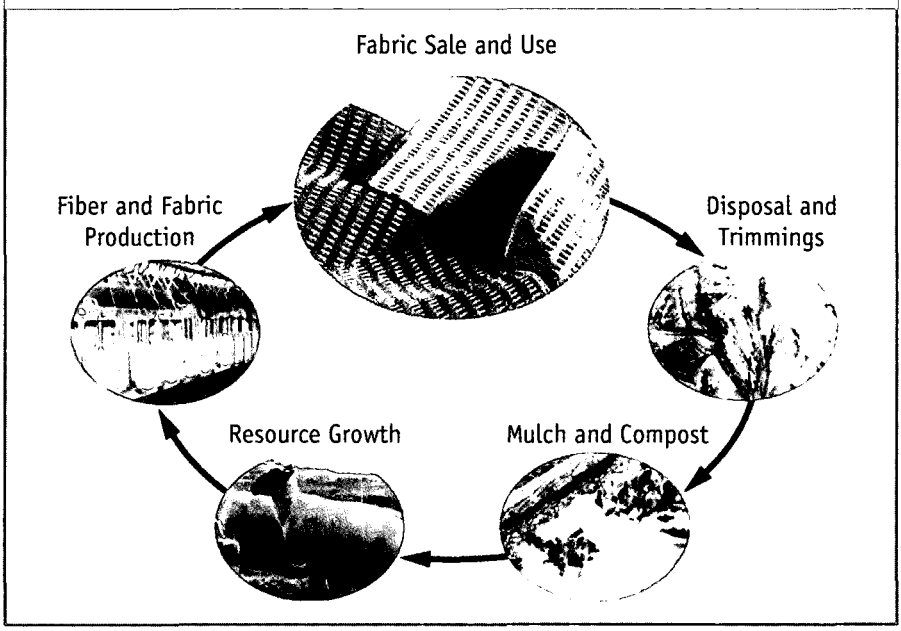
your shoes in; when they are worn out you give them back and recover your deposit. They do not end in the environment anymore. So Nike itself eliminates environmental liabilities as well as those regarding occupational health.

Lufthansa's upholstery

Let us return to my earlier example of the upholstery fabric which Lufthansa used to use, whose mill trimmings were declared hazardous waste. This has been replaced by the Climatex Lifecycle Safely Compostable Upholstery Fabric, which instead of becoming hazardous waste, becomes gardening mulch. As you may know, 50% of all the wastewater problems in the world are created through the textile industry, so this is a real revolution, based on creating a system that does not need end-of-pipe techniques anymore. What is created is a biological nutrient product because it is consumed by being used. Figure IX.9 illustrates the cycle which emerges.

Before cradle-to-cradle redesign the workers had to handle hazardous materials. An interesting feature of the change is that it demanded negotiations with the German trade unions, because at first they were against this project. Why? Because they wanted to retain the bonuses for their workers for working with carcinogens. In Germany you get a bonus if you work with a carcinogen and so they wanted to have the bonus instead of the healthy chemicals.

Figure IX.9 Climatex Lifecycle: biological metabolism



After cradle-to-cradle redesign, workers handle only non-toxic material, the trimmings are used as mulch by local gardeners, customers benefit from a higher-quality product, and the textile mill eliminates certain environmental liabilities.

The PET bottles in India

I referred earlier to the problem of the PET bottles in India. There is also a secondary problem. The sportswear industry is increasingly using recycled, or downcycled, post-consumer fibres; PET plastic soda bottles for fleece textiles. But is this stuff designed to wear against your skin? Various eluation tests on different PET bottles revealed that antimony threshold values in part exceed the European Commission's value of 5 mg/l for antimony in drinking water. Moreover, eluate tests carried out by the Institute for Applied Chemistry in 1994 on polyester sport jerseys show that the antimony catalyst can be dissolved from the textile with artificial sweat. Most polyester catalyzed with antimony contains an average of 150-200 mg/kg; the Öko-Tex Standard 100 threshold value for antimony is 10 mg/kg (i.e. 10 ppm).

In other words, if you wear a polyester shirt or polyester sportswear, the sweat leaches out the antimony dramatically and it becomes a health hazard.

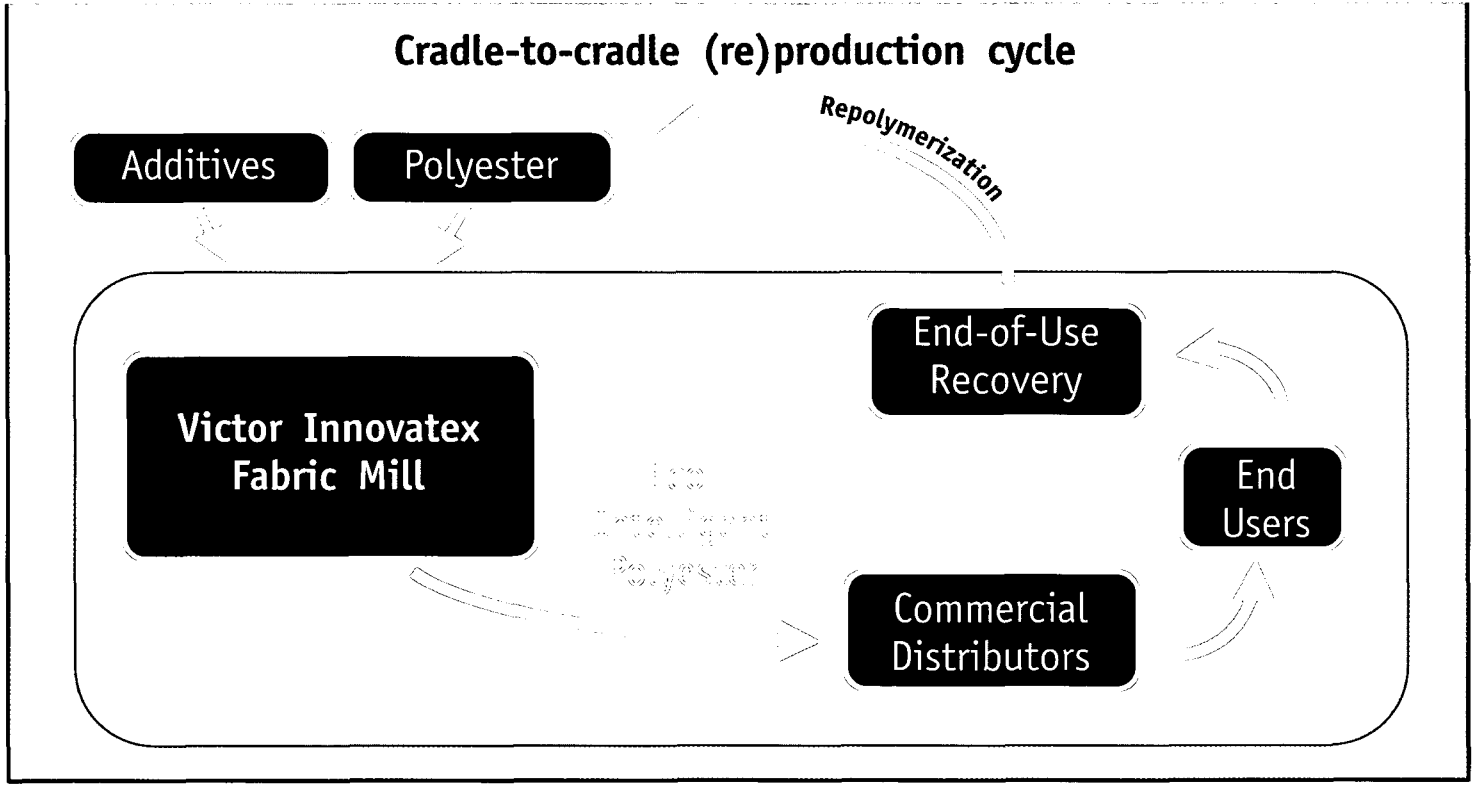
The answer to this was the development of Eco Intelligent Polyester, a new PET fibre made with a titanium-based (not antimony-based) catalyst, with dyes and auxiliary chemicals selected for positive human health and environmental characteristics.

And polyesters are crucial because most of the natural substances are polyesters basically: the naturally occurring carbohydrates are derived from polyesters. This basically means that you design for recycling; you design for the next use instead of just taking the existing thing which was never designed for recycling and make some useless recycled-material products out of it. Those polyesters can become a technical nutrient, that goes back into technical cycles. (figure IX.10).

The pattern is familiar: before cradle-to-cradle redesign, PET fibre had a problematic composition, and the composition and effects of dyes was undefined. After the redesign, PET has an environmentally benign catalyst, and there is increased fibre performance during processing—better and quicker dye uptake, saving energy and reducing residues in waste water. Additionally, customers get increased product quality, and the benefits and knowledge gained is informing the design process for the manufacturer's other products.

This reinforces the lesson: if you do positively define the inputs, you do not need to invest in end-of-pipe technology any more, and this means that these systems become much cheaper. If on the other hand you do as is done now in Europe, especially if you invest in end-of-pipe technology, then you will never really do any recycling because it all ends up in the incinerator and is gone forever.

Figure IX.10 Technical nutrient polyester



Nylon as a nutrient

An additional development emerges out of BASF's "6ix Again" nylon-recycling program, initiated in 1996. Nylon 6 is an ideal technical nutrient:

- ❑ It is highly stable.
- ❑ It can be depolymerized into its precursor, caprolactam.
- ❑ The heat used in the process can be largely recovered.
- ❑ Caprolactam, in turn, can be re-polymerized and made again into nylon 6.
- ❑ BASF is currently following our eco-effective strategy as it works to design and develop systems for its reclamation that would make nylon 6 a pure technical nutrient.

