

Regionalising Infrastructure Reform in Developing Countries

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Introduction

The principal conclusion of this paper is that regionalisation of infrastructure regulation is likely to yield significant benefits that go beyond exploiting economies of scale in both infrastructure industries¹ and regulatory institutions. Regional integration of regulation, combined with regionalisation of regulated firms:

- assists developing countries in overcoming national limits in technical expertise
- enhances national capacity to make credible commitments to stable regulatory policy
- facilitates the introduction of competition into historically monopolised markets
- improves the efficiency of infrastructure industries by allowing them to grow without respecting economically artificial national boundaries, and
- ultimately, increases infrastructure investment.

¹ The term infrastructure industry is not precisely defined in the economics literature. Here we focus on traditional network utilities – electricity, telecommunications, transportation, water – while recognising that similar arguments can be made for other industries with linkages to all or most industries in a regional economy.



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The primary impetus for reforming infrastructure in many developing countries came from the debt and fiscal crises of the early 1980s. Another major push came from the extraordinarily poor performance of most infrastructure industries in the vast majority of developing nations. Reforms in the transition economies were motivated by similar factors beginning in the early 1990s (Noll 2000a; Estache 2001; Kessides 2004).

Despite their origins in domestic concerns, infrastructure reforms also can have a substantial effect on production costs and marketing efficiency in trade-related, infrastructure-intensive industries (Noll 2000b). Consequently, infrastructure reform has become an important component of international trade policy.

Internationalisation of infrastructure reform has occurred for three reasons (Noll 1997).

First, as trade liberalisation reduced the role of tariffs and quotas in affecting the ability of a firm to compete in foreign markets, inefficiencies in infrastructure industries became more likely to determine the pattern of competitive advantage among domestic industries. Specifically, inefficient domestic infrastructure can cause otherwise efficient firms to lose both domestic and international sales to less efficient firms from countries with better infrastructure.²

Second, eliminating formal restrictions on trade (tariffs, quotas) does not eliminate the desire of some domestic industries to seek protection from foreign competition. In many cases, countries respond to this domestic political pressure by using regulation as a means to erect non-tariff trade barriers (Hahn 2000). Domestic infrastructure policies, in particular, can create substantial indirect trade barriers. For example, a highly inefficient transportation system can effectively protect inefficient domestic firms in the interior of a nation from competition from superior foreign suppliers by increasing the advantage of close proximity between buyers and sellers.

Third, both economic integration and technological progress have caused the natural market areas of infrastructure industries to expand, frequently transcending national borders, which frequently reflect historical colonial empires rather than common cultures and markets.³ Electricity,

² By some estimates, in countries such as Uganda, transport costs add the equivalent of about an 80% tax on clothing exports (ADB 2008).

³ This is consistent with the broader trend under globalisation of increasing geographic size of markets resulting from the decrease of the cost of doing business across national borders (Hahn 2000).

telecommunications and transportation operate more efficiently if their networks are organised according to the patterns of transactions, and trade liberalisation has made these patterns increasingly international. Moreover, adjacent networks frequently can minimise costs by sharing capacity to take advantage of differences in the time pattern of usage of infrastructure services.

Internationalisation of infrastructure reform is attractive because it contributes to the efficiency goals of policy reform while sidestepping some political obstacles. When implemented in each nation independently,

infrastructure reform can get bogged down in a quest for national advantage that undermines development for all nations in a region.⁴ In the quest for national advantage, each state is prone to favour fledgling domestic operators rather than established foreign entities that are capable of creating an integrated regional infrastructure system. National bal-

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kanisation of infrastructure firms, especially among smaller states, further reduces the effectiveness of reform.⁵ When markets naturally cross national boundaries, a regional regulatory agreement among neighbouring countries for mutual recognition of infrastructure operators facilitates the development of a seamless and competitive network.

Internationalisation of regulatory policy also has important political benefits. Within a single nation, regulatory reform, especially when debated one issue at a time, is often blocked or seriously distorted by well-organised interest groups. But if reform becomes part of a broader international policy that covers a range of issues, more interests are likely to participate, thereby reducing the likelihood that a single group will control or even block the reform. As the locus of regulatory decision making moves from

⁴ An example from telecommunications is termination charges for international calls. Many nations set exorbitant rates for the purpose of taxing foreigners to pay for part of the domestic network (Johnson 1989). If all nations follow this policy, the primary effects are to suppress international communications, to create dead-weight losses for all and to thwart opportunities for further economic integration that require inexpensive communications.

⁵ Balkanisation here refers to the break-up of national infrastructure firms into several competing utilities with potentially suboptimal scales of operation. It might also entail the delegation of federal powers to regional bodies of state policymakers and regulators.

the nation to the regional, both the number of competing interest groups and the likelihood that they will neutralise each other can increase substantially. Thus, internationalisation of regulatory policy has the potential to mitigate the problem of regulatory capture that has plagued national regulation in many countries.

Finally, the creation of an international regulatory institution, combined with regulated firms that serve a region rather than a single nation, increases the stability of regulatory reform. Many developing nations are politically unstable not just in the sense that political power frequently changes, but in that their governance systems are often radically revised when political power changes hands. Internationalisation of regulation creates institutions that can be changed only by mutual agreement among several nations, so that political change in one nation is insufficient to cause a radical change in regulatory governance unless a new government is willing to sacrifice all of the other benefits that arise from regional economic cooperation. Thus, internationalisation of regulation enhances the ability of nations to make credible commitments to a stable regulatory process and competitive infrastructure industries.

Small or poor nations that lack formal institutions and technical expertise have still another reason to internationalise regulatory reform. A pragmatic response to limited national regulatory capacity is to increase policy and regulatory coordination and cooperation – and ultimately to create regional (multinational) regulatory authorities. These regional bodies can be an effective means for disseminating information and expertise from countries that are further along the reform path to nations that are just beginning their reform process. Regional regulatory authorities also facilitate efficient pooling of scarce technical expertise and thus help especially poor small countries to overcome their capacity constraints in implementing effective regulation.

