

Rent Creation and Rent Containment: The Political Economy of Telecommunications in Mexico, South Africa and Turkey

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I: INTRODUCTION

The evolution of the telecommunications sector is of keen interest from both a development and a political economy perspective. Over the past quarter century telecommunications has become a fundamental part of the economic and social functioning of all societies. Telecommunications is critical to economic dynamics, to the quality of life, to social service provision and to citizen engagement. It is also an immensely interesting site of political economy interactions, especially between state and business actors. Thus telecommunications *matters* a lot for economic change and social advance, and it illustrates how change *can* occur, for good or ill, in real political economies.

This paper explores the political economy of telecommunications in three middle income countries—Mexico, South Africa and Turkey. It undertakes an interpretation of the processes at work through the lens of these comparative cases. It is also intended as a case study of a set of broader questions over the development process, as this is shaped by the central nexus of relations between business and state actors.

The paper is specifically concerned with the following questions.

How does policy change in real polities, in terms of both policy design and implementation? How is this shaped by the underlying nature of business-state relations, and to the overall political settlement in a country?

Is there a tendency for economic “entrenchment” in typical middle income countries? By this we mean consolidation of economic activities in ways that support sustained economic rents, underpinned by various mixes of regulatory capture and market power. And what countervailing forces are there to support a more dynamic and competitive equilibrium?

How is “the state” understood in the context of these business-state relations? How is it useful to deconstruct the state, and in particular, do checks and balances institutions have the autonomy to provide a check on entrenchment?

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How do these processes interact with technological change?

These questions relate to the broader issue of whether governance arrangements can countervail unequal political and economic power in ways that foster inclusive development. This is particularly relevant for the telecoms sector in light of the substantial market power created by the network effects and economies of scale alongside the strategic choice to privatize the industry. A central theme concerns the ongoing interaction between the creation and containment of economic rents. This sounds like the classic issue for a regulated utility—with regulatory structures countervailing the exercise of market power. While this is part of the story, it is an insufficient, or only proximate, account, since it fails to explain the design choices and real behaviors of a society's regulatory institutions. Telecommunications does not operate in an institutional vacuum. The proximate designers of the rules may indeed be technocrats. And enforcement may indeed be the responsibility of an autonomous judiciary. But regulatory decision-making (sometimes)—and the establishment of regulatory institutions (always) is governed by politics. So, too, in some settings more than others, is judicial decision-making. In a sector with so much rent at stake—and one which has at its center powerful firms—public and private considerations are intertwined in the establishment and operation of governance arrangements. For these reasons, consistent with much recent work on political economy, our focus is less on the technological and market drivers of rents, and more on the political drivers—and specifically on the role of rents within business-state relations.

This takes us to the nature of rents. Rent extraction through use of market power and connections with state actors is clearly relevant. But also important are what can be termed productivity rents. By this we mean the economic rents that flow from firm-based improvements in economic productivity: through more efficient resource use, better management and, most importantly, moving the sectors towards and along a fast-changing technological frontier. These productivity rents are analogous to Schumpeterian rents, created by firms innovating in their products and processes and appropriating some of the gains, until these are bid away by other competing firms. But the mechanisms are different in the highly concentrated and regulated telecoms sector. Both rent creation and rent containment flow to a significant degree from the interactions between the firms and the organizations of the state. This includes decisions over regulatory designs (as, for example, in the design of Turkey's regulatory system in the 2000s or the major reform of telecoms regulation in Mexico in 2013-2014), the often "influenced" actual behavior of telecoms regulators (notably in Mexico in the 1990s and 2000s, but also in the other two countries), the decisions of competition commissions, and the key interpretative decisions by the countries' supreme courts (in all three of Mexico, South Africa and Turkey).

A further complementary theme emerges from the case studies, concerning the influence of technological change on industry behavior and regulation. As new technologies have emerged, including mobile telephony, and fixed and mobile broadband, this has increased the potential role of competition, in the substitutability between fixed and mobile broadband, the potential for

delivery of broadband by competing cable TV operators, and for operators to lay down their own fiber optic networks. However, the sector remains fundamentally highly concentrated and even where there is potential for such “facility-based competition” interactions between business, regulators and state actors remain salient—including local municipalities for rights to lay cables.

Our overall assessment of the performance of the telecoms sector in these three middle income countries is moderately positive. Yes, in each country the behavior of both state actors and business is reflective of the overall political economy and the connections between economic and political elites. Highly concentrated sectors and regulatory favors often supported rent extraction, with many instances of monopolistic behavior underpinned by action of state actors. But there was also substantial alignment with expanding productivity, adoption of new technologies and expansion of access—at prices that, over the medium to long term, have not been dramatically out of line with the average prices of middle income and OECD countries. Moreover, there are some indications of further improvements in the current “third wave” of technological change, coinciding, as it has, with decisions of checks and balance institutions and regulatory reform. We argue that in all three countries, a combination of economic pressures to unleash the technological potential of the sector, changes in political currents of favor, and intervention by autonomous checks and balances institutions resulted in more effective regulation and increased competition. This has created an increasingly supportive platform for a next generation of middle-income country development. Contrary to our expectations at the outset of this study, our story turns out to be a relatively optimistic one.

However, these gains in the end depend on political support. In all three countries there are significant political forces favoring populist, clientelistic, rent-extracting or even authoritarian shifts, and this could come back to adversely influence the regulation of this sector.

There is extensive literature on the experience of telecommunications privatization and regulation in developing countries. Much of this finds quite successful outcomes relative to other infrastructure privatizations, in terms of investment, efficiency, expansion and the relative absence of renegotiation (see e.g. Estache et al 2006). There is also much work on regulatory design (e.g. Noll, 2009) and a recent literature on the implications of “convergence” for regulation and competition policy (e.g. Vogelsang, 2010, 2013). This paper draws on this literature, but adopts a case study approach, precisely because the focus is on the interactions within a political economic system. This is in the spirit of the early work by Levy and Spiller (1994) in the 1990s, that focused on the interactions between a country’s institutions and privatization and regulatory change in telecommunications.

The remainder of this paper is organized as follows. The second section provides an overview of patterns of change in both access and pricing in the sector in the three countries, organized around the three waves of technology, of fixed line, mobile, and broadband. There then follows the in-depth analysis of the three cases. This is organized in two sections, the first focusing on the period of relatively high rent extraction under fixed and mobile telephon, the second explores

the past decade in which regulatory and technological factors have led to shifts to somewhat more competitive rules-based processes. As these sections use process tracing of changes, they are fairly thick with description, and so each major section has a brief comparative assessment for readers who want to focus on our interpretation. A final section concludes.

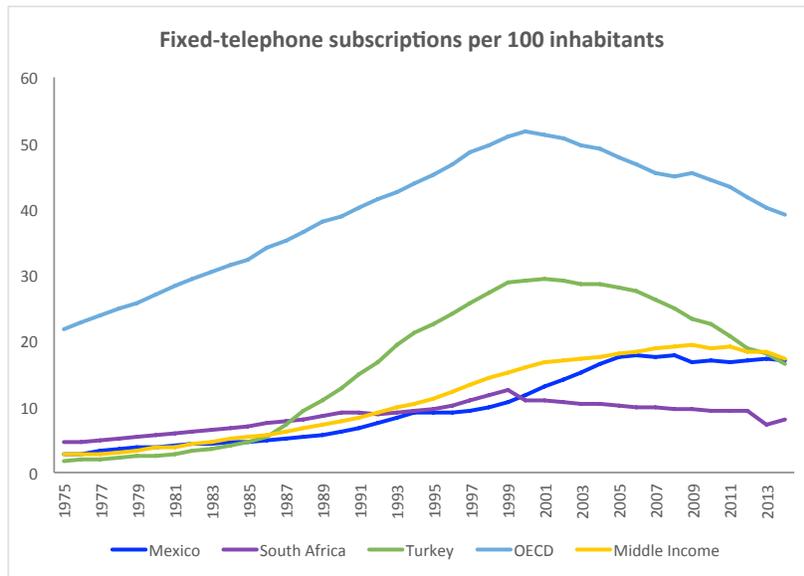
II: PATTERNS - AN EXPANDING AND EVOLVING SECTOR

In this section we provide a sketch of the main patterns of change in the sector. This provides an empirical overview to provide context for the in-depth assessment of state-business interactions in the key phases of development in the following section. It is based on one consistent data base from the International Telecommunication Union. This is supplemented by country specific sources in the case study analysis.

Telecommunications in 2015 is a profoundly different sector from 1990. It has shifted from being overwhelming public to predominantly private. This is reflected in all three of our countries and constituted a critical juncture within the sector, leading to the first phase of change around the evolution of fixed line. Global ideas shaped the cognitive maps of political and economic elites over the gains from privatization. As we discuss below, this interacted with domestic conditions, with change propelled by the 1980s economic crisis in Mexico and the political transition from apartheid in South Africa. In Turkey there were similar pressures for change from reforming government elites, but these were resisted by the Constitutional Court on ideological and design grounds, and the privatization only occurred in 2005.