In the BASF project we can see the technical nutrients—fibres for carpets—used again and again for nylon 6 carpets. So instead of selling a carpet, you just lease the carpet, then exchange it for a deposit or a new carpet: a totally different type of economic model. This means that it is also necessary to rethink economies and how they are structured.

Intelligent materials pooling

If we are to agree on what materials we want to use for the future, we need what I call *intelligent materials pooling*, in which every company turns into a bank. Intelligent materials pooling is a collaborative approach involving multiple companies willing to pool purchasing power in order to entirely eliminate hazardous material flows common to a number of companies in the industrial metabolism.

I once analysed a new Ford vehicle, the Ford Mustang, and found that it has 220 different kinds of plastics. That is ridiculous. You can never recycle this. So you had better agree on what polymers you want to use, what types of plastics, making sure that they become a nutrient and they can go into the other industrial metabolisms—which means that the car manufacturer turns into a materials bank. So you engage in pooling materials intelligently instead of selling the cheapest materials to somebody else.

There are four phases to Intelligent Materials Pooling. First, you identify shared values, that is, eliminate the concept of waste; you identify partners, and target specific toxic chemicals for replacement. Then you look at market strength, create a strategic partnership and develop positive purchasing and procurements lists for materials intended to be nutrients. This changes the whole agenda on dealing with materials: it is no longer about dematerialization, but about re-materialization.

The four phases of Intelligent Materials Pooling

Phase 1: Creating community

Identify shared values: cradle-to-cradle design, eliminating the concept of waste.
Identify willing industrial partners.
Target specific toxic chemicals for replacement.

Phase 2: Utilizing market strength

Share list of materials targeted for reduction and elimination.
Develop a positive purchasing and procurement list of preferred intelligent chemicals (which will leverage suppliers to lower costs).

Phase 3: Defining material flows

Specify for and design with preferred materials.
Define use periods for products and services.
Create a materials bank.
Design a technical metabolism for preferred materials.

Phase 4: Ongoing support

Create preferred business partner agreements between members.
Share information gained from material use and research.
Develop co-branding schemes.
Support the mechanisms of the tecnical metabolism.

Next, you define the flows of materials so you can create materials banks out of that. Finally, you support each other and create natural communities between different partners dealing with the same materials.

The key steps in the development of a community of shared values bear repeating:

- ❑ The community decides what it does *not* want.
- ❑ It chooses what it *does* want.
- ❑ Its members support each other against those who endanger the community.
- ❑ A culture bound by shared values takes shape.

This is not the situation right now. It is already 10 years since Bill McDonough and I drafted the *Hannover Principles* (see annex below), but Europeans are still thinking far more about their own situation than the consequences for others of what they do. To give a little example, especially

in Central Europe there is this hysterical fear of the Mad Cow Disease, which is amazing because with the possible disease rate in Central Europe, there will not be more than 600 possible sufferers in Poland, Germany, France, Italy in the next 40 years. The consequences are disastrous. Europe now bans the use of materials from slaughterhouses. In France or Germany, people only eat about 30% of a pig when it is slaughtered, because people only want to eat the filet. All the other components become waste and the current legislation requires this waste to be burned. If you were in China, you would have all different types of food specialties made out of all the different types of materials.

What we do is put them into incinerators. This means burning 15 million tons of slaughterhouse waste which traditionally was fed to pigs and chickens. The result is that in one year, the amount of soybeans imported from Brazil increased by 40%. There is no materials flow management: we just try to save our own health whatever it means for others.

What I am talking about is no longer a moral approach, it is a quality approach. A shirt that causes me to be ill is just a bad product. We have learned that we are now able to make far better use of products. Instead of making the same mistakes all over again, we think about nutrient cycles, which as one observer in the United States said, "is the same for sustainability as what Newton's law of gravity." It is a discovery that came from discussing these things with people in Africa, in Latin America, in Asia. We practice nutrient flow management and this allows us to have far more positive industrial activity. There is no conflict any more between ecology, economy and equity because you can produce far better products.

Annex. The Hannover Principles: Design for Sustainability

1. **Insist on rights of humanity and nature to co-exist** in a healthy, supportive, diverse and sustainable condition.
2. **Recognize interdependence.** The elements of human design interact with and depend upon the natural world, with broad and diverse implications at every scale. Expand design considerations to recognize even distant effects.
3. **Respect relationships between spirit and matter.** Consider all aspects of human settlement including community, dwelling, industry, and trade in terms of existing and evolving connections between spritual and material consciousness.
4. **Accept responsibility for the consequences of design,** decisions upon human well-being, the viability of natural systems, and their right to co-exist.
5. **Create safe objects of long-term value.** Do not burden future generations with requirements for maintenance or vigilant administration of potential design due to the careless creation of products, processes, or standards.
6. **Eliminate the concept of waste.** Evaluate and optimize the full life-cycle of products and processes to approach the state of natural systems, in which there is no waste.
7. **Rely on natural energy flows.** Human designs should, like the living world, derive their creative forces from perpetual solar income. Incorporate this energy efficiently and safely for responsible use.
8. **Understand the limitations of design.** No human creation lasts forever and design does not solve all problems. Those who create and plan should practice humility in the face of nature. Treat nature as a model or mentor, not as an inconvenience to be evaded or controlled.
9. **Seek constant improvement by the sharing of knowledge.** Encourage direct and open communication between colleagues, patrons, manufacturers, and users to link long-term sustainable considerations with ethical responsibility, and re-establish the integral relationship between natural processes and human activity.

Comments and Avenues of Enquiry

Raising the productivity of what we borrow from the planet

CARLOS MAGARIÑOS
Director-General
UNIDO

At the beginning Michael Braungart set a sort of challenge, a point for discussion that I would like to pick up, referred to the way nature makes things—not necessarily always very efficient or extremely productive. I think that we can certainly all agree with that. The way we see the relation between UNIDO activities to encourage industrial development and the activities in the area of environment is very much linked with the concept of helping to increase economy-wide productivity that I outlined earlier (Introduction). Thinking, as it were, from the industrial sector, we see the need to increase productivity and we have seen the private sector as the main engine for that.

But one part of my presentation that probably reached more or less all of you, was the topic of the interactions. When I was talking about interactions and applying these to the area of environment, what I was trying to say was that this concept of productivity increases should also be applied to the utilization of natural resources. And that is why we liked Michael Braungart's concept of the next industrial revolution.

The last industrial revolution took place when we were unable to produce enough clothing for the people in Europe. Then the weavers appeared, we increased labour productivity a hundredfold and we were able to produce much more clothing for the population at large. This is more or less what we try to help to do in the developing countries where there are natural resources, in terms of how they utilize every single ton of energy, soil or water they borrow from the planet.

When I first visited the government of United Republic of Tanzania we discussed several projects, but during the last visit in January, they were talking about the need to work in the area of sisal. The Prime Minister was saying that this was one of their big exports before the fibre was replaced by certain others, so why not try to do something else with the sisal, like produce energy. I would like to take up that point for discussion because it would be interesting

to see how to approach the question. It is true that nature does not always necessarily work in a more productive way. I think it is also true that in order not to deplete natural resources, we should increase the productivity of each ounce of soil, energy or water we borrow from the planet.

Bringing eco-efficiency and eco-effectiveness closer

FRANCISCO SERCOVICH
Senior Adviser to the Director-General on Policies
UNIDO

I understand from Michael Braungart's presentation that steps towards "eco-efficiency" are necessary to finance steps towards "eco-effectiveness". I would like to confirm this.

Now the point I wish to make is that, for instance, in the case of R&D projects the concept of efficiency is not to go straight with a single project to develop a new product. Everybody knows that you have certain proportions, a certain rate of success and, therefore, you have to play with probabilities—so the concept of efficiency is relativized in the sense that you are factoring margins of uncertainty. On the other hand, there is no reason in the concept of efficiency not to also factor in the concept of quality.

I think that even in the case of nature, in the case of the trees that was mentioned, if one takes into account the quality of the final output, we might come to the conclusion that it was probably the most efficient way to do it, simply because there might not be other ways to regenerate the kind of cycle that you are talking about but by introducing this so-called waste—which, in fact, is a way to ensure that the metabolism and the process actually occur. I wonder whether this would perhaps make a little bit less radical the distinction between "eco-efficiency" and "eco-effectiveness".

Need for profit-based signals to ensure care for nature

GHISLAIN ROBYN
Consultant
UNIDO

I am interested in the systems of incentives that would allow this care of nature to prosper, because it seems to me that certain market signals, signals towards profitability, are easily identified and lead to the result that Michael Braungart proposes. Actually, you can say that humans have sometimes taught nature how to transform its waste into nutrients. There are enough Chileans who

could confirm, if they still recall, that they built the economy of their country on guano. Guano was accumulated in the form of waste and left indefinitely in that form; the human, seeing the profit, transformed that into a nutrient.

Market signals, yes. But when the motivation seems to be to protect human life, things seem to change. I discover that there is something that can kill me in a certain substance. Will I avoid consuming that substance because I now know it is deadly? From what we know of the risk-preference of people, it seems that would not obtain. In ancient theory, you evaluate the value of a human life by measuring what a person is prepared to spend at the margin to ensure increased safety; how much you would spend to equip your car with a nice safety belt, and so forth. You come up with a value of life of about $2,000, as measured by the consumers, observing consumer rights.

In the face of danger, humans do not take the necessary precautions, so you would have to introduce a system of incentive then that would be profit-based or something like that. Otherwise, I do not see this thing prospering. And what would that system of incentives be?