Regional regulatory initiatives are under way in several parts of the world. However, these initiatives have often encountered significant implementation challenges. Although the benefits of regional regulatory cooperation can be substantial, obtaining consensus from all governments in a region for multinational/regional regulatory agencies can be problematic due to different attitudes and commitments towards reform, as well as concerns about national sovereignty. Thus, we consider a wide range of regionalisation options that lie between complete national autonomy (the

national regulatory authorities retain full jurisdiction over all areas of regulatory policy, with the role of a regional body being limited to facilitating information exchange, acting as a source of centralised technical expertise and issuing non-binding guidelines) and full integration (the governments of the region surrender their sovereignty on regulatory and related policy decisions to a regional authority).

The nexus between infrastructure and economic integration

Since the creation of the International Monetary Fund (1945) and the General Agreement on Trade and Tariffs (1948) at the end of the Second World War, the world has experienced a dramatic intensification of economic and financial integration. The pace of integration accelerated in the last two decades of the twentieth century as trade and capital account liberalisation and technological innovation in transportation and telecommunications led to a dramatic increase in the international exchange of factors of production and final products.

Economic globalisation has been matched with a parallel movement towards regional economic integration. The importance of regional economic integration derives from creating opportunities to expand trade, coordinate investment, enlarge local markets and foster more efficient industrialisation by taking advantage of the economies of scale. Several experiments in regional economic integration are under way across the globe. In Latin America and the Caribbean region alone, more than 20 reciprocal trade and integration accords emerged since the mid-1980s (IDB 2000).

An important reciprocal relationship exists between infrastructure and regional economic integration. Efficient infrastructure is necessary for globalisation and regional integration to achieve their maximum potential to expand and integrate markets, exploit economies of scale, and attract foreign direct investment and technology. The development of regional markets creates interdependencies that increase the demand for infrastructure.⁶ After all, infrastructure networks are the conduits through which these flows move. Transportation infrastructure is at the heart of regional integration. Traded goods flow through roads, railways, inland

⁶ In addition to inadequate infrastructure, intra-regional trade is often hampered by the lack of transparent, rules-based harmonising regulatory regimes and investment codes in the regional agreements.

waterways, ports and airports, as do people seeking to take advantage of attractive services or job opportunities in other nations. Therefore, an efficient and integrated transport system facilitates trade and factor mobility. An integrated communications system also can spur the growth of trade as well as reduce costs by enhancing the accessibility and affordability of information, facilitating long-distance transactions, and linking the region with the rest of the world (Commission for Africa 2005). Not surprisingly, limited development of transport, communications and energy networks is one of the most frequently cited obstacles to cross-border trade and investment in many regions of the world.

Whereas infrastructure has long been recognised as having a crucial role in facilitating economic integration, some ancillary propositions are not widely recognised. First, greater welfare gains from economic integration can be realised through deeper forms of regional integration that entail harmonisation of legal institutions. Second, reforms that reduce cross-border transaction costs and improve the performance of infrastructure services are arguably more important for the creation of an open, unified regional economic space than trade policy reforms narrowly defined (Stiglitz 2006). Third, all economies benefit from more rational use of resources that arises from coordination of regional infrastructure development.

For these reasons the framework for regional economic integration in several parts of the world includes coordination of policies in core infrastructure industries such as transport, telecommunications and electricity (APEC 2007). Infrastructure development is included in many regional treaties to provide the framework for aligning sector policies, designing regional master plans, developing a portfolio of synergistic projects, harmonising regulatory regimes and investment codes, and mobilising investment resources (Box 1). Increasingly, nations are moving away from integration strategies that are based solely on formal trade agreements and towards strategies that include at least some integration of infrastructure policies (Moreira 2006).

Disparities of regulatory treatment across borders introduce distortions that hinder both trade and regional investment patterns. Similarly, market restructuring in infrastructure industries generates greater benefits if it is accompanied by parallel reforms and reciprocity across countries. Otherwise, significant differences in market structures and regulatory

BOX 1**Initiative for the Integration of Regional Infrastructure in South America (IIRSA)**

The initiative was adopted at a meeting of South American presidents held in Brasilia, Brazil, in August 2000, at which the region's leaders agreed to take joint action to promote South American political, social and economic integration that includes the streamlining of regional infrastructure. The IIRSA Initiative is based on two fundamental areas of action, as follows.

1. Spatial planning: recognising the geopolitical and socioeconomic situation of the continent, governments agreed to organise the South American space into transnational corridors that concentrate population, current and potential production and trade flows of the region, and are intended to gradually converge into a common standard of quality of transport, energy and telecommunications infrastructure services. These transnational corridors, known as integration and development hubs, are large regions of South America that generate intraregional and global business opportunities, or have the potential to generate important investment and trade flows.
2. Convergence of institutional standards and mechanisms: governments have set up a series of working groups and dynamics to improve understanding and promote the eventual dismantling of regulatory, legal, operating and institutional barriers and restrictions that limit the efficient use of existing infrastructure and hinder investments in new infrastructure, with the aim of promoting free trade in goods and services within the region.

Thus the IIRSA's action plan calls for: (a) strengthening national investment planning and coordination among countries; (b) standardising and harmonising regulatory and institutional aspects; and (c) developing a portfolio of projects that encourage private-sector participation and innovative financing schemes.

The countries agreed on a common portfolio made up of 348 infrastructure projects grouped into 41 project groups with an estimated investment amount of US\$38 billion at the beginning of 2007. Additionally, the governments selected a limited set of high-impact projects for physical integration in South America to which special attention will be paid for their short-term funding and execution with an estimated investment amount of US\$6.3 billion.

Sources: Moreira (2006); <http://www.iirsa.org>; <http://www.caf.com>

policies can hinder cross-border trade. Hence, regulatory harmonisation has become an important component of regional economic integration.

International regulatory reform and trade

Initially the regulatory reform debate was regarded primarily as a domestic economic policy issue. But international economic liberalisation has made internationalisation of regulatory reform inevitable, and not just because the social and economic problems that give rise to regulation sometimes cross borders, as is emphasised by advocates of international environmental regulation. Even without cross-border externalities, regulation inevitably is an international issue because, when other trade barriers are low, regulation can become the most important cause of trade distortions.