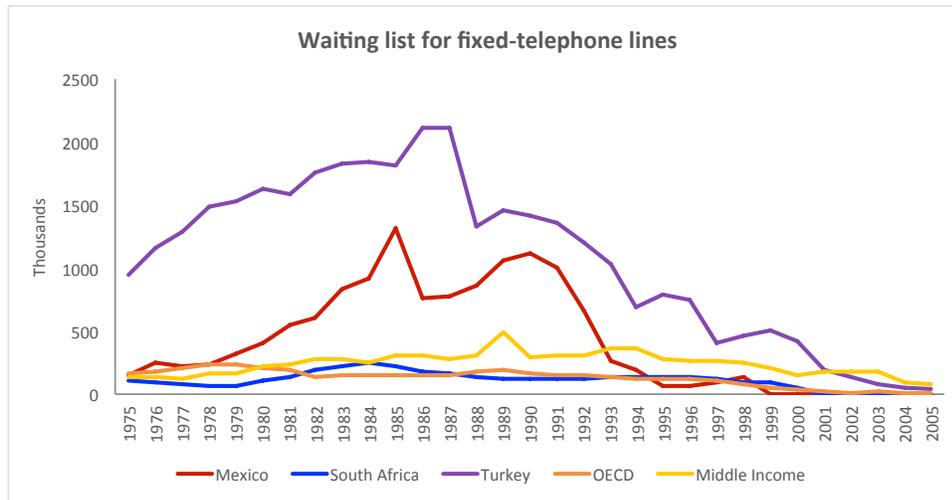
The pattern of access to fixed line services is shown in Figure 1. Mexico, South Africa and Turkey had historically sharply lower access than OECD countries—in line with the average for all middle income. From the late 1980s the experiences diverge substantially. In Turkey the still-public company delivered a quite dramatic expansion of access, peaking around 2000, and then declining, as did OECD countries. Mexico and, especially South Africa, are laggards, with Mexico having a delayed catch up to the middle income average only in the early 2000s. Both Mexico and, even more, Turkey had substantial excess demand for fixed line in the 1980s, reflected in waiting lists. These fell sharply in both countries in the 1990s (Figure 2).

Figure 1. Fixed Telephone Subscriptions
(per 100 people)



Source: ICT statistics, ITU

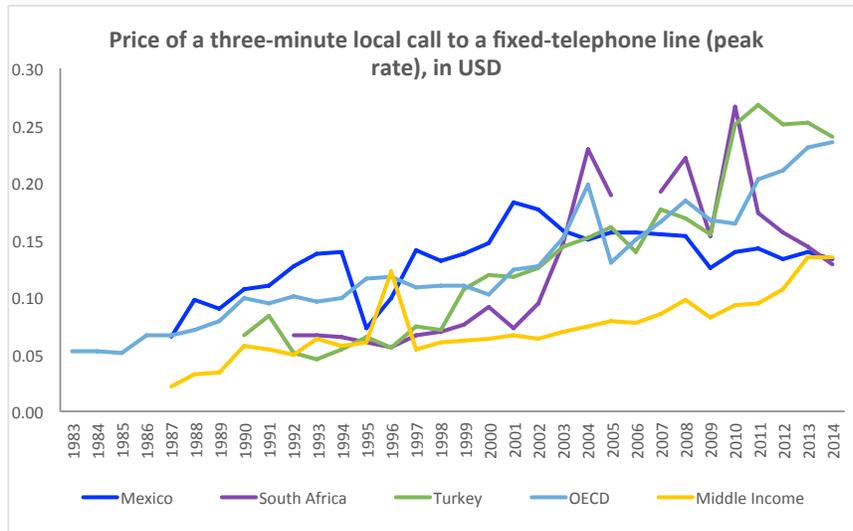
Figure 2. Waiting list for fixed line connections



Source: ICT statistics, ITU

While price data is harder to interpret, owing to the wide variety of plans, there is some evidence that Mexican prices were above comparable levels until the earlier 2000s (consistent with other analyses)—Figure 3. By the more recent period it is Turkey that has unusually high prices relative to the middle income average, though OECD prices also have been rising significantly.

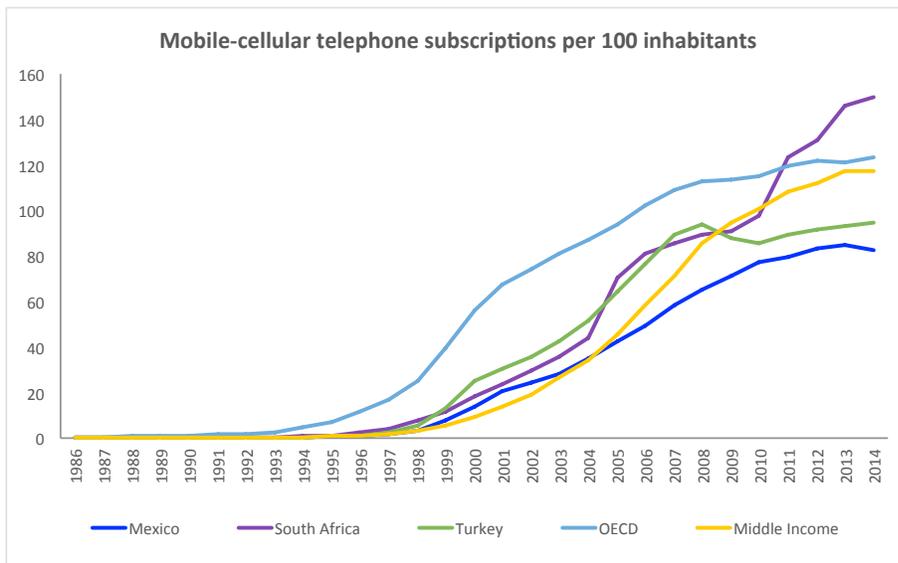
Figure 3. Prices for fixed telephony



Source: ICT statistics, ITU

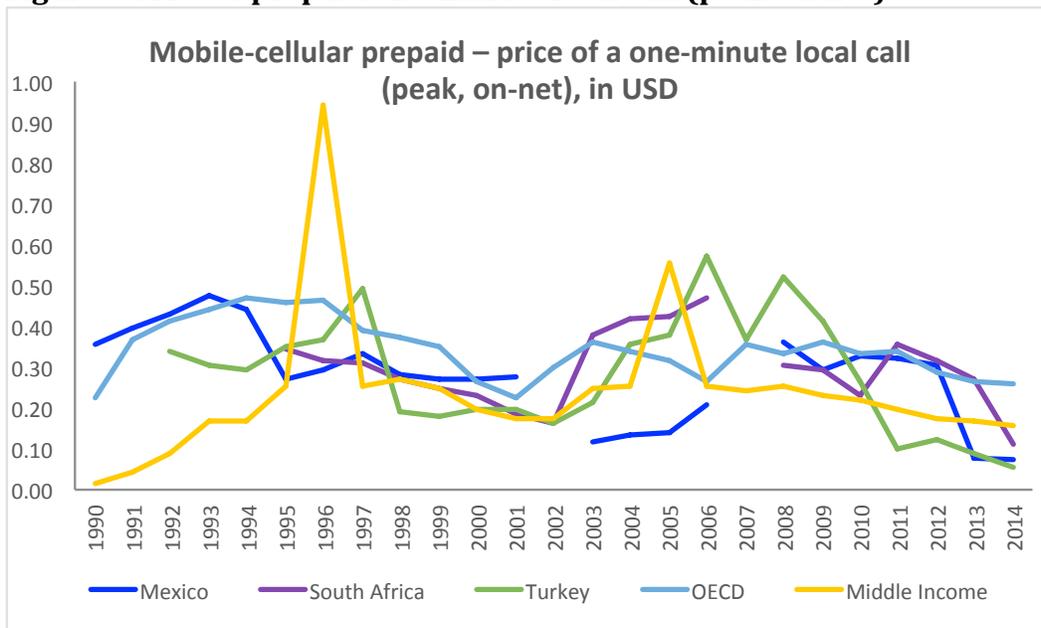
The entry of mobile telephony is vividly seen in Figure 4. Mobile access had already surpassed fixed line by the early 2000s in our three countries, and the shortfall relative to the OECD average is much smaller (and very much less than the difference in incomes). Here Mexico is the real laggard throughout. In Turkey growth in subscriptions essentially stops at close to 100% after 2007, while South Africa experiences a further dramatic growth to above the OECD average, ending with some 1.5 subscriptions per person. Prices are even harder to interpret for mobile given the variety of plans, but Figure 5 provides one illustrative price: no country looks sharply out of line, and all experienced significant price declines since around 2010 (starting earlier, from a higher level in Turkey).