Are resources really unlimited?

SURESH PRABHU
Member of Parliament
India

The premise of completely changing the present lifestyles of people and encouraging them to use better-value products from an ecological standpoint is a very welcome idea. In fact, there could not be two opinions on that. The point in this premise seems to be that we have unlimited resources available and, therefore, there is really no need to contain growth; growth can be infinite. Does this lead us to conclude that there is, really speaking, nothing like the carrying capacity of the globe? I mean the globe could carry any amount of population, which it could sustain because the resources seem to be infinite. I do not know whether we have done any analyses of that, but just looking at it raises questions. Maybe biomass will increase with human intervention. But do we mean that unlimited water will be available? Can there be unlimited availability of space? Would that mean that the growing demands of increasing populations could simply be sustained with increased productivity?

In Michael Braungart's triangle we have ecology in one angle, and there is a very plausible argument in favour of that. But just look at the two others: economy and equity. On the equity side, the focus of world action should now be to remove inequality, to bring more prosperity to those who now live on one or two dollars a day. Now take the types of "eco-effective" technologies that are seen as developing: they will be controlled by very few companies. So

how would you ensure that change, if these few companies will be doing it? Let us take the example in an Indian context that was mentioned. Coca-Cola might be able to introduce the new bottle technology, but this will be with Coca-Cola's hands. Any other who is not a multinational sector will not able to catch up with that technology. Would this properly address the equity angle?

Thirdly, this whole effort seems to be to change the minds of some people, to persuade them to seek a better design, a better product, and make a well-informed choice. And once consumers know that they can buy a better product—a better Nike shoe than before—they will do it. Could we not also direct this effort to change the minds of the people who increase consumption. And this raises the question: over a long period of time should we go for increased consumption or lower consumption?

Response: good and bad efficiency; ways of thinking differently

MICHAEL BRAUNGART

I would like to start by taking up Carlos Magariños' sisal question: I have been in United Republic of Tanzania as well as in Yucatán in Mexico on behalf of FAO, about 15 years ago, to compare sisal with polypropylene and other synthetic fibres. Definitely, sisal is superior. So we need to create systems where it makes sense to use sisal profitably, and we should not give up on that. One possible recommendation, as there is a big shortage of tequila right now, and tequila is made from the sisal plant, it may be most profitable to make tequila. Maybe create a United Republic of Tanzanian brand for a type of tequila. So, you see, it is not about reducing or avoiding but about enjoying life.

I do not think it makes sense to burn sisal because it is far too valuable to use as biomass. That is down-cycling, and it does not respect the value of this product. Also, you do not make enough money out of this. Apart from creating a nice tequila, we need to explore markets, especially in the transportation industry, where there is a big need for these intelligent fibres.

Effectiveness vs. efficiency

Coming to Francisco Sercovich's comment, I agree that I over-stress the difference between effectiveness and efficiency: this just has do with the fact that traditional efficiency was first on the market and so to establish "effectiveness", you need to polarize a little bit.

Moreover, I want to say that efficiency in some cases might be good because it slows down the speed of destruction. If you are on the road and you want to turn around, you need to slow down first. Slowing down might be good: you have more time to think and to do things. On the other hand, though, if you pursue efficiency then you lose the money which you actually need to invest in effectiveness. So you might achieve exactly the opposite by investing in the wrong thing. If there is a wrong thing and you make it efficiently, then there might be no longer any incentive to do the right thing. And if you do something which is wrong, then you had better not be efficient, because it would be efficiently wrong. Let me state clearly that East Germany was far more protective of the environment than West Germany—a thousand times more. East Germany did leave many contaminated hot spots, but if you look at it overall, East Germany, as a socialist system, was just not efficient, so they could not destroy all the wetlands. That is happening now.

When Europeans come and say, "Can you please do something in Africa, or wherever, to protect the rainforest," that is not fair: right now Poland is destroying its wetlands because it makes the system more efficient. I can illustrate what I am saying with a little figure. West Germany had 230 couples of storks; East Germany had 3,000 couples in a far smaller land—and this is an indicator for wetlands, for example, and intact ecological systems. East Germany had 3,000 couples of storks because the system was not efficient. So if you have the wrong system, you are better not be efficient. Right now you see the destruction that takes place in Russian Federation: the former Soviet Union was not efficient but now they efficiently destroy their biological resources. If you have the wrong system, do not be efficient.

Therefore, I would ask you to discuss far more what I tried to mention before. What are the values? What do we have in common? What do we want to achieve? What are the goals? Then you can be efficient. You first discuss the effect what you want to achieve: what is the right thing to do. Then you do it right. If you do it the other way around, you might destroy more by good intentions—and as you know, the way to hell is paved with good intentions.

The consumption issue

To address the issue raised by Suresh Prabhu, what I am talking about is exactly the opposite of reducing consumption. If you take a bottle, the ecologists say you don't need a label on it, because you can print on it. The Social Democrats would ask if we can't have a smaller label: eco-efficiency reduces the label size. An alternative is to say you would like to show that this is a different mineral water, and suggest having a big label. What we do is choose the chemicals for these labels, so that when you wash it off in a recycling process, the sludge becomes a nutrient for growing shiitake mushrooms, which is amazingly profitable. The more sludge you have, the better.

Reducing consumption ultimately means that when you see a child in front of you, you complain about over population—because the best way to reduce consumption is not to have so many people. Instead of that our question is how do you love all the children? The answer is that the material flows need to be designed to be nutrients, all the material flows. We take wastewater treatment systems, for example, in Brazil, which are basically gardens where we use the nutrients for high-productivity agriculture, as a by-product of clean water.

Traditional end-of-pipe wastewater management does not work in Brazil. What we have, to address another issue raised, is an incentive, because the farmer makes $1,100 with the excrements of 5,000 inhabitants. And you foster social life because everybody is interested in keeping that waterway clean, so no chemicals are put in because otherwise it poisons the whole environment. We got a lot of money for that, public money from the European Union. It is a by-product of clean water but it is a high-productivity one. I do not say, "Don't go to the toilet" or "Reduce eating because then you have less sludge." I am interested in as much sludge as possible.

We need to talk about how to keep the alloys of metals intact to be used again in vehicles for the same purpose. We do not have an energy problem, because there is enough energy input from the outside. We might have local water problems, that is true. So we need to design systems that work with salt water. Is it not ridiculous that we have all our washing detergents work with sweet water, whereas 80% of the human population lives close to salt water. Is it not ridiculous that our agriculture is focused on sweet water instead of salt water? So we need to think about it. The modern sea is the most productive agricultural system. So flooding salt water agriculture is what we need to think about—how to support natural productivity.

Humans as waste

We need to answer some other questions. What do we do with humans that become waste? If you increase human productivity, more and more humans become waste because we do not need them anymore. Just for the same amount of work, we do not need them. As you can see, even in Europe a 40-year-old person has the same biological age a 60-year-old person had 100 years ago. We are 20 years younger when we retire than we were 100 years ago from a biological standpoint, because the health situation is so much better. A hundred years ago, life expectancy in Germany was 45 years. Now we have people retiring at 60 or 62 or 63. That is ridiculous. This means declaring human beings waste. We just say, "We don't need you. We will put you, not in a landfill but on a pension." So we need to talk about the future of labour, what is the future of human activity. How do we share the productivity gains? UNIDO needs to discuss the future of labour, otherwise you will reach exactly the opposite of your intentions.

Chapter 10

The WTO and the New Horizons of Global and European Agriculture

PAOLO DE CASTRO
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Future scenarios for a European agricultural model can be developed emphasizing three different features: competitive excellence, specific vocations and peculiarities, and multifunctional approach. Despite the fact that European agriculture is often accused of being excessively complex or non-competitive, its potential for competitiveness is still great, even in the international arena.

Through careful management of relevant Common Market Organizations, greater deregulation is certainly possible and advisable—particularly in those highly protected sectors for which the indefinite preservation of the status quo seems to be an unacceptable option.

This is a particularly appropriate time to examine and discuss the future role that agriculture might play as a pillar of global development, not only in economic terms but considering also its implications for society, the environment and the territory. Consider the present international context:

- Mid-term review of Agenda 2000, starting with a new definition of the Common Agricultural Policy.
- Conclusion of the negotiations for the enlargement of the EU to the new member States.
- Negotiations under way in the WTO's Millennium Round, initiated at Seattle and continued at the ministerial conference of Doha in November 2001.

If we consider the global scenario in general terms, agriculture plays its peculiar role lying between two very different functions: on the one hand,

acting as an *economic and productive engine*; on the other, as an essential *nourishment and sustenance factor* for the world's population.

In industrialized countries, the prevailing role for agriculture is that of "economic engine": that is, guiding and promoting economic development and employment, just like the industrial and tertiary sectors do. In this case we are confronted with a "sophisticated" agricultural model, characterized by being highly capital-intensive and technologically advanced, which over the last decades, has ensured *a steady increase in both productivity and supply.* Just consider that in Italy, over the last 30 years, the yields of extensive crops such as wheat, corn and soybeans have increased on average by between 100% and 200%, while other native crops such as apples, tomatoes and potatoes have been going strong as well, with yield increases ranging between 50% and 150%.

In developing countries, instead, in vast areas of Central and South America, Africa and Asia, agriculture is mainly called upon to provide for the basic economic and nourishment needs of a large portion of the population. This year the world population has exceeded 6 billion, almost two-thirds living in countries where agriculture accounts for 30% of all jobs. Even more striking is the fact that *almost 1.5 billion people today live in areas where agriculture provides jobs to more than 65% of the entire labour force.* Furthermore, over the next decade world population will reach almost 6.9 billion inhabitants, with a net increase close to 1 billion. In other terms, it is not possible to discuss or plan global economic and social development without taking agriculture into account.