Regulatory distortions take two conceptually distinct but frequently overlapping forms: domestic and international. This two-fold division implies a prioritisation scheme: focus international agreements on regulatory issues that cause significant international distortions. The inefficiencies of regulation that are purely domestic do not necessarily imply an international priority for reform. Whereas these effects are unfortunate, the costs mostly are confined to the country that causes them.

If inefficient regulation has significant international repercussions, coordination and cooperation among nations in regulatory reform has the same status as multinational arrangements for reducing direct trade barriers. Mutuality in reform creates economic benefits that are broadly shared among domestic consumers and trading partners.

As a practical matter, very little distorting regulation has purely domestic effects. International boundaries rarely define natural market barriers, and in most cases the most efficient organisation of an industry is international. For example, infrastructure industries operate more efficiently if their networks are organised according to the pattern of transactions, and in a relatively open world economy, these patterns do not respect national borders. But even if markets are national or even local, entry by foreign firms can be an important source of price competition and productivity improvements. Even many segments of retail trade are more efficient if international chains of outlets and, of course, electronic commerce are permitted. Hence, both market access for foreign-made goods and openness to foreign investment promote economic growth, and regulations that pre-

vent either create distortions of international significance. International agreements about regulation are the natural vehicle to eliminate these distortions.

The growing movement for regulatory reform throughout the world has increased the potential significance of internationalising the reform process. If some nations are operating a relatively efficient regulatory system while others are not, international cost differences arising from regulation are likely to surface as political issues in high-cost countries. Perhaps the result will be reform, but another plausible scenario is protection against ‘unfair’ competition. Initiating multisectoral international negotiations over phased reform offers the opportunity to seize the initiative, casting the agenda in terms of improved efficiency rather than retaliation against unfair trade. Domestic reforms that enfranchise competition policy agencies facilitate free trade by promoting reforms of regulatory policies that erect entry barriers. Reforms that impose mandatory benefit–cost analysis facilitate free trade by creating a stronger information base for international dispute resolution institutions to challenge regulatory trade barriers. Finally, designing these same dispute resolution entities to incorporate the principles of competition policy and economic policy analysis has two potential benefits: identifying regulations that have no plausible rationale other than to disadvantage foreign competition, and, beyond this, reducing the degree to which differences in regulatory policy create differential regulatory efficiency. Both effects of the internationalisation of regulatory reform serve the objectives of promoting openness and helping eliminate an important source of distortions in the international economy.

The benefits of regionalising regulatory reform

Regionalising regulatory policy has the potential to reduce the vulnerability of national regulatory systems to political and industry capture, and help developing countries overcome their constrained regulatory capacity through the pooling and efficient allocation of scarce regional resources and technical expertise. It can effectively create an institutional mechanism that imposes restraints on arbitrary administrative intervention at the national level, and thus give potential investors the needed assurance that the value they add to infrastructure will not be expropriated. This assurance could facilitate private infrastructure investment in regions where it

is urgently needed, and where it has been historically hampered by the inability of national governments to credibly commit to a stable and fair regulatory process.

Political factors influencing domestic regulation and the risk of capture

The textbook ‘public interest’ theory of regulation presumes that the purpose of regulatory intervention is the enhancement of economic welfare via improved efficiency and that regulatory agencies faithfully pursue this objective. The ‘positive political theory’ (PPT) of regulation explicitly challenges these assumptions. PPT seeks to explain how particular forms of regulation emerge and change by evaluating the gains and losses of organised interests arising from alternative institutional arrangements. This model of regulatory policy decisions identifies two extreme conditions that produce poor performance by regulated firms: ‘capture’ (when regulators work to enhance the market power of a regulated firm) and ‘expropriation’ (when regulators refuse to allow a regulated firm to recover the reasonable long-run costs of service). According to PPT, where a regulatory agency lies on the continuum between capture and expropriation depends on how it is organised, the resources that it has and its relationship to the political process.

The PPT of regulation is based on simple but important insights. Regulation is a coercive policy instrument that can be used to provide valuable benefits to particular groups. All regulatory policy decisions are inherently conflictual in that they pit one firm against another or suppliers against their customers. PPT views regulatory policy decisions as the result of a competition among organised interests seeking their own private gains. But this competition does not normally produce an efficient outcome due to representation bias – that is, some groups have few or no resources to devote to influencing regulatory policy.

Participants in the regulatory process seek to influence policy in several ways. One way of exercising influence is to seek intervention by political allies; another is to submit information to regulators that supports a favourable decision. Still another is outright corruption. All of these require that an interest has financial and political resources to expend on regulatory policymaking processes. Representation bias arises because groups differ in their access to these resources.

An important source of representation bias is incomplete information. Because information is imperfect, policymakers seek data from more expert sources. For information pertaining to the details of technology, demand and costs in an industry, those who supply services frequently have extensive private information that is necessary for making efficient policy. Because all parties can be expected to submit information that is beneficial to their interests, on balance the effect of the information that they do submit will bias policy outcomes in favour of those with relevant private information, such as the incumbent infrastructure monopoly provider.

Another equally important source of representation bias relates to the interests and experiences of regulators. This bias arises when agencies are staffed by officials who are not fully representative of all the groups affected by a regulatory policy, whether organised or not. For example, in a parliamentary system with ideologically based parties, each important economic interest (say, labour versus owners, or one industry versus another) may be represented by only one party, so that swings in the partisan control of government cause swings in the identity of the advocates that regulators will favour. In addition, regulatory officials may be inclined to favour some interests for other than political reasons. For example, regulators may expect to have short government careers, and so may seek to enhance their post-regulation prospects by favouring a likely future employer. Or, some specialised skills of regulators may be obtained or usefully applied only in organisations that actively participate in the regulatory process, so that regulators naturally are inclined to think like those who are represented before their agency. An example of a common source of representation bias in newly liberalising countries arises when the staff of the regulatory agency is selected from among the staff of the incumbent state-owned service provider or the ministry that oversees its operation.