Figure 4. Mobile Telephone Subscriptions in Mexico, South Africa and Turkey (Per 100 People)



Source: ICT statistics, ITU

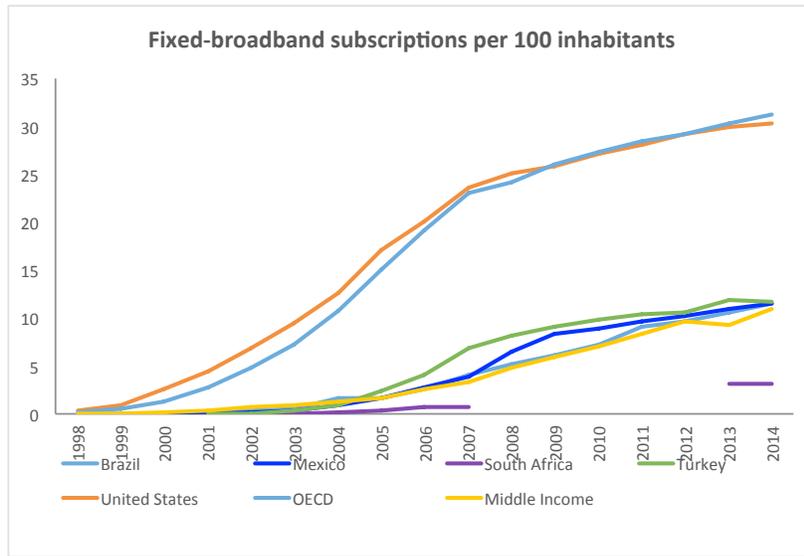
Figure 5 Price of prepaid one-minute local call (peak on-net)



Source: ICT statistics, ITU

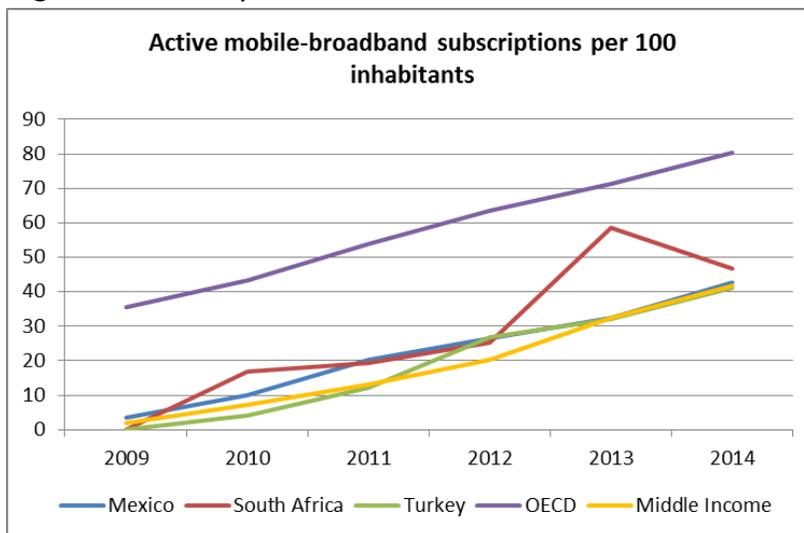
In the third wave of change, the rise in broadband internet, both fixed and wireless, is evident in Figures 6 and 7. In fixed line, there is a large shortfall relative to the OECD, and South Africa is way below both Mexico and Turkey. All three countries also fall short of the OECD average in mobile broadband, but South Africa experiences a sharp acceleration again in the past few years.

Figure 6: The expansion of fixed-line data services



Source: ICT statistics, ITU

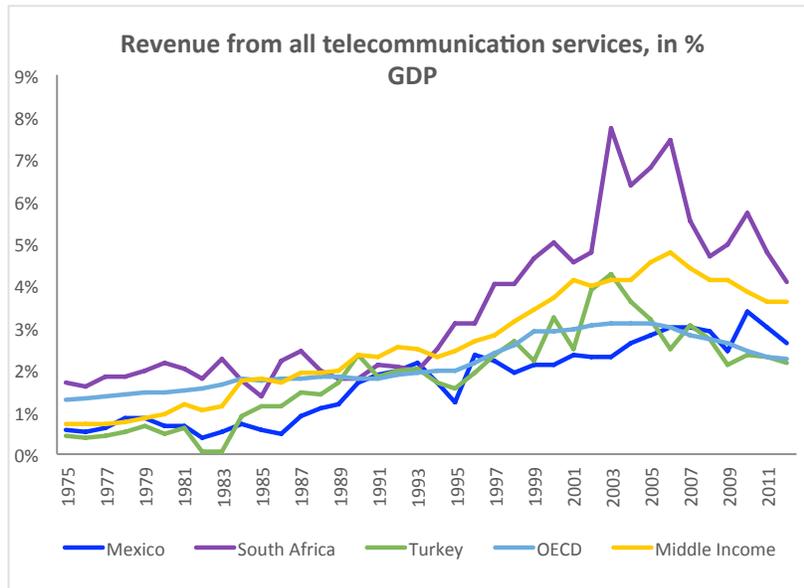
Figure 7: The expansion of wireless data



Source: ICT statistics, ITU

A final pattern is shown in Figure 8 below—telecommunications sectoral revenue as a share of GDP. This is both a summary of the overall picture and of particular interest to this paper. As of 1990, the share for Mexico and South Africa was about 1.7% of GDP, and for Turkey 2.3%. Consistent with the technological dynamism of the sector and its growing centrality in the ‘information age’, this share subsequently rises. It reaches a peak in all three of our study countries in the 2000s, as well as in the average for both middle income and OECD, and then subsequently declines. South Africa and Turkey both peak around 2007, with South Africa experiencing the much sharper peak. Mexico’s peak is later, in 2009.

Figure 8: The rise and decline of telecommunications services revenues



Source: ICT statistics, ITU

The pattern captures both quantities and prices and would require careful disentangling. It is, nevertheless, consistent with the story outlined in the introduction. There are signs of an extended period of rising economic rents—with extractive and productivity rents sustained by the combination of market power and supportive regulatory practices. This is followed by a falling share of revenues despite the growing access and the entry of broadband. We argue below that this is a manifestation of the complex, competing forces for rent creation and containment, that flows from politics, business and the regulatory and judicial organizations of the state. Table 1 lists the central checks and balance and regulatory actors in each country; we shall refer to them repeatedly in the course of the paper.

Table 1: Relevant checks and balances institutions

	Mexico	South Africa	Turkey
Sectoral regulator	Federal Telecommunications Commission (COFETEL), formally under the Ministry of Telecommunications (SCT) 1996-2013. From 2013 the Federal Telecommunications Institute (IFT)	South African Telecommunications Regulatory Authority (SATRA), 1996; merged 1997 with the Independent Broadcast Authority to become the Independent Communications Authority of South Africa (ICASA)	Information and Communication Technologies Authority
Competition Authority	Federal Competition Commission (CFC)	Competition Commission	Competition Authority
Courts	Appeals courts; Supreme Court.	Magistrates courts (district level); High Court (provincial level); Supreme Court	The Constitutional Court; The Council of State (appeals court for administrative decisions)

Source: authors

III: WEAK REGULATION AND HIGH RENTS, BOTH EXTRACTIVE AND PRODUCTIVITY-BASED

Prior to the 1990s, telecommunications seemed to be a classic natural monopoly. The presence of economies of scale, especially with respect to the traditional fixed line local access infrastructure, network effects and switching costs made it easy for dominant firms to use their first mover advantage to foreclose the entry and expansion of potential competitors. The response in many countries, including the three under study here, had been to have the utilities be publicly owned.

Then things changed. Beginning in the 1980s, the idea of privatizing telecommunications too hold. Between the latter 1980s and the early 2000s, countries throughout the developing world undertook processes that shifted ownership of their dominant telecommunications utility from public to private (or joint public-private) hands. Consistent with this pattern, almost from the first mobile telephony, too, was in private hands. But the processes of privatization, and the subsequent operation of both fixed line and mobile telecommunications were subject to regulatory and political decision-making.

This section will focus on the initial (approximately fifteen) years of decision-making in our three case study countries, i.e. the period from the early 1990s to the mid-2000s. The first subsection will consider the decisions associated with privatizing their parastatal telecommunications utility. The second will focus on the decision-making processes associated with the introduction and initial expansion of mobile telephony. As will become evident, notwithstanding technocratic enthusiasm for market-based and competitive processes, in all three countries, and in both market segments, the processes were highly politicized, and associated with the conferral of generous rents on (often politically connected) private actors.

IIIA: Privatizing the Parastatal Telecommunications Utility

Technocratic champions of privatization of fixed-line utilities promoted a fairly standardized model: introduce an independent regulator; regulate prices in a way that protected consumers from monopoly exploitation; within the context of regulated prices, allow monopoly for a limited period (to encourage investment); then foster competition by either obliging the monopoly to provide access to downstream competitors or by licensing additional fixed line providers, or both.

In practice, however, things all-too-often worked out differently than intended. Networks of influence between business and government overwhelmed efforts at arms-length regulation and (eventual) competition. Instead, as both Mexico and South Africa vividly illustrate, the newly-privatized entities were able to leverage political influence networks to facilitate the capture of

monopoly rents. Turkey's experience was more ambiguous. The evolution of fixed line operators in the three countries are summarized in Table 2.