Unlike other economic sectors, agriculture is characterized by its direct and intimate relationship with the land and, therefore, with the environment. It is an ever-changing relationship, following the pace of technological progress and economic development. Developing countries are now engaged in an exhausting race in the pursuit of efficiency: over the last 20 years, the number of farming tools and equipment has tripled in those countries, while the amount of chemical products used on farmlands has more than doubled.

The evolution of these production and consumption systems has resulted in the steady growth of the agri-food trade at world level. In the 1960s and 1970s it expanded at a rate of more than 200%; even in the 1990s it is doing so by more than 70%. This trade has enabled satisfaction of the food needs of the poor areas of the planet and boosted the growth of the more competitive areas.

In the economically advanced countries, the agricultural sector has played, and still plays, an important propelling function for the development of the whole economic system both through the constant increase of supply, which often results in considerable exports—as is the case in Australia, New Zealand, South Africa and the United States—and higher productivity thanks to some major technological innovations. Diverse endowments of productive factors have yielded very different results in the developed and

developing countries, with the former clearly enjoying the better ones. It can indeed be argued that so far "agricultural globalization" has offered a greater chance of development to the agricultural systems of more economically advanced countries.

Underdeveloped and developing countries are plagued by a progressive increase in demographic pressure which has two effects: a massive and very often unsustainable exploitation of agricultural resources through the tillage of new lands and the use of intensive crops, and the danger that changes in the structural parameters of the agricultural sector might give rise to redundancies in the labour market which, in turn, may prompt both increased migration flows towards industrialized countries and environmental degradation.

If it is true that global economic progress must rely on the concept of future sustainability—and I am strongly convinced of that—then it is in the agricultural sector, which "manages" about 5 billion hectares of arable land worldwide, that we can find some of the most viable solutions.

EU agriculture and Agenda 2000

In the European Union, Agenda 2000 can be considered the natural pivot around which the future development of agriculture must hinge. This agreement has enabled us to face the new millennium and the WTO negotiations standing firmly on common ground, in terms of future actions and programmes to be undertaken. In this respect, I would like to emphasize that Agenda 2000 has established a *reduction in direct subsidies* for many products. For some sectors such as grains, beef and wine, the rationale behind those choices was that of recovering competitiveness to penetrate foreign markets.

However, I think that the greatest merit of Agenda 2000 should not be sought in each single Common Market Organization (CMO) but in the will and capacity of defining the essential elements of a European agricultural model for the new millennium. A model in which agriculture will become an integrated economic sector in an open market but, at the same time, fully abiding by the principle of *future sustainability and compatibility with "extra-economic" components*, such as territory, the environment and society. In this respect, it is worth mentioning the new EU Regulation on Rural Development. Agriculture has become not only an essential part of the economic policy of each member country, but also of specific policies for social and local development.

It is in this framework that we should consider the importance of the so-called "multifunctional" principle. A multifunctional vision is not synonymous with a diminished role for agriculture: instead, it is tantamount to integration of new tasks, functions and environmental services on a strong agricultural foundation, in order to safeguard the local landscape and cultural

heritage and promote rural tourism. For these purposes, I think *integration* is a pivotal concept since each "multifunctional" asset or service does not have its own identity if it is separated from the rest: it acquires a meaning only when it becomes part of an agricultural product. That is why devising mechanisms to separate the two components and manage them independently is such a difficult task. However, I would like to make it clear that I do not think that the "multifunctional" approach should ever become an excuse to keep pumping subsidies into the agricultural sector.

In the mid-term review of the Common Agricultural Policy, the document presented by the EU Commissioner for agriculture, Franz Fischler, has marked the pathway towards a deep reform of Agenda 2000 and, more generally, of the whole CAP. Besides interventions addressed to individual market organizations (cereals, oil seeds, beef) it puts forward proposals on the approach and objectives of agricultural policy. Among these, attention is to be drawn to the shifting of resources from the First Pillar (market interventions and direct aids) to the Second Pillar (rural development) through the application of a modulation (% cut) of the direct aids and a maximum ceiling to the value of direct aids allocated to any one farm. In the area of rural development new instruments are envisaged for food quality and safety, product promotion, animal welfare and environmental sustainability. Also important is the decoupling of aids from the product, leaving them connected only with the farm.

The EU agricultural model remains very much free-trade-oriented in its relationship with international markets. Proof of this is the enlargement of community borders to include Eastern and Central European countries. Furthermore, it must be kept in mind that the EU is the major importer of foodstuffs at world level. Also, over the last months it has embarked upon an autonomous effort to loosen the instruments of support for export and of internal protection, by associating with liberalization agreements such as the EBA programme embracing the world's 49 poorest countries and its extension to the ACP countries.

New rules and objectives for world trade

We have recently witnessed a proliferation of trade treaties and conventions, the most important of which was the Uruguay Round of GATT (General Agreement on Tariff and Trade) agreements. I do not intend to dwell on the technicalities of the so-called "millennium" WTO negotiations, such as the "peace clause", the "safeguard clause", the preservation of domestic subsidies or the blue or green "boxes". Instead I shall focus on a possible minimum common denominator which might be shared by opposing factions; different countries and groups of countries.

If we read through the various statements and opinions expressed over the last few months by the various parties to the negotiations, the strongest voice seems to be that of the European Union calling for yet additional reductions in agricultural subsidies. Agenda 2000 is a concrete step in that direction and will certainly prove to be instrumental in stabilizing global agricultural markets. I think that further steps can and must be made during the next WTO negotiations following an equitable free-trade approach, for example by privileging developing countries. I am equally convinced that an exclusively defensive and protectionist EU policy would be self-defeating, since it cannot be easily justified and would ultimately prove ineffective in opening new markets to those products which are endowed with great, as yet untapped potential.

This said, in looking for ways towards deregulation, we must to bear in mind the great differences that still existing within the EU in the agricultural and food-processing sectors:

- The CAP, for example, provides for *subsidies* of about 60-70% (of the total EU production) for products such as sunflowerseed, oats, beef, mutton and milk. For fruit and vegetables, aids account for little more than 20%, while for pork they are lower than 10%.
- As regards *tariff protection* (as a percentage of product value), sugar, butter, barley, reduced-fat powdered milk and beef are highly protected (all of them with more than 70%), while tariffs are negligible if not practically non-existent for other products such as fruit and vegetables.
- Regarding exports for which restitution applies, the most favourable treatment is reserved for wheat, butter and reduced-fat powdered milk.

This highlights how deep a rift there still is between different crops, products and member countries within the EU. If we examine the choices which were made in the past, we could easily conclude that the inconsistent rules we have developed over time have ultimately induced developing countries to specialize in crops which were not typical of their geographies. A particularly eloquent case in point is that of some Latin American countries which over the years, due to the protectionist barriers imposed by the EU against continental crops, have specialized in those products for which international trade seems to be more open (first and foremost, fruit and vegetables).

That is why further deregulation of trade can be pursued, gradually, in those sectors where excessive supports or protections are in place. By the same token, no additional concessions can be granted in those areas which are already seriously exposed to international competition—except when, due to negotiation-related needs, compensation measures might be introduced within the framework of the CAP.

Looking beyond this scenario, the enforcement of the Marrakesh agreement has proved that the three-pronged approach—based on internal support, market accessibility and export-supporting measures—is the expression of a nearsighted and simplistic view of trade-related problems that does not remove the obstacles which hinder the appropriate development of international trade in the food-processing and agricultural sector.

Having said this, I would like to tackle an issue which is very close to my heart: *the protection of traditional and typical products*. In global markets, unfair competitive practices, which damage some European products, have become frighteningly common. I am referring to forgeries, the illicit use of denominations of origin, imitations of peculiar food products and the like. These unlawful actions, which are highly detrimental to European enterprises—and Italy is certainly a leader in this specific field—are not sanctioned at all by any GATT regulation and cannot even be countered through the World Trade Organization. The situation is particularly dismal for denominations of origin, which are not protected at all by the TRIPS agreement.

An important advance was achieved on occasion of the Doha Conference, when the issue of extending the protection for the designation of origin to the WTO member countries was included in the final declaration. This is of strategic significance for Europe's, and particularly Italy's, agriculture.

The goal in this area is, I believe, the establishment of a multilateral register for all those products for which denominations of origin or certificates of specificity apply. I personally think that the introduction of such a register should become mandatory.

As for *consumer protection*, the situation appears to be equally discouraging, since the approach followed by the WTO does not allow member countries to adopt strict policies in this field and allows for the emergence of unacceptable situations, as became all too evident during the recent dispute with the United States on hormone-treated meat. Hence, the introduction of the "caution principle" to WTO regulations must be a top priority for European negotiators.

Likewise, the *protection of the environment and animal well-being* have been completely excluded from the Marrakech agricultural agreement and, for this reason, European enterprises have to incur ever-increasing costs due to the constraints imposed by EU regulations and, in the end, are at a disadvantage compared to their counterparts in other countries which do not have to comply with any regulations in this field.

The same applies to labour-related issues, in which European enterprises are exposed to competition from countries where products are manufactured through the exploitation of workers and child labour. The Millennium Round can become the occasion to include some fundamental principles into WTO regulations, in the framework of agricultural agreements.

As you might gather, this urgently calls for a redefinition of "rules" regulating world trade.

Agricultural policy beyond the Millennium Round

I am deeply convinced that by fully abiding by the principles enshrined in article 20 of the agricultural agreement, an equitable and compatible deregulation of trade is still the main road towards development. WTO agreements can become an occasion to define and harmonize global agricultural policies. For this reason, we should consider what kind of agriculture we want in the world after the Millennium Round.