Representation bias can lead to the common problem of regulatory capture because regulated firms are generally much better organised and able to manipulate the political process than are their customers and suppliers. This happens in two main ways. First, producers may work through elected officials to have laws passed and decrees issued that correct what they perceive to be a pressing problem. Sometimes the problem is alleged destructive competition. Or it may reflect producers' desire to avoid splitting the market through new entry. Second, even when elected officials

have only the public interest at heart in passing regulatory laws, and regulatory agencies are established for ‘public interest’ purposes, they subsequently can become the tools of the industry they regulate. This happens because the regulated enterprise has superior technical knowledge upon which regulatory agency staffs come to depend, as noted earlier, and because regulated firms can use their political influence to have friendly regulators appointed.

The risk of expropriation and the importance of commitment

Services delivered by infrastructure industries are both economically and politically important. Their economic importance arises from the fact that they are used by virtually the entire population and are regarded as essential for both a reasonable standard of living and the efficient operation of much of the economy. These industries account for as much as 10% of gross domestic product and, because they are capital intensive,

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represent as much as 20% of gross domestic investment. Consequently, expenditures on infrastructure services at cost-based prices represent a substantial proportion of the budget

for many households, and can be beyond the means of the poorest families if the industries are inefficient and their services are not reasonably priced. Moreover, since infrastructure services are essential intermediate inputs for other sectors of the economy, their quality and prices are a major determinant of the production costs and international competitiveness of infrastructure-intensive industries.

The political significance of infrastructure industries arises from both their economic importance and their ubiquitous consumption by all or nearly all citizens. Because of their importance and ubiquitous presence, the prices of infrastructure services typically are scrutinised by interest groups and even the general public, and so receive considerable political attention. In fact, public opinion frequently opposes a policy for consumers to pay the full cost of services, and this attitude, if present, changes relatively slowly. As a result, price increases frequently generate considerable public opposition.

These characteristics can motivate governments to behave opportunistically vis-à-vis privatised utilities. The fact that utility industries are

monopolistic and provide services that are deemed essential leads to considerable public scrutiny of their conduct and politicisation of their prices. The presence of only one or two utility operators raises immediate concerns about concentrated power, excessive prices and profits, and restriction of freedom of choice. Also, since utility services are massively consumed, they create significant opportunities for political mobilisation.

A utility can continue operating so long as operating revenues exceed operating costs. Because a large portion of infrastructure costs are fixed and sunk, once the investment is made, operating costs are only a small fraction of total costs. Moreover, fixed assets with sunk costs, by definition, cannot be redeployed elsewhere. Thus, utilities are vulnerable to administrative expropriation of their quasi-rents, i.e. revenues in excess of operating costs that recover sunk costs. For example, after an investment in a utility is made, the government can effectively expropriate this investment by setting prices too low to allow full recovery of sunk costs. In addition, political interference in investment and operations decisions for the purpose of benefiting core support constituencies of incumbent politicians can cause unnecessary cost increases by dictating inefficient investment, procurement and employment practices.

Private utilities and investors that are vulnerable to administrative intervention can be expected to demand high-risk premia and to under-invest in infrastructure unless the government is able to make a credible commitment not to expropriate these sunk costs. Therefore, a necessary condition for effective private participation in infrastructure is the creation of mechanisms that enforce substantive and procedural restraints on regulatory discretion and limit political opportunism in regulatory policy.

The extent of the commitment problem is determined by the interaction of technology and politics – the characteristics of the technology underlying the industry's production, the demand facing its products, and the country's institutional and political endowment. In sectors like water, where technology is changing very slowly, the rate of depreciation of investments is low and the product is considered vital to human life, sunk costs and the risk of expropriation are very high. In telecommunications, on the other hand, technology is changing very rapidly, the rate of depreciation is high, and the product, while important, is not as vital to human life. Thus the risk of expropriation is lower and the commitment problem will be less severe.

Regulatory design implications

The solution to both capture and expropriation is the same: to construct a regulatory agency that is unlikely to be unduly influenced by any particular interests. Basically, the design of the agency must: allow regulators to have access to as much relevant information as is needed to make reasonably efficient decisions; ensure that the decision makers are neither homogeneous in their biases nor subject to unbalanced external pressure; and create a mechanism whereby neutral arbiters can intervene if an agency makes an unreasonable decision. These requirements raise three quite different organisational issues: how to design the decision-making process within an agency; how to connect the agency to the larger system of government; and how to articulate and enforce the principles for deciding whether an agency has acted unreasonably or unfairly. International experience suggests that these objectives can be better achieved with the following arrangements.

- The regulatory agency personnel are non-partisan and stable – short-term changes in the political control of government should not cause dramatic swings in the composition of the agency.
- The agency is given independent authority and resources to compel information from regulated firms, to generate information on its own and to represent interests that otherwise are not organised to participate in its processes.
- The agency is subject to openness requirements.
- The agency is required to publicly articulate the basic economic principles that guide its policy decisions.
- The agency has a competent, non-political, professional staff, expert in the relevant economic, accounting, engineering and legal principles, and familiar with good regulatory practice elsewhere.

An independent judiciary that is skilled in adjudicating disputes involving arcane technical information and that adheres to the rule of law is also necessary to ensure that the regulatory agency is performing its functions honestly and competently. Well-developed economic, accounting, engineering and legal skills are required for regulatory functions such as monitoring industry performance, analysing cost data, dealing with information asymmetries and analysing the behaviour of regulated firms. The unfortu-

nate part of the above litany of procedural and structural safeguards is that they are costly to implement and assume the presence of a cadre of technically trained civil servants and a highly developed legal system, neither of which is present in many developing countries (Kahn 1996).

In some large developing countries with a substantial middle class, these safeguards may be present and affordable, so that a recommendation to implement western-style regulatory agencies is not out of the question. In many (especially small) developing countries, on the other hand, the domestic supply of professionals to implement this kind of regulatory system is low and inelastic, the political system is unstable, and the rule of law enforced by a competent independent judiciary is not in place. Thus in many developing countries the necessary conditions for effective infrastructure regulation are not likely to be satisfied, creating a significant, long-run barrier to the efficient delivery of infrastructure services.