Table 2: Fixed Line Market Structures

	Mexico	South Africa	Turkey
Market structure	Monopoly, privatized in 1990; then dominant actor	Monopoly; partially privatized; later second operator, with very small market share	Monopoly rights terminated by end-2003; privatized 2005; dominant actor
Major firms and their characteristics	Telmex; controlled by Slim's group (95% market share 2002; still ~80% in 2010); at core of Mexican political economy	Telkom; initially (1997) state and foreign; foreign exits (2004), then BEE equity partner, but state control Neotel, second national operator licensed in 2006.	Türk Telekom,

Source: authors

Mexico. Teléfonos de Mexico (Telmex) was a classic public utility in the 1970s and 1980s. Service was inexpensive but dismal, with new connections taking months or years. It was well aligned with both the political economy of the hierarchical, corporatist PRI—with public utilities as valuable tools for patronage—and also aligned with the PRI's longstanding statist ideology, recently manifested in the banking nationalizations of 1981 in the wake of the debt crisis.

A major privatization drive occurred in the context of the modernization strategy of President Carlos Salinas de Gortari, and was included in the 1989-1994 National Development Plan.

Along with the broader global shifts in the discourse, there were two key political, Mexico-specific drivers of privatization. First, there was a political economy necessity to restore credibility in the government's commitment to (not expropriate) the private sector. This had always been a long-term issue for Mexico, with historic resolutions based on rent-creation and rent-sharing that made it costly for government's to behave opportunistically (Haber et al. 2003). This acquired added urgency in the wake of the credibility-reducing banking nationalizations and the intensification of distributional fights in the country—the latter reflected in the 1979 election of Salinas, that was heavily disputed (Tornell and Esquivel, 1995).

Second, Salinas was reconstructing his core political constituency. For the broader population this involved new patronage programs, for example a major public works program (PRONASOL). With respect to economic elites, it involved a tighter link to a relatively small group of very rich and powerful businessmen. Many of Mexico's billionaires got their major push—from wealth to super-wealth—through Salinas' privatizations.

This political economy context set the stage for the design of the privatization of telecommunications in ways that increased private rents and created market dominance of the

major private player. This was aligned with the government's overriding goal of maximizing revenues from the privatization and doing so rapidly (del Villar, 2009)

To prepare for privatization, Telmex's license was modified on August 10th, 1990².

Administrative control would be mainly with Mexican partners, with a specific prohibition over the participation of persons involved in radio or TV. While the Ministry of Telecommunications (SCT) reserved the right to grant other licenses to third parties, the newly privatized Telmex was given a concession with a monopoly for six years, unless it failed to comply with the conditions of expansion and efficiency. On paper, other features of the modified Telmex license seemed to protect consumers.³ In practice, things turned out differently.

The modification of the license of Telmex paved the way for its divestiture. However the tendering had signs of preference for Mexico's economic elite. In 1990, Telmex was bought in a tender won by a group of investors formed principally by Grupo Carso (owned by Carlos Slim Helú), France Télécom, and Southwestern Bell Corporation. The public tender was published in June 1990 and in November three bids were received: one from Grupo Carso, another just below from Grupo Accival (owned by Roberto Hernández, a friend and previous partner of Carlos Slim⁴), and a last one from Grupo Gentor, which was non-competitive because it offered to take just half of the Government's shares. The participation of Roberto Hernández was important because the tender required at least two competitive bids. It is worth noting that the winning consortium paid its offer in cash except for Grupo Carso, which received a 6-month credit to pay its part out of future Telmex profits. This group initially bought 53% of the shares that was afterwards raised to 69%. Controversially, the payment itself took place over the course of the next several years, using revenues from the phone service. In May 1991 and May 1992, the Mexican government sold its remaining stock in Telmex to Grupo Carso.

After privatization, Telmex began investing in new infrastructure, creating a nationwide fiber optic network, thus offering service to most of the country.⁵ Privatization was associated with steady, but unspectacular growth in subscriptions (Figure 1), and a significant rise in tariffs until the 2000s (Figure 9 below). It was also highly profitable. According to del Villar, Telmex' gross profits were equivalent to one percent of GDP, compared with valued added of only twice this. Noll (2009) shows that Telmex was much more profitable than comparable telecommunications companies in other countries.

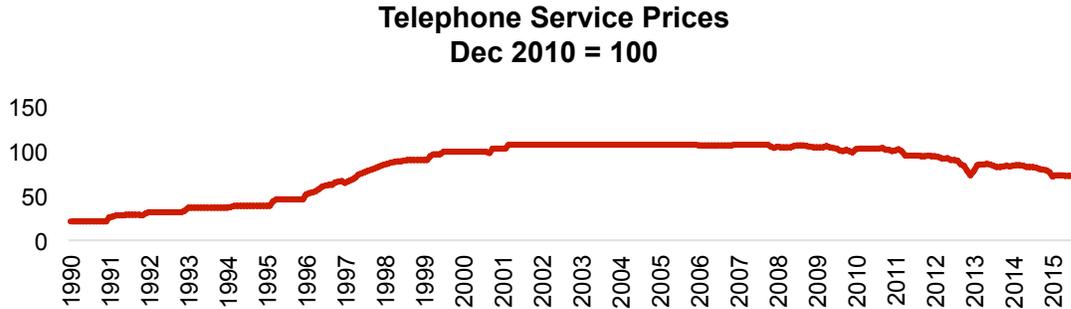
² Luz Álvarez, Clara. (2007).

³ The license specified: (1) a system of tariff control, (2) the prohibition on making monopolistic practices, discriminatory treatment and tied sales, (3) an obligation to open architecture and interconnect for other companies once competition was allowed, (4) compliance with quality goals, (5) the provision of universal service in the form of programs of rural telephony and public houses, and (6) the prohibition of paid television services.

⁴ Hernández later bought the previously nationalized bank, Banamex, in a parallel tender.

⁵ Griffith, Kathleen (2001).

Figure 9: Price index for fixed telephony in Mexico



Source: Mexican National Statistics and Geography Institute (INEGI), National Price Index

It took five years before a framework for regulating the newly-privatized Telmex (beyond the terms in the concession agreement) was put in place, with the passage in 1995 of the Federal Telecommunications Law, that included the creation of the Federal Telecommunications Commission (COFETEL). This was initially proposed to be an independent statutory body. However, in a further sign of industry bias, this was changed in the law's preparation, and it came under the direct control of the telecommunications ministry. It thus lacked real autonomy, and was more susceptible to political influence. The telecommunications sector was, however, subject to investigation by the Federal Competition Commission.

The 1995 Telecommunications Law permitted competition in all segments of telecommunications, and in 1996 competition began in long distance interconnection, with the entry of Avantel, AT&T and MCI. However, the interconnection fee for new players was US\$0.06, while in countries where there was effective competition, the rate was less than a cent. Tariff rebalancing between long distance and local service also hurt competition. New entrants complained that Telmex used part of their higher incomes on local service to cross-subsidize their own long distance, whilst simultaneously using high interconnection rates to increase the prices of competitors. Over the years, Telmex was slowly forced into reducing its interconnection rate, but this was insufficient to make much of a dent in its market share or overall prices of the industry.

For the first two decades of private ownership, checks and balances institutions did little to constrain Telmex's market dominance. Guerrero, López Calva and Walton (2009) find that the Competition Commission indeed had several filings of anti-competitive behavior on Telmex (this is relevant to both fixed line and mobile telephony that is discussed below). However, these were effectively subverted by the court system: Telmex was able to secure stay orders ("*amparos*") in the courts. By contrast COFETEL had a bias in rulings in *favor* of the incumbent (ibid). The net effect was that for almost two decades Telmex maintained its dominant position: in terms of market share; as of 2007 Telmex accounted for 91% of the fixed telephone market.

South Africa. South Africa initiated the process of privatizing its telecommunications sector in the early 1990s with the incorporation and commercialization of the monopolistic parastatal,

Telkom. The process accelerated in the early years of democratic rule, under the African National Congress. Key steps in the process (and its subsequent partial reversal) included the following:

- In 1997, the Thintana Consortium (Southwestern Bell Company plus Telecom Malaysia) emerged as the sole remaining bidder from a privatization process, and purchased 30% of the equity of Telkom, and took over management control.
- In 2003, an additional 30% of equity was issued in an initial public offering (IPO) on the Johannesburg Stock Exchange.
- In 2004, Thintana exited, selling half of its stake to a ‘black economic empowerment’ group (the Elephant Consortium), and the other half to the state-owned Public Investment Corporation, which managed state pension funds.