If we limit ourselves to European agriculture, I think that future scenarios for a European agricultural model can be developed emphasizing three different features:

- Competitive excellence;
- Specific vocations and peculiarities;
- Multifunctional approach.

Despite the fact that European agriculture is often accused of being excessively complex or non-competitive, the potential for European competitiveness is still great even in the international arena. Through careful management of relevant Common Market Organizations, greater deregulation is certainly possible and advisable—particularly in those highly protected sectors for which the indefinite preservation of the status quo seems to be an unacceptable option. In this perspective, the mid-term review of Agenda 2000 is a great opportunity for all the EU countries and for the whole European Union.

The same principles apply if we broaden our prospective to the global scene. We should always aim at improving and integrating global agricultural strategies in line with the main developments in world agricultural policies, such as world trade and the balanced and equitable use of subsidies, which certainly figure prominently in this framework. However, we must also consider other factors, which might prove to be even more important, such as the relationship between agricultural and social phenomena (the problem of migrant workers has reached epic proportions in some "border" countries), between agriculture and health, between agriculture, economic development and employment and between agriculture, territory and the environment.

Only if we succeed in rising to this difficult challenge, by defining new rules, exchanging know-how and skills and harmonising our approaches, but also preserving our different vocations and specializations, will we be able to provide tangible and sustainable solutions to the many different problems that the agricultural world has been called upon to solve by global society.

Comments and Avenues of Enquiry

Giving with one hand, taking away with the other

FREDERICK SUMAYE
Prime Minister
United Republic of Tanzania

In Mr Paolo de Castro's presentation he mentioned that when agriculture is modernized and human labour is replaced, say, by more efficient machinery, then there is always a danger of those people being displaced and migrating to industrialized countries—which in a way may be true. But what about looking at this the other way around: if agriculture in the developing countries continues to be primitive and it does not produce enough, might not the migration be even more serious than when agriculture is modernized? That is my first point.

Point number two: subsidies. He has given us some figures on how the European Union is subsidizing various farming activities. And he has also mentioned the opportunity of EBA, Everything But Arms, under which the developing countries now have access to the market of the European Union. But this giving of subsidies and the opening up of the market, is it not giving with the right hand and taking it away with the left hand? The poor countries cannot subsidize their agriculture: they do not have even the ability to subsidize, and they are not allowed to subsidize by the international financial organizations, like the IMF and the World Bank. At the same, the European countries are opening up their market but they are subsidizing their agriculture to the tune of about 70%. How can the poor countries export to the European markets under these arrangements?

Number three is the argument that the WTO arrangement is very good for global agriculture. The question is how agriculture in the developing countries will be protected when the WTO Arrangement comes into effect and there will be no tariff barriers, no nothing. If, for instance, a farm in Italy produces, say, 100 units of whatever crop, a similar farm in United Republic of Tanzania produces 10 units. Obviously, it will be cheaper for those products to come from Italy to United Republic of Tanzania than to depend on those that are produced in United Republic of Tanzania because the local cost of production will be so high. But, at the same time, this agriculture, much

as it is so inefficient, is what provides employment to the people. So when the agriculture in the developing countries has no protection, obviously it will collapse.

Some progress on export subsidies, none on internal support

HERNÁN MARTÍN REDRADO
Vice-Minister for Foreign Affairs
Argentina

I always love to hear these discussions about agriculture in Europe and in the United States because when I hear them in Europe, the United States is the villain; when I hear them in the United States, Europe is the villain. But to go to the numbers and the facts, I would like to point out that the EU's Mid-Term Review changes the nature of the subsidies in order to make them more effective, but from an aggregate point of view, it does not make a big difference. It is quantitatively more or less the same. And so it is basically changing the nature of the subject, making subsidies more effective for the European farmers, vis-à-vis also the enlargement towards countries like Poland. It does not change what we call the nature of the issue.

When we talk about the subsidies in the United States, clearly the political signal of the Farm Bill has been a bad one. In my perception, you have to balance that with a presentation that the United States has made to the WTO: my analysis is that the United States has traded the internal support for this position in WTO for the Farm Bill. When you look at the absolute numbers, the United States is still below the consolidated levels at the Uruguay Round of $19 billion of subsidies while the European Union has subsidies of around $36 billion per year. In Brazil and Argentina we have looked very carefully into the subsidies on soya and the total aggregate subsidies, and there is no case to bring for consultations under the WTO.

What I am saying is that we are seeing that there are movements, but they are movements for nothing. I am very sceptical about what we can see there. What I must say is that the developing countries have learned from the Uruguay Round that we are not going to sign anything at the Doha Development Round or the Millennium Round, whatever you want to call it. In my conversations with Europeans and Americans and even Japanese, usually you hear that they would like to see some further deregulation in services, in particular in Brazil. It is always a sort of Crown Jewel to have the Brazilian market open for more services, government procurement and some goods. But within the Southern Cone (Brazil, Argentina and the rest of Mercosur), we are not going to make the same mistakes as in the Uruguay Round: we will not move if there is no real movement in the agricultural area.

Brazil and Argentina are now the first world exporters of soya, wheat and other agri-business products. Together we are making a difference. We are willing to talk about services, about government procurement, about goods, about rules of origin and so forth, but clearly we are not going to speak about any of this if there is not a real first step in agriculture. What we have seen so far is facade, window dressing, all these very nice concepts about multi-functionality and so forth, but not real deeds. This is not acceptable.

There are three areas where we need to see progress. One is in export subsidies and I see the United States, within the Free Trade Agreement of the Americas (FTAA) and the WTO, more aggressive—that is to say, bringing export subsidies to zero.

Next is internal support, and that is where I see no movement, just attempts to shift from one subsidy to the other.

Third is tariff peaks, and here there has been a reduction, or at least a new approach using the Swiss Formula in order to reduce the tariff peaks and bringing tariffs down to a more adequate level.

I want to make our friends in Europe see that if they want the Brazilian market in particular, they have to give something in exchange; basically this is a trade-off. But they should not expect developing countries, and particularly Mercosur countries to be very eager. Brazil now has a centre-left administration, which is likely to be a Felipe González type of social democracy but is going to be much more protective of the Brazilian market. This needs to be taken into consideration: there is not going to be an aggressive offer from our countries if we do not see more than window dressing.

Response: new EU philosophy will make a difference

PAOLO DE CASTRO

It is quite strange for an Italian to have to defend the Common Agricultural Policy because, as you know, Italy does not get a lot of these aids that other countries in Europe have. In this situation, I will start by addressing the interesting topics raised by the Prime Minister of United Republic of Tanzania.

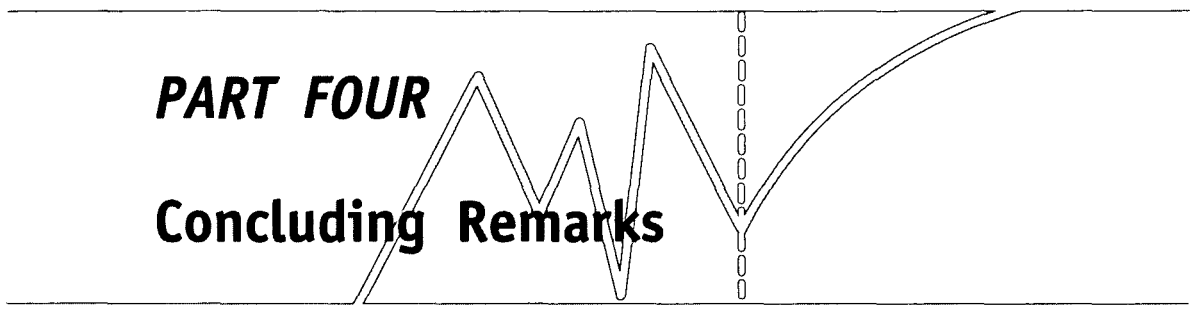
First, I absolutely agree with him. I cannot say any more. The problem is how we will be able, under the WTO negotiations, to try to find a way to give real advantages to the underdeveloped countries to become competitive in this situation in which the two blocs, the European Union and the United States, are really pumping subsidies. I have to say that some steps have been taken in the direction of reducing subsidies, and the European Union, as I mentioned earlier, is taking this a step further. I want to stress one aspect where a big change is under way. In the past all subsidies went to the single

farmer: if you were a farmer, you got a subsidy. Right now the philosophy, after Agenda 2000 and very much now during the debate on the Mid-Term Review, is that we do not have to give a subsidy to the farmer unless he follows some rules of behaviour regarding the environment, food security, quality control, etc.

If you go to the budget you can see that there is not much of a difference: €42 billion before, and €42 billion now (there is a minimal saving of €200 million). But the philosophy is quite different because a big part, 20% of the €42 billion, move from the first pillar to the second one—from market integration, direct aids, to rural development programmes, which are completely different because there are some specific programmes that all European regions have to apply before the farmers can get the subsidy. So you no longer get the subsidy because you are a farmer, you get a subsidy because you are following some special programmes.

The Vice-Minister of Foreign Affairs of Argentina has raised a very big question to these things I have said. There is one thing I want to add: when we talk about the total budget for the Farm Bill and we compare it to the total budget for the European Union's Common Agriculture Policy (CAP), we sometimes do not make the right comparison. When you talk about how much is the support budget for the United States farmer, they say less than one-point-something per cent because they compare it with the total expenditure of the United States Administration. When we talk about the European support budget, we say it is about 50% of the total European budget. But this is not correct because we should compare with the total budget of all 15 countries. If we make the right comparison, we have almost the same total amount and, if you compare single farms, the expenditure of the United States is absolutely higher than the European.