Regionalising regulation to mitigate representation bias and facilitate commitment

An important advantage of regionalising regulatory reform is that it can be used to elevate the domestic political debate about regulation from narrow particularistic issues to matters of national economic performance and regional economic cooperation or integration. From a political perspective, making regulatory reform a regional issue is highly desirable. A common political barrier to domestic regulatory reform is that, if reform is perceived as a domestic matter and debated one issue at a time, well-organised special interests are more likely to have the political power to block it. For most specific regulatory issues, the beneficiaries of reform are numerous, but their per capita benefits are frequently too low or indirect to generate significant political pressure for reform. If the reform debate is elevated to a matter of regional policy that encompasses numerous reform issues, broader attention and participation from all interests is more likely, thereby reducing the ability of a single group to block reform.

A useful analogy is to the process of setting tariffs. When each nation independently sets each tariff, the outcome is likely to be tariffs that are higher than the tariffs that would be negotiated bilaterally as part of a comprehensive regional trade agreement. The reason is that debating tariffs one product at a time maximises the opportunity for organised interests with a direct stake in a policy to be unduly influential. If a tariff on a

specific product is under review, the domestic industry that produces the product is likely to be intensely interested to exercise whatever political influence it has to obtain a policy decision favourable to itself. However, because the final price of the product is less important to each buyer than to each producer, the former are less likely to participate in the debate. Consequently, each important domestic industry may receive and preserve a tariff or a favourable regulation when policy is debated in a purely domestic context one industry at a time, but receive neither protective tariffs nor protective regulation when policy is developed regionally and covers many industries.

When each regulation is considered separately as a matter of domestic concern within a specialised agency, the government is likely to be under less pressure to adopt an efficient policy. If a regulation imposes unnecessary costs uniformly on firms in a domestic industry, sales of the industry's product may be suppressed somewhat by higher prices, but the individual firms are unlikely to suffer very much because none is being disadvantaged relative to a competitor. If regional/international trade threatens the industry, however, the industry will energetically seek relief. The politically expedient response may be to inhibit trade competition, either by using regulation as an indirect trade barrier or by banning trade while invoking a rhetorical attack on the lax standards of a trading partner. This approach placates the regulated industry and the other interests that place high value on the regulatory policy. The primary organised interest that is harmed, that of foreign producers, is more easily ignored because they do not participate in domestic politics.

Just as simultaneous negotiations over tariffs on all products facilitate reaching agreements that provide freer trade, so too simultaneous negotiations of numerous areas of regulation facilitate eliminating indirect trade barriers. As with tariffs, the inclusion of multiple regulatory policies within the same negotiation creates more opportunities and more mutually beneficial bargains to reduce distortions simultaneously on all fronts. Thus, the incorporation of regulation into regional trade agreements should follow the same principles that have been generally followed with respect to tariffs and quotas. Specifically, if regulatory policy is part of a regional/international agreement, it must reduce, not increase, distortions in the regional/international economy, and extend, not contract, the extent of liberalisation. Introducing regulation into single-product negotiations is

prone to lead to increased trade distortions (by using regulation to inhibit trade). In particular, negotiations about a single product or area of regulation run the risk of creating an alliance between protectionists and the most ardent advocates of a particular regulatory policy who seek regulations that go far beyond those that maximise net social benefits.

The same argument applies to the enforcement of agreements not to adopt anticompetitive regulations. If enforcement powers reside solely in domestic agencies, a case in which a regulation disadvantages foreign producers rests on unbalanced underlying politics. Domestic producers are likely to be more effectively represented than foreigners in the agency and the background political system in which the agency must operate. And domestic regulatory agencies are frequently willing to sacrifice competition as well as some of the effectiveness of regulatory policies in order to advantage domestic producers. Regional institutions for resolving regulatory issues, on the other hand, operate in a more balanced political environment. These institutions can be a means through which nations mutually can commit to maintain pro-competitive regulatory reforms.

For these reasons, regionalisation/internationalisation of regulatory reform can succeed by enfranchising foreign producers in domestic regulatory policy across a spectrum of industries. In the context of a dispute about the trade effects of a particular regulation, intervention by an international organisation frequently is met with cries of outrage – an intervention by foreigners into domestic policy. All international agreements entail some loss of the ability to act independently in order to achieve something else of value, which in this case is a worldwide regulatory system that is more efficient and freer of trade distortions. Such an institution generates net economic benefits to each country, even if some cases create domestic losers. The creation of institutions for enforcing agreements to eliminate indirect trade barriers is a means to balance the political influence of these domestic losers.