The privatization of Telkom was deeply intertwined with the rapid evolution through the 1990s of South Africa’s political settlement. Both the outgoing National Party apartheid government, and the incoming democratically-elected African National Congress saw Telkom’s partial privatization as being in their interests. From the National Party perspective, privatization was part of a broader effort in the early 1990s to use the then-reigning global enthusiasm for private market solutions as a way of scaling-back the reach of the state—and favoring established economic elites—in advance of a hand-over of power. For the ANC, there was, as in the case of Mexico, a credibility issue. The embrace of privatization was a means of signaling its pro-market, globalization credentials—that, in governing, it would leave behind some of the strongly state-centric ideology of its years in exile.⁶

Telkom’s partial privatization indeed served both of these purposes. But the details of what happened underscore the complexities of South Africa’s political settlement, that go way beyond any simplistic logic of a transition from authoritarian rule to a ‘good governance’, rule-of-law, market democracy.

In the immediate aftermath of the 1994 democratic elections, the ANC government initiated the process of elaborating institutional reforms for the telecommunications sector. At the outset its policy document mirrored the technocratic ‘best practice’ proposals of the time. However, in the final stages of drafting and promulgating the 1996 Telecommunications Act, the political leadership of the process shifted to a faction closer to organized labor, and less aligned with the ANC’s pro-market champions. The law ended up delegating fewer powers to the newly established South African Telecommunications Regulatory Authority (SATRA) than had initially been proposed.

Then in the final stages of the bidding process, seemingly in response to the heightened risk of political interference, both the Dutch telecommunications company, KPN, and the German

⁶ This is a vivid example of the signal against the expected type to reveal the “true” character of the new government (See Rodrik, 1998 and Walton, 2014 for the analytics and an application to the parallel case of Brazil under Lula.)

company, Deutsche Telecom, withdrew, leaving the Thintana Consortium as the sole applicant. Thintana purchased its 30% stake in Telkom for US\$1.2 billion.

At the outset of privatization, the intent had been to introduce competition via a second national operator, after an initial six-year monopoly period. However, this process stalled, with a license only issued in 2006 (four years after the intended date), and a very slow subsequent roll-out of services.

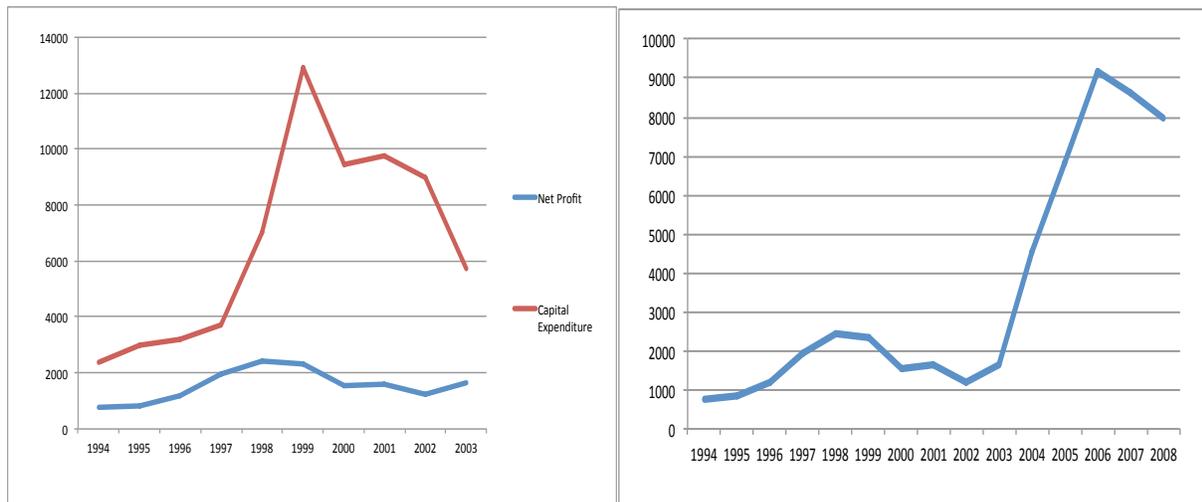
The new arrangements ‘worked’ in the sense that, as Figure 10 shows, the partial privatization of Telkom was accompanied by a substantial increase in investment. However, as per Figure 1, the increase in subscriptions was quite modest. All of this happened in a de facto largely unregulated monopoly environment. Thintana’s shareholder agreement remained secret, with some speculation that it was given a veto over regulatory change. In 2002, price increases were granted by the telecommunications minister over the objections of the regulator. Then, in 2004, the Thintana Consortium unexpectedly exited.

While the reasons for Thintana’s exit remain obscure, it is clear who benefited. The ‘Elephant Consortium’ that purchased half of Thintana’s stock in 2004, giving it a 15 percent stake in Telkom, was an early, and at the time one of the largest, of South Africa’s black economic empowerment (BEE) investment vehicles. Its politically-connected partners included Andile Ngcaba, who led the consortium, and until 2003 had been the top official in the Department of Telecommunications (which had oversight responsibility for Telkom on behalf of the South African government, which remained the largest shareholder). Bridging capital for the Elephant Consortium’s purchase was provided by the state-owned Public Investment Corporation (PIC), which purchased the shares from Thintana, and then re-sold the shares a year later to the Consortium at a 15% discount below the prevailing market price.

Figure 10: Telkom net profit and capital expenditure, 1994-2008

Net profit and capital spending

Net profit



Source: Telkom annual reports; figures in nominal Rand

Even though it no longer had a strategic private sector equity partner, for a few years after 2004 Telkom was highly profitable, but profitability proved sensitive to political developments. Between 2005 and 2008 profits were above R8 billion annually—up from below R3 billion prior to 2004. However, levels of investment lagged. In 2008 Telkom sold its highly-profitable stake in Vodacom, one of South Africa’s two leading mobile companies, on whom more immediately below, providing a windfall to its owners. In 2010, the Elephant Consortium sold off its stake entirely. (Many of the principal shareholders in the Elephant Consortium were on the losing side of the 2007/8 political power struggle within the ANC between Thabo Mbeki and Jacob Zuma.) By 2011, was Telkom no longer was a profitable company.⁷ Indeed, after 2008 Telkom had de facto reverted to dominant state ownership—with the government and the PIC together accounting for 50.3% of total equity, and the remaining equity diffused across large numbers of passive shareholders.

Turkey. Turkey privatized its fixed line telecommunications utility later than South Africa and Mexico. Indeed, the expansion in service evident in Figure 1 took place under public ownership; public investment in the telecommunications infrastructure was undertaken as part of an overall strategy to re-orient the government away from manufacturing and services towards infrastructure investments. Especially in terms of providing telephone access to the population

⁷ Telkom’s share price fell from close to R100 per share in 2007 to R55 in 2009, and then further to R35 per share by mid-2011. This occurred in a period in which telecommunications was generally booming, including in South Africa, so the reasons for Telkom’s loss of profitability have to lie in the factors specific to the company. These include: the sale in 2009 of Telkom’s stake in the mobile company, Vodacom, and an associated ‘special distribution’ to shareholders, reducing subsequent value; poor managerial decision-making; difficulties associated with state-owned enterprise governance subsequent to the exit of the strategic equity partner; and, as discussed later judicial decisions that constrained Telkom’s abuse of monopoly power.

through higher subscriptions, it seems public monopoly in Turkey performed better than privatized monopolies in Mexico and South Africa.

On several occasions governments during the 1990s tried to carry out privatizations through laws (or “enabling laws” followed by decree laws) that gave significant discretionary authority either to ministries or to the administrative agencies that they controlled, without providing sufficient detail on definitions, procedures, or methods to be used let alone any measures that would be adopted in case of industries with monopoly power. The Constitutional Court frequently cancelled them on the basis that the laws transferred legislative authority to the executive. On one occasion the Court also indicated that in the case of privatization of natural monopolies it was necessary to show what sort of measures would be undertaken so as to allow the state to exercise oversight and control (Atiyas, 2009). The court’s decisions reflected its aversion to marketization and privatization—part of a broader fight within Turkey between different parts of the state, and, indeed, between different ideologies. At the same time, the court acted as a check and balance against legal frameworks that would allow crony privatizations.

By the end of the 1990s, privatization of Türk Telekom also became difficult because of conflicts among coalition partners. While earlier Türk Telekom was a relatively well-managed state owned company, by the end of the 1990s it had become an important instrument of political patronage especially of the Nationalist Action Party, a coalition member, which also controlled the Ministry of Transport. This led to political resistance against privatization.

A number of important events changed the political economy environment. One was Turkey’s acceptance in 1999 as a candidate for European Union membership. The second was a deep financial crisis in 1999-2000. This increased the bargaining power of international organizations, especially the World Bank and the IMF, and reformers among the bureaucracy. The privatization of Türk Telekom as well as adoption of a new telecommunications law became a condition for financial support. Of at least equal importance was the electoral victory of the Justice and Development Party (AKP). AKP came to power on a platform of anticorruption, democracy and EU membership and won with a landslide, forming the first majority government in 2002 after more than a decade.