I have to say that the debate within Europe now is quite strong. Recently the French Minister of Agriculture wrote a letter to nine Agriculture Ministers in Europe asking them to reject the Franz Fischler project for the Mid-Term Review. M Chirac has said we do not have to touch anything until 2006. Of course, this situation is bad, but my personal opinion is that the new approach will be accepted finally. That will be the start of a new era that, of course, will in the future see a reduction of total subsidy, especially export subsidy.



PART FOUR

Concluding Remarks

Chapter 11

Going Beyond the "Level Playing Field"

FREDERICK SUMAYE
Prime Minister
United Republic of Tanzania

> The poor and the rich cannot compete on an equal footing. There must be concerted efforts and genuine partnership between the rich and the poor, because the poor on their own may take too long or may fail completely. This partnership has to exist if the poor are really to get out of the poverty trap.
>
> Globalization would work between equal partners, but among unequals—as is now the case—there must be concessions for the disadvantaged partners, that is, the developing world.

The first sentence of the Mission of UNIDO says, "UNIDO helps developing countries and countries with economies in transition in their fight against marginalization in today's globalized world." This, I think, has been the general thrust of the Venice II meeting.

During the deliberations quite a number of facts have surfaced. One is that marginalization is already taking place, whether by design or otherwise—that is, there are countries that are already being left behind. To me, that is the kind of marginalization that UNIDO is talking about. Two, that the very poor countries are getting poorer and poorer and the richer countries are getting richer and richer. This is also a fact. Another one is that the very poor countries are so poor that adequate planning for meaningful development is very difficult.

I come from a poor country and I know what this last point means. For instance, if you want to build a road and at the same time people have no food to eat, you have to decide between those two demands—and both are necessary. In other words, in poor countries there are two many priorities competing for very scarce resources.

Priorities in the poor countries may sometimes be dictated by others, mainly the donor countries, international financial institutions and so on. This can be done in the name of reforms, structural adjustments and so on. These poor

countries may be compelled to finance projects that to them would not have been of highest priority. An example of this would be servicing foreign debts.

Another fact that has emerged is that the poor and the rich cannot compete on an equal footing. There must be concerted efforts and genuine partnership between the rich and the poor, because the poor on their own may take too long or may fail completely. This partnership has to exist if the poor are really to get out of the poverty trap.

Yet another fact is that we all have the right to a good and dignified life. Mother Earth will only be a safe place for everybody if there is a reasonably equitable distribution of wealth.

So what do we do? Goodwill: there must be goodwill to help the poor come out of the poverty trap. The rich must sacrifice some things for the sake of assisting the poor. Globalization must have a human face, we have heard. I have asked myself, what face does globalization usually wear? It does not usually look very human.

The poor countries' accessibility to markets, if not guided, is not possible either. The poor countries' industries will die because they cannot compete in the world markets due to poor quality and higher production costs. Their own markets will be filled with products from more efficient multinational companies that are operating in the industrialized world.

With agricultural produce, it is the same. Poor countries usually have very low productivity because of the technologies they use, because they use the less productive varieties of crops, and because there are no subsidies. In the developed countries it is completely the reverse—therefore, if you take these two groups and say they must compete on an equal footing, there is no way one of them can survive. So, I insist, there must be some sacrifices by the developed world for the sake of assisting the poor countries.

Globalization would work between equal partners, but among unequals—as is now the case—there must be concessions for the disadvantaged partners, that is, the developing world.

Then there is the debt burden. We all know debt is debt. Debt must be paid. But can we pay it? This, I think, is the question. Does it make any sense for a poor country to pay debts from her meagre budget when her people can hardly manage one meal a day? There are no medicines in hospitals and dispensaries. The children cannot go to school, the roads are impassable and farmers' produce cannot reach the markets. So we are not saying the debts should not be paid but asking if it makes sense when these countries are so poor. If you take a country like United Republic of Tanzania as an example, we are struggling very hard to make our economy grow but we have a per capita income of less than $300—actually $260. That is less than a dollar a day. And from that money, you would be required to pay or service a debt maybe to the tune of 20 or 30% of your budget.

What we are saying is there are many relief arrangements, but any of them—debt relief, debt rescheduling, whatever—if it is short of debt

cancellation, surely these countries will not be able to come out of poverty. Most of the money that is owed, as Professor William Easterly pointed out in his analysis of the myths of the financial institutions (chapter 6) was spent under the guidance and direction of those same institutions. And now the poor countries have to pay it back. What we are asking is, are they able to pay? I do not think so.

Whatever arrangement we bring in to try to address the problem of poverty or development in the poor countries, all partners must be involved and there must be open discussion: there should not be dictation of terms by one partner to the other. Institutions should be strengthened. The standards in our industries should be improved so that we can export into other markets. Quality control institutions must be strengthened. Accreditation institutions and metrology institutions—all these institutions must be improved so that we can deal with various parameters of production and also control dumping.

There must be a give-and-take relationship as a result of which there should emerge an accommodative field—rather than just a "level" playing field. A level playing field makes only sense when the partners are equal; if you talk of a level playing field without considering the level of the various partners, then the field is not really level. With a good relationship and participation in this partnership, the poor nations will be richer, or less poor, and the richer nations will not be poorer.

For most developing countries, agriculture is top priority. Industrialization, starting with agricultural processing to add value, follows closely in the priority listing. The subsidies granted to farming in the developed countries surely defeats the whole purpose of assisting the poor countries. Any arrangements that undermine or thwart economic emergence, agricultural development or industrial development in the developing countries are unacceptable.

Africa may have a comparative advantage, as argued by Professor Wood (chapter 3), in unprocessed primary products, but this would only work in its favour if the producers could determine the prices of primary commodities in the world market. As long as prices are determined by consumers, dependence on unprocessed primary commodities is not good enough. And that is why industrialization, particularly starting with the processing of agricultural produce, is also of the highest priority to us. Mining produces a short-term economic gain because it is an exhaustible resource.

Should a Venice III meeting be convened, I suggest that a call be issued for papers from the Third World countries, particularly to get views from the politicians. This is not because I want to turn this into a political forum but because it is important to hear and learn of the problems the politicians encounter, particularly given that we have heard, even in this meeting, that the problem is the politicians.

Professor Wood has underlined the need for international linkages, availability of water, electricity, skilled labour, communication networks and so on, for an economy to take-off. We all quite agree, but the issue is where do we

get the resources to work on these? These are things, academically, we can say that must be there so that the economy can take-off, but if our countries are poor, it is actually because these things are non-existent. So you come to a chicken-and-egg problem. It is the politicians who must make the choices.

I say this while at the same time taking the position that there are many inhibiting factors to development that the developing countries should tackle on their own—issues such as good governance, security and peace, the fight against corruption, incentive packages, putting in place laws and regulations that encourage our investments and so on. So basically what I am saying is I think we need to come closer to each other in partnership. We must trust each other and work together if we really want the Third World to come out of poverty.

Chapter 12

An Agenda to Ensure the Economic, Social and Political Sustainability of Reform Programmes

CARLOS MAGARIÑOS AND FRANCISCO SERCOVICH
UNIDO

VENICE II has produced agreement on several key topics:

- That we need to come up with an improved paradigm for development—a new Development Agenda—and that this new paradigm must take the best of the current one, and add a sharper focus on ensuring the economic, social and political sustainability of reform programmes.
- That the task is so vast, it cannot be thrust on the shoulders of international institutions alone.
- That we cannot apply automatically to one country something that works in another.
- That to build this new paradigm we need a quantum leap in information and economic research.
- That we need better standards to gauge the performance of economic reform programmes and make them consistent with good governance.

Gauging reform: the missing element

Many in the developing world feel frustrated by what they perceive is the failure of most market-oriented reform efforts during the 1990s to yield the expected result: a better living standard for the population at large, tangible and sustainable.

There is no doubt that the policies aiming to attain macroeconomic stability, fiscal equilibrium and external liberalization have been well inspired. But their effectiveness has been constrained in a number of cases by design and implementation problems—and they have proven insufficient, on their own, to reach the goals sought or to sustain them once achieved.

This is not just an economic problem. The working of the political system and the behaviour of the electorate do not remain unaffected when, for instance, most of the labour force earns real wages close to, and often below, subsistence levels. In the absence of the necessary rewards, support for reform programmes inevitably wanes.

Developing countries must respond to a great variety of simultaneous challenges in many areas: social, environmental, educational, health and nutrition, science and technology, institutional, and governance. We know that economic and social development requires consistent progress on all these fronts. And nowadays it is hard indeed to believe that catching-up processes are as automatic as the received theory predicted. Developing countries face very real barriers to development, which are multiple and highly interdependent.

In the past we correctly prioritized the fight against inflation and for macroeconomic stability and fiscal equilibrium. Now, in order to ensure the success and sustainability of efforts devoted to this wide range of challenges, while persisting in these efforts, we must place far greater emphasis on the problems directly associated with productivity and wealth creation.

Appropriate macroeconomic conditions provide opportunities for wealth creation, but in and of themselves they do not create wealth. We have appropriate standards to assess and monitor macroeconomic performance, such as fiscal equilibrium and low inflation. In the same manner, we ought to use productivity indicators to gauge wealth creation by productive agents in the real sector. It may not be hard to reach a consensus on this—and it is urgently needed. Developing countries suffer an appalling deficit in their capacity to gauge, assess and strengthen their own productivity performance, even though this performance is critical to the success of reform programmes because it touches the essentials of good governance in a competitive world economy.