Regionalisation to overcome technical capacity constraints

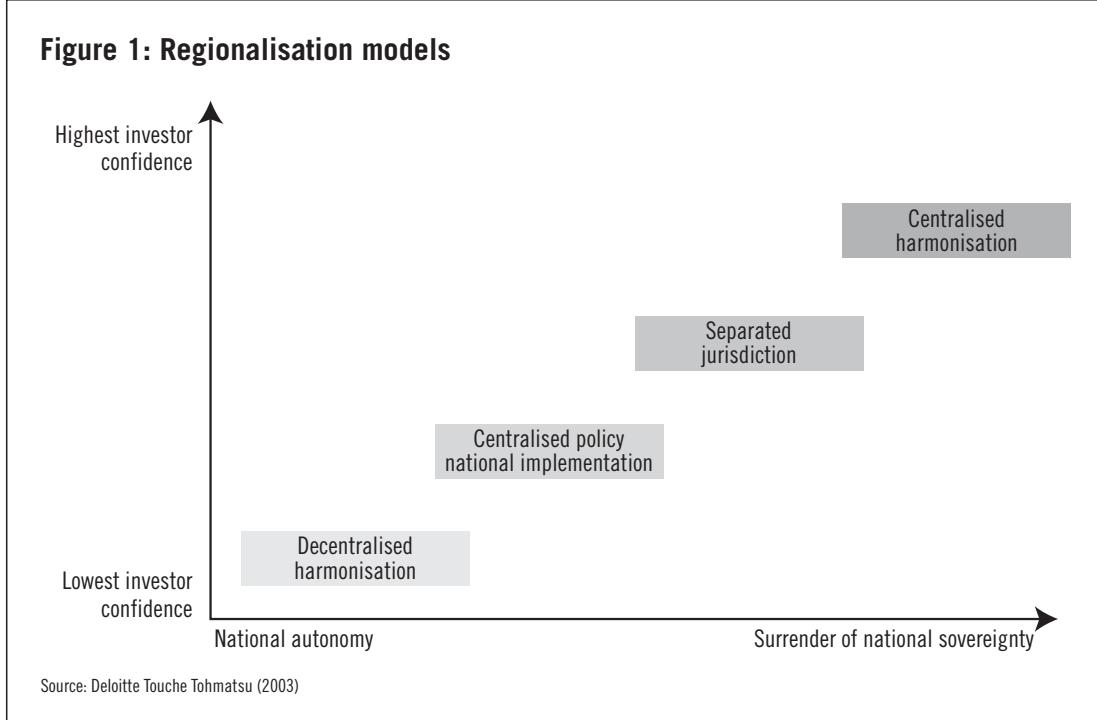
Effective regulation in infrastructure sectors requires professional staffs that are expert in the relevant economic, accounting, engineering and legal principles, and familiar with good regulatory practice elsewhere. These types of specialised skills are also needed in the regulated firms. Therefore, the question arises whether some of the poor and especially

small developing countries would have a sufficient supply of specialists to staff their regulatory agencies, run their utilities and provide for policy capacity within the relevant sectoral ministries.

The principal difficulty is not in finding a few competent regulatory commissioners. All that is required of an agency's commissioners is to be at least somewhat familiar with the broad regulatory issues and to have some relevant expertise. Commissioners do not need to be up-to-date economic or technical experts. Instead, the more challenging task is to find the necessary expertise for the agency's staff, which performs economic and technical policy analysis, and provides institutional continuity for the development and responsiveness of the regulatory system (Stern 2000). The number of technical staff that is necessary to regulate infrastructure industries is very large, and in small, poor nations the number of people with the requisite expertise can be quite small. By pooling resources among nations, regional regulatory authorities alleviate some of the problems that arise from the scarcity of technical and economic expertise at the national level. Moreover, even in middle-income nations, national regulatory agencies can have a high fixed cost relative to market size (Noll 2000b; Stern *et al.* 2008). The creation of regional regulatory authorities can spread the fixed costs of regulation among the larger population of a regional economic community.

Spectrum of regulatory regionalisation options

Obtaining consensus from all governments in a region for a regional regulatory authority is problematic due to different attitudes and commitments towards reform, as well as concerns about national sovereignty. It requires considerable cooperation and trust between countries – perhaps more than now exists in many parts of the world. Thus, initially, regional regulatory cooperation might be a more realistic option for alleviating scarce regulatory expertise and resources. As a first step, a regional regulatory entity could be established to facilitate information exchange and offer non-binding advice on technical matters. But consensus for multinational/regional regulatory agencies could increase as more countries reform, gains from regional policy coordination and trade become more apparent, and countries (especially small ones) confront the costs and staffing challenges of creating and maintaining national regulators.



Regional harmonisation is not a binary variable. It entails a wide range of policy options that lie between complete national autonomy and full integration (Figure 1). At one extreme, the members of the community surrender their sovereignty on regulatory and other policy decisions to a regional regulatory authority (RRA). At the other extreme, the national regulatory authorities (NRAs) retain full jurisdiction over all areas of regulatory policy and decision making, with the RRA's role limited to disseminating information, issuing non-binding guidelines and acting as a source of centralised technical expertise.

We describe below the range of regulatory regionalisation options in the telecommunications sector.⁷ Clearly, the analysis can easily be extended to the other network industries.

Centralised harmonisation

Under full, centralised harmonisation, the RRA has the statutory authority to make policy determinations that are binding on the member states. Moreover the RRA has the legal power to enforce those decisions and to

⁷ This section is based on Deloitte Touche Tohmatsu (2003).

impose penalties on non-complying member states. Thus, the RRA has the authority to:

- regulate end-user prices, impose quality of service requirements on all licensed telecommunications operators in the region and attach penalties for non-compliance
- regulate the terms and conditions of access to essential (bottleneck) telecommunications facilities, and intervene to resolve interconnection disputes
- manage and allocate the frequency spectrum in the region
- issue licences for all telecommunications services throughout the region
- pre-empt local and national rules regarding rights of way
- collect and disburse funds to support universal service and other social goals in the telecommunications sector
- represent the region in international organisations and forums.

Under centralised harmonisation, the NRAs have no independent policymaking authority. Instead, their role is limited to providing an input into the consultative process of the RRA, supplying data on national market conditions and advising on implementation issues.

The centralised harmonisation model treats the entire region as a single, unified economic space. Thus, it offers the greatest opportunity to exploit regional economies of scale in the telecommunications industry. It could also reduce the cost of doing business in the region by streamlining administrative processes and lowering the regulatory costs of entry (e.g. by facilitating the acquisition of licences and permits through ‘one-stop shopping’). However, the establishment of a supranational regulatory authority could properly raise concerns about accountability and the need for checks and balances on the powers of such authority.

Separated jurisdiction

Under separated jurisdiction, the RRA has the mandate to regulate all cross-border telecommunications transactions. It also represents the region in international forums. The NRAs retain full regulatory authority over telecommunications transactions and services that do not cross national borders. This model roughly corresponds to the US system of dual state and federal regulation over telephone service, whereby the

Federal Communications Commission has jurisdiction over interstate telecommunications transactions and the state public service commissions have authority over all intrastate services.

Centralised policy/national implementation

Under this model, the RRA issues binding regulatory and other policy directives, which are then adopted and converted into law by the member states. The NRAs have the full responsibility to implement and enforce these directives. Thus, each member state retains its sovereignty over regulatory matters but is obligated to implement its national policies in accordance with the overall policy recommendations and directives issued by the centre.