A telecommunications law was adopted in 2000, which both established an ostensibly independent regulatory authority (the Telecommunications Authority, later renamed the Information and Communications Technologies Authority, ICTA) and envisaged that the monopoly rights of Türk Telekom would be abolished by the end of 2003. Some initial attempts to privatize Türk Telekom under the framework of the new law proved unsuccessful, mainly because of insufficient transfer of control rights to potential private investors. Eventually 55 percent of Türk Telekom was privatized through a competitive tender in 2005, which was won by Oger Telekom, a Saudi concern. This was followed by public sale of another 15 percent of shares.

Turkey's candidacy for EU membership closely influenced the evolution of the regulatory framework. The regulatory framework embodied in the Telecommunications law was closely influenced by that in the EU. Further changes in EU law were incorporated and formally adopted in a new telecommunications law enacted in 2008.

However implementation was largely influenced by local conditions—and was slower than the pace sought by reform champions (though quite rapid relative to the Mexican and South African patterns). In the long distance and international call markets, even though licenses to competitors were granted four months after the termination of monopoly rights of Türk Telekom, they did not become immediately operational because it took two more years for rival operators to conclude interconnection agreements with Türk Telekom. Atiyas and Doğan (2010) reports that interconnection tariffs were typically high; they came close to EU averages only by 2008. Competition in the local calls market was allowed only in 2009. Number portability in the fixed network, which is crucial for the development of competition, did not become a practical possibility until 2012. In addition, the regulator displayed unwillingness to use penalty payments as a mechanism to elicit compliance of the incumbent operator (Renda et. al. 2009).

The reason for this unwillingness is most likely related to the continuing influence of the Ministry on the regulatory authority, and the Ministry's (and Treasury's) protective stance towards Türk Telekom. Türk Telekom's profits are an important source of tax revenue, and the Treasury still owns 30 percent of Türk Telekom, so Türk Telekom's profits are a source of direct revenues as well. According to data from the ICTA, as of the third quarter of 2015, the share of Türk Telekom in total revenues from fixed line telephone services was about 83 percent. Competition is more advanced in long distance calls, and the share of alternative operators in total revenues in long distance calls is higher, about 44 percent. Their share in international calls is about 32 percent.

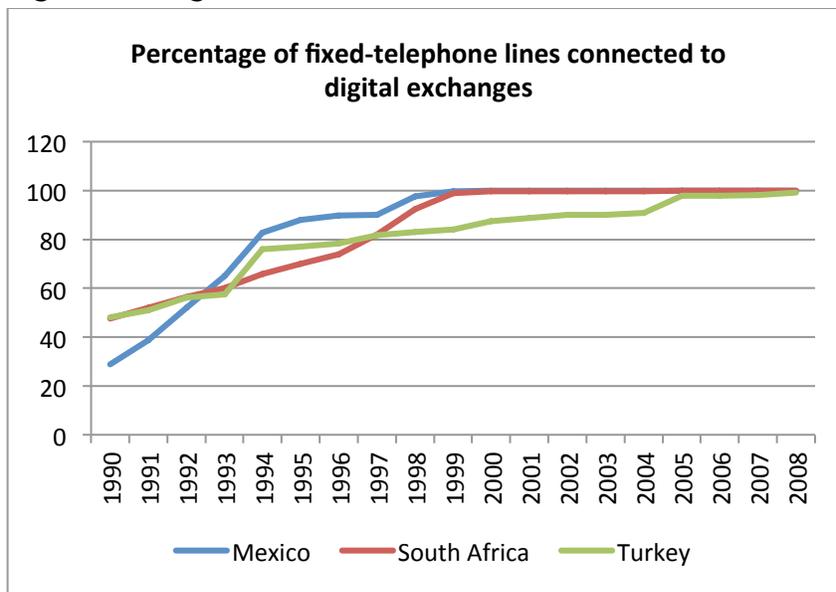
Comparative assessment of the privatization of fixed line. The three countries in this study had an inheritance in the early 1990s of publicly-owned, monopolistic fixed line telecommunications companies. By then an intellectual consensus had emerged in mainstream development thought: good policy involved privatization with regulation, supporting competition where possible. Sooner or later, all three countries followed this path. But the choice, design and implementation was shaped by national level political settlements, with a particular interplay between sectoral behavior and checks and balances institutions.

Mexico and South Africa illustrate a strikingly similar sequence in the early years. Politics and associated ideology supported a “modernizing”, more market-oriented change, of which telecommunications privatization was a part. Both chose a design with an initial period of exclusivity to be followed by opening up to competition. Then both had somewhat problematic actual privatizations: Mexico's had what looks to be only one serious bidder, and whose purchase was then partially financed by future revenues; South Africa ended with only one bidder, after others had withdrawn amid concerns over potential political interference. However,

the character of the firms differed: in Mexico the core member of the consortium, Grupo Carso, was controlled by Carlos Slim, who was at the core of the political-business nexus that was a central part of the political settlement under the PRI; in South Africa, the major private sector operator, the Thintana group, was entirely foreign. (South Western Bell had a share in both countries).

What came subsequent to privatization also had common features. First, there was substantial initial investment and efficiency improvements, as evidenced in increased digitalization (Figure 11). Second, penetration during the first decade after privatization was relatively modest. Third, belated attempts at formal regulatory oversight were weak. In Mexico, the combination of de facto monopoly control, high investment and high profitability continued for almost two decades. In South Africa, by contrast, Thintana exited within seven years of taking control of the company, with its shares sold to the Elephant Group, a business group initially closely linked to the country's rulers—and subsequently vulnerable to the shifting power of different factions within the ANC. Investment fell off sharply, as, a few years later, did profitability.

Figure 11: Digitalization



Source: ICT statistics, ITU

Turkey represents a contrast. The initial modernization drive came under public ownership and there was a faster increase in penetration. The Constitutional Court held up privatization, probably as much because of statist preferences as the expressed concern that privatization without effective regulation in a “deals-based” environment, would be inefficient. Türk Telekom was indeed then embedded in the patronage system. This led to a substantial delay in privatization, until a then-outsider party, the AKP, came to power with a commitment to Euro entry and a more rules-based approach, and Türk Telekom was privatized in 2005, in the context of a regulatory framework closely modeled on pro-competition EU law. However, despite this

apparently rules-based transition, subsequent implementation continued to have significant anti-competitive elements.

IIIB: The Rise of Mobile Telephony

In the early 1990s, at the time of the initial privatizations of fixed line telecommunications, mobile telephony was an emerging technology occupying a niche market—a seeming sideshow to the main event of privatization. But within a few short years, as Figure 2 shows, growth accelerated at an extraordinary pace. The number of mobile subscribers exceeded those with fixed lines by the early 2000s, and then quadrupled again over the subsequent decade.

The world over, including (as per Table 3 below) in the three countries under study here, the growth of the mobile sector was dominated initially by a small number of large, economically powerful firms. Part of the reason was Schumpeterian—the combination of rapid technological change, business acumen and first mover advantage. But another part was regulatory. Licensing restrictions could (and did) directly limit the number of firms that participated in the new market. Even where licensing policy was relatively liberal, powerful network effects had a similar consequence—conferring market power on the first movers who, in the absence of regulation governing interconnection, could control access to their networks, thereby inhibiting new entry.

Table 3: Mobile Telephony Market Structures

	Mexico	South Africa	Turkey
Market structure	Duopoly, later third small firm	Duopoly; later third, smaller operator; later additional small operators,	Duopoly, later more competition
Major firms and their characteristics	Telcel; controlled by Slim’s group (~80% market share in 2000s)	Vodacom (domestic-international capital); 31 million users (2014) MTN (initially domestic-international capital, later BEE champion) 28 million users (2014) Cell-C (international +BEE champion) 2011: 8 million users 2014: 18 million Also Telkom (1.8 million) & Virgin Mobile (500k)	Turkcell (domestic with some international participation). 2015: 34.2 m. subscribers Vodafone (international; initially Telsim, purchased by Vodafone in 2005 after Telsim was taken over by the Turkish deposit Insurance Fund). 2015: 22.1 m subscribers Avea (established in 2004 through merger of AYCELL, a Türk Telekom subsidiary, and Aria, a joint venture of Is Bank and Telecom Italia Mobile; currently 90 percent owned by Türk Telekom). 2015 17.0 m. subscribers

Source: authors

Political decision-making vis-à-vis regulation is thus a key determinant of the magnitude and distribution of rents in mobile telephony. As this section will show, in all three of our case study countries, the result (at least for the first 10-15 years of the expansion of the sector) was dominance of the sector by a small number of firms—but with this dominance dependent, at least in part, on continuing regulatory (and thus political) favor.

Mexico. In Mexico the central story is of Telmex/America Móvil dominating the market almost as much as in fixed line. However the trajectory was different, since it did not start from a position of initial monopoly.

Iusacell was the first company to launch cellular products into the market in 1989. Telcel, a subsidiary of Telmex, entered the market in 1990. At this point, Iusacell had 45 percent of the market (about 29,000 users) and Telcel 55 percent (35,000 users). Telcel successfully increased its market share over the 1990s. In this period it seems to have been through an effective marketing strategy rather than explicit political or regulatory favors. Iusacell had launched long-term contracts with a leasing system to acquire the telephones. Contracts expanded, but many clients lacked the payment capacity and Iusacell had to make additional investments to disable accounts (including legal costs). This came to a head in the economic crisis of 1994, in response to which Iusacell decided to focus on customers with higher purchasing power.