This is a message that bears emphasizing. Achieving sustained productivity gains is a first-order priority for the developing world. The continuity of reform processes depends on it. The reason is straightforward: without such gains it is impossible to raise the standard of living of the population at large and to avoid undermining the popular consensus that is required for reform programmes to succeed—or, even worse, risking a growing consensus *against* such programmes as a result of the ensuing disappointment.

The evidence: comparative productivity performance

The case we are making can be illustrated with a quick comparison of productivity performance across regions and countries. Take Latin America, a region where in-depth reform programmes were steadily pursued throughout the 1990s. Over that period, Latin America's average labour productivity clearly increased with respect to the 1980s. According to UNIDO estimates the average annual rate of growth of labour productivity went from *minus* 1.5%

Figure XII.1 Labour productivity growth (average annual change, 1980-1990 and 1990-1998, in per cent)

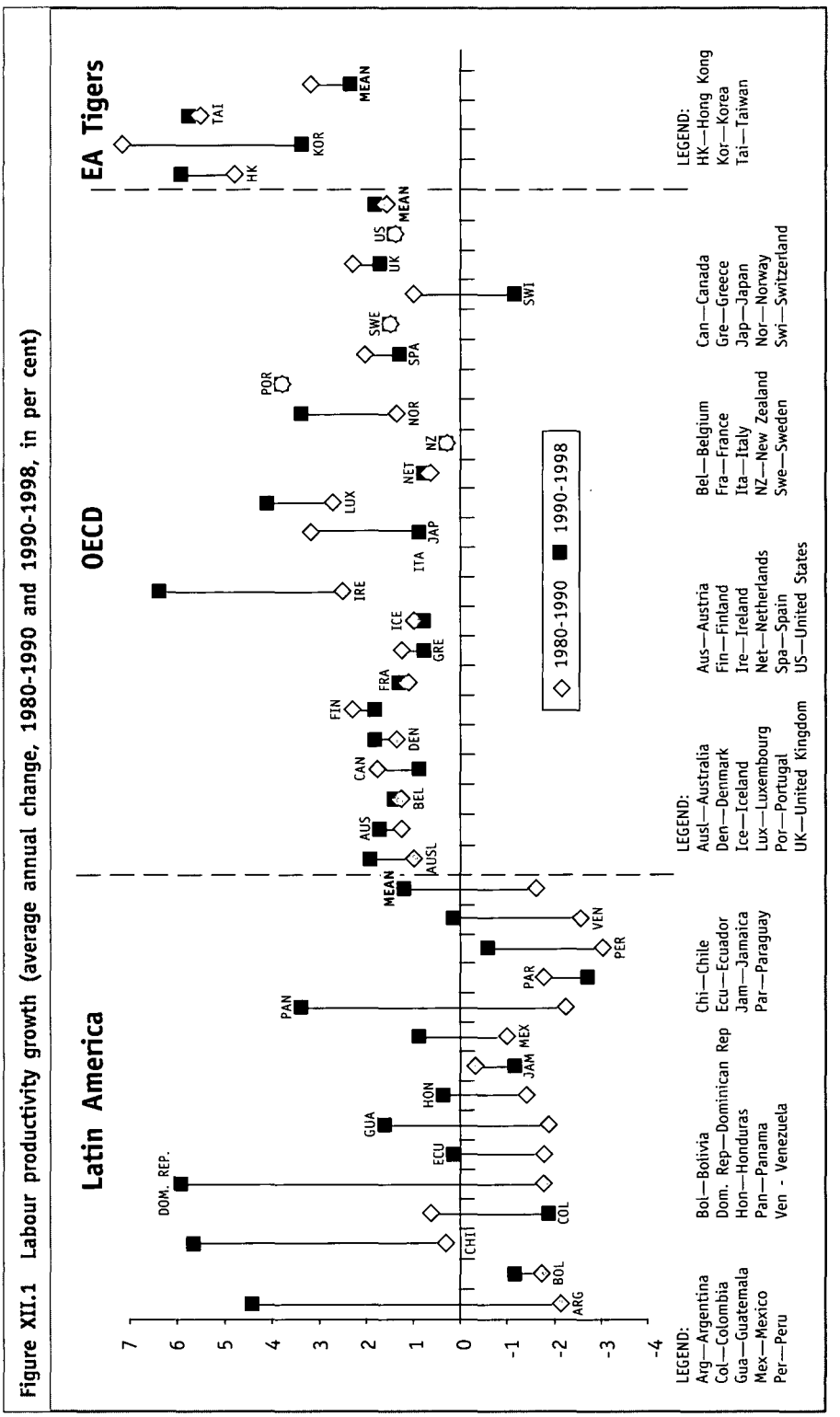


Figure XII.2 Total Factor Productivity growth

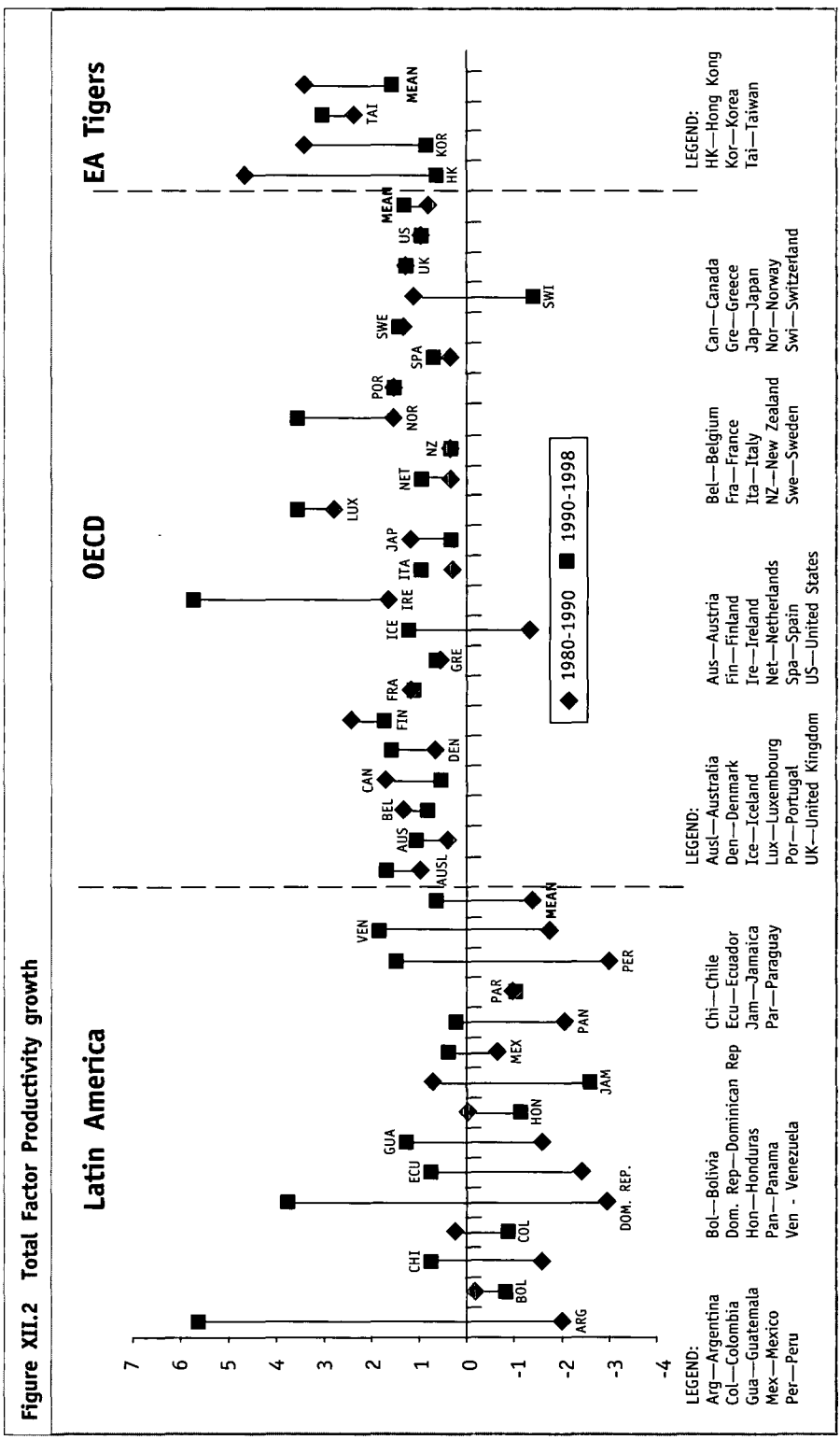


Table 12.1 Manufacturing exports performance by region (1985 and 1998, in per cent)

Country group, income level or region	1985				1998				Change in medium and high tech, 1985 to 1998
	Resource based	Low tech	Medium tech	High tech	Resource based	Low tech	Medium tech	High tech	
East Asia	22.7	38.2	23.3	15.8	12.1	28.1	23.6	36.1	20.6
South Asia	32.3	55.8	9.2	2.8	21.4	62.8	11.4	4.4	3.8
Latin America and Caribbean	51.3	16.9	24.8	7.0	24.9	18.2	37.2	19.7	25.1
Latin America and Caribbean (without Mexico)	58.6	17.7	20.4	3.3	47.1	17.0	28.9	7.0	12.2
sub-Saharan Africa	57.9	17.3	18.2	6.6	45.8	23.3	25.5	5.3	6.0

Source: UNIDO

during the 1980s to 0.6% during the 1990s (figure XII.1). Multifactor productivity gains were the main reason for the improvement, with capital per employee coming a distant second.