In this model, the RRA acts as a policymaking body that establishes regional policy through a consultative process. It is very similar to the one adopted by the European Union where the Commission formulates policy and issues directives that have the force of European law, but it is the responsibility of the member states to adopt the directives into national laws and regulations, and thus to establish and implement national regulation.

This model treats the entire region as a single economic space while at the same time recognising the importance of national sovereignty and the reality of significant cross-country differences in institutional endowments and legal structures, traditions and processes. The practical outcome of this compromise between maintaining national sovereignty and pursuing regional policy harmonisation is likely to be the uneven adoption and implementation by the member states of policies developed by the regional authority. Inevitably, some member states will be slow and reluctant to implement the RRA directives into national laws and regulations.

Decentralised harmonisation

Under this model, the RRA acts as a central source of technical expertise, undertakes regional and benchmarking policy studies, facilitates information exchange, publishes reference papers that summarise the emerging international experience on important policy issues, and organises regional training programmes. The RRA has no regulatory authority but can issue non-binding regulatory and other policy guidelines.

While this model, at least in the early stages of regional integration, represents the most realistic organisational option, it offers very little

assurance that uniform and consistent regulatory policies will be effectively implemented across the region. Thus, trade distortions created by differences in regulatory efficiency among the countries of the region are likely to persist.

The West African Telecommunications Regulators Association

The Economic Community of West African States (ECOWAS) was founded on 28 May 1975, when 16 Anglophone, Lusophone and Francophone countries signed the Treaty of Lagos. ECOWAS comprises 15 countries: Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.⁸ The primary objective of ECOWAS is to promote regional cooperation and integration, and to create a unified economic space in order to facilitate economic growth and development in West Africa. The preamble to the 1975 ECOWAS Treaty notes that the community was created because of the 'overriding need to accelerate, foster and encourage the economic and social development of member states in order to improve the living standards of their peoples' (Aryeetey 2001). ECOWAS saw regional integration as a multistage process leading to a customs union and, ultimately, to the establishment of an economic and monetary union that would raise the living standards of its people and enhance economic stability in the region.⁹ The key elements of ECOWAS's policy have been to eliminate all tariffs and other trade barriers between the member states, and to establish a customs union, a unified fiscal policy and coordinated regional policies in the transport, communications, energy and other infrastructure facilities (AJIBEWA 2002).

In 2002, ECOWAS created the West African Telecommunications Regulatory Association (WATRA), an organisation of regulators and the respective responsible government ministries of West Africa territories. WATRA's key objectives are to:

- encourage the establishment of modern legal and regulatory structures for telecommunications service delivery in all member states of ECOWAS

⁸ In 2000, Mauritania withdrew its membership from ECOWAS.

⁹ Lecture by ECOWAS Executive Secretary, Mohamed Ibn Chambas: 'The ECOWAS agenda: promoting good governance and regional economic integration in West Africa'.

- promote regulatory harmonisation, and the adoption of uniform technical and quality standards for telecommunication services and equipment
- encourage increased market liberalisation and competition initiatives
- support universal access
- contribute, through the progressive integration of regulatory mechanisms, towards sub-regional market integration in the telecommunications sector
- contribute to human resource and capacity-building efforts in emerging information and communications technologies in the sub-region.

In furtherance of these objectives WATRA may:

- deliberate on issues relating to telecommunications regulation and make recommendations to governments of members
- collaborate with other international organisations and public and private initiatives involved with the modernisation of the structures for telecommunications service delivery in Africa
- take any other action and adopt any other measure it may deem necessary or desirable for the achievement of its objectives.

Thus, WATRA is primarily a consultative body. It can formulate common regional policy objectives and issue non-binding guidelines to the NRAs on regulatory and technical issues. However, the member states will retain final authority over policy implementation. Thus, the institutional structure of WATRA is closest to the decentralised harmonisation model (Figure 1).¹⁰ Still, WATRA could exercise considerable influence over regional regulatory policy and make a substantive contribution towards regulatory harmonisation by aggregating relevant data and case experience, facilitating cross-border benchmarking, and developing mechanisms for regional consultation and consensus building. Such consultative mechanisms could encourage the active participation of NRAs, operators and potential investors in formulating future regulatory policies, and thus assist in achieving more uniform and consistent regulatory policies at the regional level.

¹⁰ The statutes of ECOWAS's founding treaty require its member states to adopt and implement community policy objectives and directives into their national legislation. However, ECOWAS presently lacks the authority to enforce compliance. Thus, the intent of the ECOWAS treaty was to adopt the Centralized Policy/National Implementation harmonisation model.

In September 2005, WATRA took on the leading role in approving the ECOWAS telecommunications guidelines on key regulatory issues at an Ordinary General Meeting in Accra.¹¹ These guidelines formed the basis for ECOWAS Telecommunications Directives and were adopted

BOX 2

Other African regionalisation initiatives

Economic community: South African Development Community (SADC).

Member states: Angola, Botswana, Democratic Republic of the Congo, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe.

Related telecommunications association: Communications Regulators Association of Southern Africa (CRASA).

Economic community: Common Market for Eastern and Southern African (COMESA).

Member states: Burundi, Comoros, Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia, Zimbabwe.

Related telecommunications association: Association of Regulators of Information and Communication in Central and Eastern Africa (ARICEA).

Economic community: Central African Economic and Monetary Community (CEMAC) and Economic Community of Central African States (CEEAC).

CEMAC member states: Cameroon, the Central African Republic, Chad, Democratic Republic of the Congo, Equatorial Guinea, Gabon.

CEEAC member states: Angola, Burundi, Cameroon, Central African Republic, Chad, Democratic Republic of the Congo, Equatorial Guinea, Rwanda, Gabon, Principe, Republic of Congo, Sao Tome.

Related telecommunications association: Central African Telecommunication Regulators Association (ARTAC).

Source: *InfoDev/ITU* (2006)

¹¹ For full text, see http://www.itu.int/newsroom/press_releases/2005/12.html.

by ECOWAS Ministers in 2006. These efforts were a first in Africa and could set an example for other sub-regions in Africa (Box 2) and around the world.