Meanwhile, Telcel took a different strategy: it brought in plans with affordable prices and promoted the first prepaid plans under the name of *Amigo Telcel*. By end-1994 Telcel had 66 percent of the market (approximately 300,000 users), against a 34 percent stake of Iusacell (195,000 customers).⁸ Telcel's deep pockets may well also have helped. In the next five years, Telcel achieved national coverage, and its more complete roaming generated additional revenues from roaming connection, in-roaming and long distance airtime.

By late 2002 Telcel—now spun off from Telmex as América Móvil—had 79 percent market share (about 21 million users) within Mexico.⁹ As of 2014, its market share remained above 70%—although in that year broader efforts at political ‘modernization’ finally led to the introduction of a new set of regulatory constraints, see below. Beyond its dominance in Mexico, America Móvil also has expanded dramatically internationally, with more than 289 million

⁸ Calvet, Gabriela & Barber, Carlos. “La industria de las telecomunicaciones en México”. El Financiero

⁹ In September 2000, Telcel was formally spun off from Telmex under a new corporation, América Móvil (AT&T had merged with Southwestern Bell in 2005, and so inherited a minority shareholding). Telefónica, that had entered the market in 2000 and established itself by its acquisition of Pegaso PCP in 2002, had 10 percent stake (with two and half million users) and Iusacell had 8 percent (with just over two million users). In 2010 America Móvil bought 60% of Telmex. This was approved by the CFC because both companies were controlled by the Slim family and were part of Grupo Carso. America Móvil bought the rest in 2012 in order to start a process of de-listing from the Mexican Stock Exchange. This was approved by Mexican Banking and Securities Commission in December of this year.

mobile customers globally, from operations in 18 countries in the Americas and seven in Europe.¹⁰

South Africa.¹¹ The role of political drivers was evident from the outset of South Africa's mobile telecommunications industry. Its initial structuring was driven by discretionary decision-making by apartheid-era political and business elites. Subsequently, the mobile companies that dominate the sector successfully re-aligned themselves with new political and business elites that came to the forefront in the post-1994 democratic era.

The basic architecture of the mobile sector was put in place by the National Party government in 1993, the year before South Africa's democratic transition. The process was startlingly rapid, and strikingly non-transparent.

At the end of 1992, in response to a report commissioned by the government and written by the accounting firm Coopers & Lybrand, the Minister of Telecommunications announced that two licenses would be granted to mobile operators, with Telkom to have a maximum stake of 50 percent in one of them. In early 1993, a 'regulator' was appointed; the appointee had no prior experience in the sector. (With no regulatory framework in place, the 'regulator' was promoted to the position of Postmaster General to provide a statutory basis for moving forward.) Tender documents were released in early April, 1993 and the closing date for applications for the 'competitive' license was set for two months later. The documents mandated that the winner pay an upfront license fee of R100 million (approximately \$35 million at the then-prevailing exchange rate), plus annual royalties of 5 percent of net revenue. Other than the requirement of meeting the financially onerous up-front commitments, there were no explicit criteria for distinguishing among competing bids.

By October 1993, a duopolistic structure had been put in place. Each of the two license recipients took the form of a joint venture involving a British-headquartered telecommunications company with a white Afrikaner-led business with close ties to the governing National Party:

- Vodacom was a partnership between Telkom (with 50% of the equity); the multinational Vodafone (35%), plus the South African Rembrandt group (15%).
- The winning bidder for the 'competitive' license¹² was MTN—whose leading shareholders were the multinational company Cable & Wireless, plus the South African company, M-NET, whose major shareholders were South African companies that cut

¹⁰ From <http://www.americamovil.com/amx/en/cm/about/intro.html?p=28> downloaded February 27th, 2016.

¹¹ This and subsequent sub-sections on South Africa draw on the following term papers written for Levy's 2014 & 2015 Masters-level class on Governance and Growth at the University of Cape Town: Thomas McLennan, "Ringling in a Cellular South Africa: Examining the Early Strategy and State Relations of MTN"; Joan Ezeogu, "MTN: An opportunistic company or an astute company"; Nicholas Owsley, "MTN: The Politics of Africa's Rising Star"; and Mattieu Theron, "A case of capture or control: The story of ICASA and frequency spectrum in South Africa".

¹² There were two other (unsuccessful) bids, each an alliance between Anglophone South African businesses and international companies (Barlow World plus Deutsche Telekom; and Anglovaal plus Telkom Finland).

across the ‘commanding heights’ of white Afrikaner capital (Naspers) and white Anglophone capital (Anglo American Corporation).

The risk-return calculation implicit in the decisions of the outgoing government and the winning bidders seems evident and had parallels with the privatization of Telkom: to move rapidly in advance of the political transition, creating ‘facts on the ground’ which would be difficult for the ANC to reverse when it took power in May, 1994, given its need to signal its “market-friendly” character. Indeed, already by October 1993, Vodacom had invested over R50 million in its network, and MTN over R10 million (the latter prior to the bid results actually being announced).

These risks paid off. At a behind-closed doors ‘London agreement’ (made at Cable & Wireless’s headquarters),¹³ Vodacom and MTN agreed that they would not compete with one another on price. For the next decade, these mutually profitable arrangements were de facto unconstrained by regulatory or competitive pressures. The South African market was shared between the duopolists, with Vodacom’s market share ranging from 55-67%, and MTN’s from 33-45%.

Prior to 1996, there was no regulator. And for a dozen years after the regulatory authority was established, decision-making favored the incumbents. The intent initially had been to introduce a third mobile operator early in the process. (A proposal floated by the regulator for a fourth license was summarily quashed.) In the event, a third license was issued only in 2001 (to a new company, Cell C, a consortium in which Saudi Oger Telecommunications held 60% of the equity), following a bid process which was contested in court by the losing bidders but was settled out of court.¹⁴ En route to the issuance of this license, the Ministry of Communications had blocked efforts to regulate interconnection (which is key to fostering competition). When Cell C finally began operating in the mid-2000s, it did so by piggybacking on Vodacom’s network, and its business strategy explicitly avoided ‘disruptive’ competition. Only in 2008 did regulatory decision-making turn in a more pro-competition and consumer friendly direction. (We pick up this story in Section IV).

Notwithstanding their origins, both Vodacom and MTN successfully adapted themselves to South Africa’s post-apartheid political settlement. For Vodacom, the process was relatively uncontentious—perhaps in large part because Telkom (with 50% of the equity) was itself partially state-owned and had BEE processes of its own underway. In 2005, Rembrandt sold its 15 percent stake to the multinational principal, Vodafone, for R15.6 billion (about \$2.5 billion at then-prevailing exchange rates). Then in 2008 Telkom sold off its stake—15% directly to Vodafone (bringing its ownership to 65%) and the remainder on the Johannesburg Stock Exchange. In 2009, following Telkom’s sale of its shares, Vodafone/Vodacom belatedly put in

¹³ For details, see “MTN/Vodacom – at your service?” *Financial Mail*, 24 May 1996, pp. 131-2.

¹⁴ In 1998, Saudi Arabia’s King Fahd donated \$10 million to the ANC.

place a deal valued at R7.5 billion (\$1 billion at then-prevailing exchange rates) to bring in BEE ‘sleeping partners’.¹⁵

The MTN saga had rather more twists and turns. Between 1994 and 1999, MTN had a bewilderingly complex ownership structure, involving multiple layers of joint venture arrangements and holding companies, some associated with the apartheid era, others new BEE initiatives. This were simplified after 1999, with Cyril Ramaphosa a principal champion through his role as non-executive chairman of Johnnic, one of the most powerful of the new BEE investment vehicles. Ramaphosa is a key character in South Africa’s political economy: former trade unionist, ANC activist and constitutional negotiator; and as of 2014 one of the five wealthiest black South Africans, and the country’s Deputy President.

Cable & Wireless exited MTN entirely in 1998.¹⁶ By 1999, following a series of deals and acquisitions, the Johnnic-controlled holding company M-Cell owned 72% of MTN’s equity. Ramaphosa joined the MTN board in 2001, and became its chairperson in 2002. MTN had become the most powerful non-mining BEE company in South Africa.

Having consolidated its position within South Africa, beginning in the late 1990s MTN focused its growth strategy on other African¹⁷ and then Middle Eastern markets.¹⁸ As of late 2014, MTN had about 220 million subscribers worldwide, including 44 million in Iran. South Africa accounted for only 27 million of the total. Worldwide revenues were \$12.2 billion; its profit was \$6 billion, about half from Nigeria.¹⁹

Evidently, MTN has grown well beyond a point where the ability to influence South Africa’s domestic regulatory environment via political networks is the overriding issue for its overall performance, with some parallel’s with Slim’s América Móvil. But, as repeated media and judicial brouhahas suggest, the extent to which its stature as a BEE-empowered, and politically

¹⁵ The deal was with the Royal Bafokeng Holdings, the Thebe Investment Corporation and Vodacom staff. Initially the deal was said to include an investment vehicle organized by Bulelani Ngcuka, but that deal fell through. Ngcuka was a close ally of Thabo Mbeki, and had been the head of the National Prosecuting Authority at the time when it was planning to charge Jacob Zuma with corruption.