It is important, though, to highlight that Latin American productivity performance during both the 1980s and 1990s was well below that of the OECD, and even further below those of the East Asian countries (figures XII.1 and XII.2). Also, the variation from one country to another in both multifactor and labour productivity is much higher in Latin America than in the other two regions.

These contrasts can be largely explained by the relative rhythms of technological change, which are strongly influenced by a range of factors: the incentive system; the availability of the public goods offered by the social, educational and technological infrastructures; domestic adaptive innovation; foreign direct investment and export performance. Productivity performance is closely associated to export performance, particularly in high-technology products—an area in which the gap between Latin America and the Caribbean (excluding Mexico) and the East Asian countries has considerably broadened during the 1990s. The performance of Latin America and the Caribbean in this respect is similar to those of sub-Saharan Africa and South Asia (table XII.1).

The VENICE II Consensus

From this VENICE II meeting several things have emerged that we appear to have agreed upon.

The *first* is that **we need to come up with an improved new paradigm for development—a new Development Agenda.** This task is not being seen within the same old framework of the past, when we had polarized views on what had to be done. At no time during the deliberations did anyone say that we have to close the economies, risk macroeconomic instability or ignore the need for the rule of law or good governance. We all agreed on preserving those things as valuable aims. What is needed is not a new paradigm in opposition to the current one, but rather to go beyond the current list of topics of the development agenda as we know it, to ensure that the developing countries will be able to plug into an *inclusive* process of globalization. We seem to agree that the recommendations produced so far are not enough, or are not getting through.

We all seem to agree on proposing trade liberalization. But we do question why the developed countries do not open up their markets or do so in a lopsided way (witness the cases of tariff escalation, textiles and agriculture). And we do note that when developing countries seek to benefit from sustainable liberalization, they simply do not know which programmes they must adopt. They have neither the requisite skills, or the tools, or the financial resources; even worse, nor do they yet know well enough how to comply with

the environmental, safety and health-related conformity requirements their products face in the markets of the developed countries.

The kind of developments Michael Braungart outlined in chapter 9 will, we believe, become production standards in the not too distant future—as soon as the private sector realizes that they represent the most effective or efficient or convenient or profitable way to do things. But then we shall have to address an ever-present challenge: to acknowledge that our policy recommendations in financial and development cooperation will have an impact on quality.

The *second* thing we appear to agree upon is that **the task is so enormous that it cannot be thrust on the shoulders of international institutions alone.** This is why we sought in VENICE II the participation of representatives of the private sector and academia, and why the next time we shall also have to include people from NGOs. We are not getting there; we are not reaching the places we have to reach—as Bill Easterly so vehemently put it (chapter 6). We are saying this from an agency that has actually pursued greater effectiveness by reducing its staff, its structure, and the number of offices in the field—we are still not getting there. At the end of the day, when we attend our policy-making organs or those of other institutions, the discussion about management often sounds much like a beauty competition. The more you reduce your budget, the more you streamline your services, the more people applaud your performance. All too often overlooked is that our main purpose is making meaningful contributions to the developing countries.

So we seem to agree on the need for a development paradigm which does not necessarily differ completely from the current one, but focuses more on **how to make the recommendations work properly for the developing societies.** And we also seem to agree that we need a number of new actors to play additional roles, like the private sector becoming actively involved in technical cooperation.

A UNIDO intervention that comes to mind in this respect is the launch of the programme with India and Italy a few years back, which sought to optimize the developmental impact of Fiat's investment in India. For years we had been teaching quality standards to the automotive components manufacturers, to no avail. Under this programme we taught them how to supply parts to Fiat's plant in India—and in a very short time they became international suppliers. So far, it has been a localized success (and we must emphasize that we do not yet know whether we can adopt it as a development strategy elsewhere). This is a point touched upon by Adrian Wood (chapter 3). Our Industrial Development Report strongly recommends looking at the linkages between small and medium-sized suppliers in developing countries and multinational companies. But we still need to translate this into customizable and actionable policy recommendations.

UNIDO is also discussing joint undertakings in the Caribbean and other areas. The big question is, what can be replicated fruitfully? This must rank as the *third* point we seem to have agreed upon: that **we cannot apply auto-**

matically to one country something that works in another. There is no such thing as a one-size-fits-all formula. That, of course, makes the challenge more complex. It would appear that meetings such as this will have to become more focused, more directly related to particular aspects of development, to see how we can actually put policies to work.

Many participants have raised the issue of information. This strikes a chord with us: we recall the problems we face when undertaking country-specific industrial assessments for our integrated programmes (now in place in more than 44 countries). The question is always, what information do we really have about how this development agenda is working in developing countries? What information do we really have about the development agenda's impact on the productivity performance of developing countries? The issue is related to what Grzegorz Kolodko said about the need to improve the management of micro-economic policies (chapter 2). You will recall the example we gave of Argentina, where the productivity performance of the different sectors of the economy changed completely in a period of four years (Introduction). We were roughly aware that there was some connection between the productivity performance and the extent of public support for the development agenda—but it would have been better if we could have had more accurate information available *at the time those reforms were undertaken.* When the Chairman of the United States Federal Reserve or the President of the European Central Bank have to decide what to do with interest rates, one of the first things they do is to check indicators of productivity performance in the real economy—and they have the necessary information readily at hand.

Certainly, as Adrian Wood implied, what matters for overall standards of living is not the productivity performance of this or that specific subsector, but that of the economy as a whole. This suggests the need for interventions that are aimed at economy-wide productivity improvements as opposed to narrow selective interventions. To this we would only add that, in a world economy with highly interdependent and fully open national economies, welfare is maximized when a division of labour ensues that is consistent with dynamically evolving, *relative* subsector-specific productivities.

The *fourth* point we think we agree upon is that to build this new paradigm, which requires new actors and is not at all at odds with the current paradigm, **we need information and economic research that is not available today.** The task is enormous. For our part we believe that from now on we will have to find a way to articulate UNIDO's research programme and its actions so as to move in that direction.

Prime Minister Sumaye has given us a very good set of recommendations on how to continue working on this issue. It is very important to combine what has been discussed at VENICE II in order to catalyze those *interactions* we referred to earlier (Introduction) between markets, institutions and economic agents. If we can think of the task in the light of the necessary inter-

actions, as well as thinking about independent reforms in one sector or another, we might get better results. We believe this idea needs refining. We are sure that it could benefit greatly from contributions from policy makers and decision-makers as well as scholars and private-sector representatives; we believe that one of the problems we used to have in assembling the right sort of policy recommendations is that we tended to think about singular problems as opposed to how problems relate to one another. When we talk about the need to improve institutions, which institutions are we referring to? And which sort of system-wide actions should those institutions develop?

For instance, developing countries are being urged to adopt intellectual property rights regulations often irrespective of recommendations on competition policies. As David Mowery explains in chapter 8, the latter played a critical role in the process of innovation and development in the United States, particularly for small and medium-sized enterprises. It does not follow that we can borrow those conclusions and apply them directly to the developing countries, but we do have to assess these experiences systematically and try to produce something from them.

The *fifth* and last point of this consensus we perceive is that **we need better standards to assess the performance of economic reform programmes and make them consistent with good governance**. This brings us back to the considerations we made at the beginning of this chapter and in the Introduction to this book.

It is our sincere hope that some of what has been discussed at VENICE II will be translated into practical help to developing countries. We think we have already reached the level of wealth, technology and knowledge we need to defeat poverty definitely—though *our conventional set of policy prescriptions may be preventing us from doing so*. Five years ago, it seemed, for example, that Latin America was well on track and we had nothing much to fear in that area. Enrique Iglesias has dramatically illustrated how the situation has changed since then (chapter 4). And we cannot say that it was because the policy prescriptions were radically changed. Now the problem is that many of the candidates that are leading in the opinion polls are saying that we have to "change the model". We do not know which other model they might be talking about. This is most hazardous. When leaders who are poorly informed about what has to be done just say that we need to change the model, then all of us—the international community and the policy makers—have a very serious challenge to contend with. It appears to indicate that, although there are no other powerful ideas to replace ours, our ideas are so weak that people have given up on them.

We have grown used to analyzing the evolution of the international economy through the performance of the stock markets in Europe and the United States, but it seems that we have forgotten to take due notice of other comparably meaningful facts—for example, that a quarter of the billion people who live in the Islamic countries are under 28 years old and unemployed. The

problem of employment for the youth, which is basically a problem for developing countries, is extremely serious. How are we going to address it? The Vice-President of Chile has mentioned that, in the case of mining, a very relevant sector for many LDCs, each job created costs them one million dollars. It seems obvious that we will need a multiplication of new entrepreneurs, new entrepreneurial activities, new undertakings, if we are to circumvent this kind of threshold-related problem.

How to achieve that? We do realize that we need myriad interventions aimed at enhancing system-wide performance. We shall work on the suggestions that have arisen from VENICE II and articulate some practical programmes based on them. UNIDO is not a big player in the international debate on development, but it is in a position to test some ideas at the field level. If we do this job well, our ambition will be fully rewarded.

SUBJECT INDEX

NAME INDEX

H

I

J

K

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UPDATING AND FLESHING OUT THE DEVELOPMENT AGENDA

Edited by C. Magariños and F. Sercovich

In a large number of countries where most of the population barely manages to earn subsistence wages, the success or failure of the *economic* agenda largely determines the fate of the *political* agenda, the quality of the democratic system and the potential for social advances. The conventional set of policy prescriptions does *not* ensure a positive mutual feedback between these two dimensions, the economic and the political. Such positive feedback depends vitally on productivity performance. This issue is at the core of the discussions reported in this book, which explores its variegated aspects with a view to proposing ways and means of approaching it.

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