The Eastern Caribbean Telecommunications Authority

The Organization of Eastern Caribbean States (OECS) was established in 1981, when seven eastern Caribbean countries (Antigua and Barbuda, Commonwealth of Dominica, Grenada, Montserrat, St Kitts and Nevis, St Lucia, and St Vincent and the Grenadines) signed a treaty agreeing to cooperate with each other, promote unity and contribute to the sustainable development of the member states through the creation of a single economic and financial space in the region. Since the founding of OECS, its member states have established several subsidiary institutions to promote growth and development in the region.

The economies of the OECS were facing during that period the dual challenge of slowing economic growth and persistently high unemployment and poverty rates. One important characteristic of the economies in the region was their heavy dependence on agriculture. Regional economic dynamism was affected by reduced preferential market access for traditional crop exports, stiffer competition from other tourism destinations, and growing macroeconomic instability. The region urgently needed to identify and carve out new areas of competitive advantage in the global economy, and to create a more stable and less vulnerable platform for economic development and poverty reduction. Thus, regional leaders recognised the need to diversify their economies and place greater emphasis on services. However, inefficient telecommunications services were seen as posing a serious obstacle to such a regional economic transformation. The telecommunications sector in the region was characterised by monopoly control, high costs and low service quality, limited access to technology and telecommunications infrastructure and shortage of skilled personnel.

In 1998, five members of OECS – Dominica, St Kitts and Nevis, Grenada, St Lucia and St Vincent – signed an agreement establishing a common regulatory framework for their telecommunications sectors. This agreement signified a strong commitment by these member states to a comprehensive telecommunications reform agenda that included extensive measures of liberalisation and the renegotiation of the Cable

& Wireless exclusive licence to provide telecommunications services in their territories.¹² The exclusivity clauses in Cable & Wireless's licence were deemed outdated and injurious to the economic development of the member states because they prohibited the entry of competitors offering innovative services that exploited the revolutionary changes in telecommunications technology. Moreover, Cable & Wireless, which was guaranteed a 15% rate of return on all its investments, had no obligation to pursue universal service goals.

To facilitate the harmonisation of their telecommunications regulatory frameworks, the five member states signed a treaty in 2000 creating a regional regulatory body. The Eastern Caribbean Telecommunications Authority (ECTEL) – the first regional telecommunications regulatory authority in the world – was established to provide advice and make recommendations on telecommunications matters, and help manage the sector in the member states. At the state level, National Telecommunications Regulatory Commissions (NTRCs) remained responsible for the implementation of regulations and policies with technical assistance from ECTEL. Thus, the NTRCs were to monitor and enforce regulations, manage the licensing process, collect all fees (licences and use of spectrum), engage in dispute resolution, inspect and certify customer premises equipment and wiring, and monitor and report on spectrum use and interference.

The primary substantive function of ECTEL was to coordinate a regional reform agenda and facilitate the liberalisation of the telecommunications sector by designing a transparent, objective, competitive and investor-friendly licensing and regulatory regime. Thus, its key objectives were to promote:

- open entry, market liberalisation and competition in telecommunications of the Contracting States
- harmonised policies on a regional level for telecommunications of the Contracting States
- universal service, so as to ensure the widest possible access to telecommunications at an affordable rate by the people of the Contracting States, and to enable the Contracting States to share in the freedom to

¹² In St Lucia, the exclusive licence of Cable & Wireless was to expire in 2000. However, in the case of St Kitts and Nevis, the exclusivity period extended to 2024.

communicate over an efficient and modern telecommunications network

- an objective and harmonised regulatory regime in telecommunications of the Contracting States
- fair pricing and the use of cost-based pricing methods by telecommunications providers in the Contracting States
- fair competition practices by discouraging anticompetitive practices by telecommunications providers in the Contracting States
- the introduction of advanced telecommunications technologies and an increased range of services in the Contracting States
- increased penetration of telecommunications in the Contracting States
- the overall development of telecommunications in the Contracting States.

The results of the region's unified telecommunications reform agenda were quite impressive. Competition expanded considerably after the monopoly rights of Cable & Wireless were terminated in 2001. By the end of 2004, close to 40 licences had been issued to new entrants in the ECTEL member states for fixed public, mobile and internet networks and services. The regional cellular penetration ratio increased from 2.3% in 2000 to an estimated 63% by the first quarter of 2004. Significant growth also occurred in other services, including fixed and internet. Competitive entry predictably exerted a strong downward pressure on the price of most telecommunications services. The average prices for calls from the region to the United States were reduced by more than 70% between the start of liberalisation and 2004. For example, in St Vincent and the Grenadines, tariffs to the US dropped from EC\$4.90 to EC\$1.65, while domestic tariffs fell from EC\$0.17 to EC\$0.09 per minute. These tariff changes led to significant net savings and surplus to consumers estimated at EC\$9.5 million per year over the 1998–2003 period for St Vincent and the Grenadines. The ECTEL-wide benefits were estimated at EC\$54 million per year, in the fixed line segment alone (Carana Corporation 2004).

Summary

In many developing countries that are small and poor, and lack formal institutions and technical expertise, policy coordination, regulatory cooperation and, ultimately, the creation of regional regulatory agencies

might represent a pragmatic approach to dealing with the problem of limited domestic regulatory capacity and the fixed costs of regulation. Furthermore, regionalisation of regulatory policy could advance domestic regulatory reform, enhance regulatory credibility and help these countries overcome their commitment problems. In each country, regulatory reform, especially when it is debated one issue at a time, is frequently blocked by well-organised special interest groups. If reform, on the other hand, becomes part of broader regional policy that encompasses a whole range of issues, all interests are likely to participate, thus reducing the ability of a single group to block it. Moreover, regulatory credibility at the national level is often undermined by political interference (that undermines independence) and opportunistic behaviour on the part of the government. It is much more difficult and costly for governments to behave opportunistically when regulatory policy is harmonised as part of a regional/international agreement, or to interfere in the decision process of a supra-national regulatory authority as opposed to national oversight. The gains from regional cooperation may be large enough to discourage deviations from negotiated regional agreements.

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