¹⁶ C&W subsequently was reported as saying that it would never invest in South Africa’s second, fixed line national operator, due to the country’s “protectionist regime and non-independent regulatory structure”. Horwitz & Currie, 2007, p. 456.

¹⁷ In 1998, it won sole-sourced licenses in Swaziland and Rwanda. It subsequently successfully bid for licenses in Ghana, Kenya, Tanzania, Uganda, Cote d’Ivoire and Cameroon. Its crown jewel in Africa (at least until 2015) was Nigeria, where, by late 2014, it had 58 million subscribers, and accounted for 80% of all revenues from all of Nigeria’s telecommunications companies.

¹⁸ Vodacom was constrained from expanding aggressively into Africa by the broader, global strategic approach of its principal, Vodafone.

¹⁹ In August 2015, the Nigerian regulatory slapped a US\$6 billion fine on MTN for breaching security-related regulatory strictures, at the same time as it offered to renew MTN’s license.

connected African champion facilitated its entry into other national markets is a different, more ambiguous affair.²⁰

Turkey. The mobile industry was launched through revenue sharing agreements between Türk Telekom and two operators, Turkcell and Telsim, in 1994. Turkcell was a joint venture between Sonem Holding (currently Telia Sonera), a Finnish telecommunications company, and Cukurova group, then the third largest conglomerate in Turkey. Telsim initially was a partnership between Rumeli Holding, Alcatel, and Siemens, but Rumeli Holding, a Turkish group owned by the Uzan family, active in a variety of sectors including energy and banking, very quickly became the sole owner. The selection process was not transparent, and rumor has it that the government actually approached a number of conglomerates, and Cukurova and Rumeli expressed willingness. In 1998, the revenue-sharing agreements were replaced by 25-year concession licenses. Interestingly, Türk Telekom, then a state-owned company, did not set up a mobile operator. This had significant consequences, as will be seen below.

The duopoly situation lasted until 2001. Throughout the period, Turkcell had a larger market share than Telsim, thanks in part to the suspension of Telsim's activities because it was found to violate the agreement. Turkcell's market share in terms of subscribers was between 60-75 percent.

In 2001, two additional concession agreements were issued, one through a tender that was won by Is-TIM, a consortium between Is Bank and the mobile subsidiary of Telecom Italia. The second concession was granted to Türk Telekom, at the price established in the auction for the first license; Türk Telekom established a mobile subsidiary, Aycell. In 2003 Is-TIM and Aycell merged so the number of operators was reduced to three, with the Türk Telekom subsidiary working under the brand name Avea.²¹

New entry did not shake Turkcell's dominance. Turkcell successfully utilized its first mover advantage: once it established a dominant subscriber base, it used high (initially unregulated) interconnection charges to draw additional subscribers into its network and successfully prevent competitors from acquiring market share. Due to inadequate regulation, as of 2005, Turkcell

²⁰ Examples of how MTN wins friends and influence people abound. Here are two of many: (i) In 2005 (following years of reports of how MTN built its influence networks in Nigeria), a Nigerian parliamentarian complained about MTN distributing free services to parliamentarians to influence legislative oversight. In response, then South African President Thabo Mbeki wrote to then Nigerian President Olusegun Obasanjo, explaining MTN's innocence. F. Eriye, "Mbeki comes to MTN's rescue", *Sunday Times*, February 16, 2005, p.5. (ii) MTN's Iranian venture is in partnership with an Iranian state-owned defense company. The Turkish company, Turkcell, subsequently sued MTN in United States courts on the grounds that it had provisionally been awarded a license in Iran, but the license was reversed as a result of South African offers to facilitate trade in arms. R. Naidoo, "MTN rocked by Iran license bribery scandal", *Mail and Guardian*, March 29, 2012.

²¹ This reflected an embarrassing outcome for the Turkish authorities. Is-TIM had assumed (and apparently was promised) that it would obtain roaming services from the incumbents until it would roll out its own infrastructure. The regulator actually did impose roaming obligations, but the concession agreements of the incumbents did not contain roaming obligations. The incumbents challenged the regulator's decisions and the case ended up in international arbitration. Telecom Italia threatened to leave. The saga ended with the merger of Is-TIM and Aycell.

accounted for 63% of active mobile lines in Turkey. Subsequently, as Section IV will explore further, regulation shifted in a pro-competitive direction.

Mobile telephony: comparative assessment. The patterns of expansion of mobile telephony further illustrate three central themes of this paper: the dynamism of the telecommunications sector; the role of regulation in shaping how expansion plays out, and who benefits; and the centrality of political incentives in shaping how regulatory authority is exercised.

In the first decade of expansion of mobile telephony, these forces combined to confer market power and rents on a small number of powerful sectoral champions:

- In Mexico, Telcel emerged as the dominant player, with a market share in the 80% range. Its parent América Móvil has expanded dramatically in the Americas and beyond.
- In South Africa, the sector was dominated by a duopoly. One of the firms (Vodacom) was constrained in its expansion beyond South Africa by being subject to the strategy of its multinational parent. But the other (MTN) built on its South African platform to become a powerful player across Africa and the Middle East, even as it was experiencing some loss in market share in South Africa.
- Similarly in Turkey, Turkcell emerged as a dominant player – with initially almost two thirds of the market share until competition reduced this.

In all three countries, the sector had grown exponentially. As per Figure 4, back in 1998 there were fewer than 8 mobile telephone subscribers per hundred people in each of Mexico, Turkey and South Africa. By 2008, the number had risen more than eight-fold in Mexico (to 65 subscribers per hundred) and more than ten-fold in both South Africa (89 subscribers per hundred) and Turkey (94 per hundred). Meanwhile, consistent with dominant market power on the part of leading firms, the price of local mobile calls (on network, during peak periods) had increased: in Mexico, up from 28 US cents per minute in 1998 to 36 cents in 2008; in South Africa, up from 27 to 30 cents over the same period; and in Turkey up from 19 to 52 cents (ITU: mobile prepaid, price of a one-minute local call).

Dominance, though, need not be forever. As the next section of the paper will explore, in all three countries, countervailing tendencies disrupted the pattern that had prevailed into the late 2000s.

IV: CONTAINING RENTS: REGULATORY AND MARKET FORCES IN ACTION

As of the mid-2000s, the dominance of the telecommunications sector by a small number of economically powerful and politically connected firms seemed unshakeable in all three of our case study countries. Telmex/América Móvil (both owned by Carlos Slim) dominated in Mexico. Telkom, Vodacom and MTN were South Africa's dominant firms. In Turkey, Türk Telekom dominated fixed telecommunications, and Turkcell mobile.

However, this dominance did not remain unchallenged. Major disruptions in telecommunications markets in all three countries came about due to technological, regulatory and (underlying the regulatory) political changes. Table 4 provides a partial list of the changes, and firms involved, in our three case study countries.

To begin with technology, here the major transformation has been the rise of the internet. Initially a niche product operated through fixed line phone networks, the internet has become a mass medium of communication, one which can be accessed through both fixed line and mobile telecommunications platforms—and also through cable television. To facilitate data communication, all three platforms have undergone waves of technological innovation, increasing both speeds and the volume of traffic that can be carried. This in turn has created a huge expansion of demand for fiber optic backbone infrastructure that is capable of transmitting vast streams of data. The data on trends in fixed and mobile broadband subscriptions in Figures 6 and 7, presented earlier in the paper, highlight the recency and rapidity of the waves of internet expansion.

This technological transformation has created the potential for accelerating competition and convergence between fixed and mobile telecommunications companies, as well as cable television. It has also intensified pressures to share infrastructure to realize economies of scale, and offer seamless connectivity across platforms to users of telecommunications services. And more broadly, it has increased the pressure on governments to undertake modernizing reforms to underpin future economic and social development—both of their physical infrastructure and of their regulatory environments.

Table 4: Market Structure - Broadband Infrastructure and Internet Connectivity

	Mexico	South Africa	Turkey
Market structure	Multiple segments: - fixed line and mobile providers with dominant player	Multiple segments: - fixed line providers -mobile providers - open access fibre optic providers	Multiple segments: - fixed line and mobile providers in oligopolistic markets
Major firms and their characteristics	Telmex-owned companies dominant	Fixed and mobile providers as above. Open access: -Dark Fibre (privately held South African) - FibreCo (joint venture SA BEE + international+ CellC -Broadband Infraco (state-owned, very little market presence)	Fixed line subscribers: Incumbent Türk Telekom (73 percent market share) and Superonline, a Turkcell subsidiary (17 percent market share) Mobile providers: Turkcell, Vodafone and Avea.

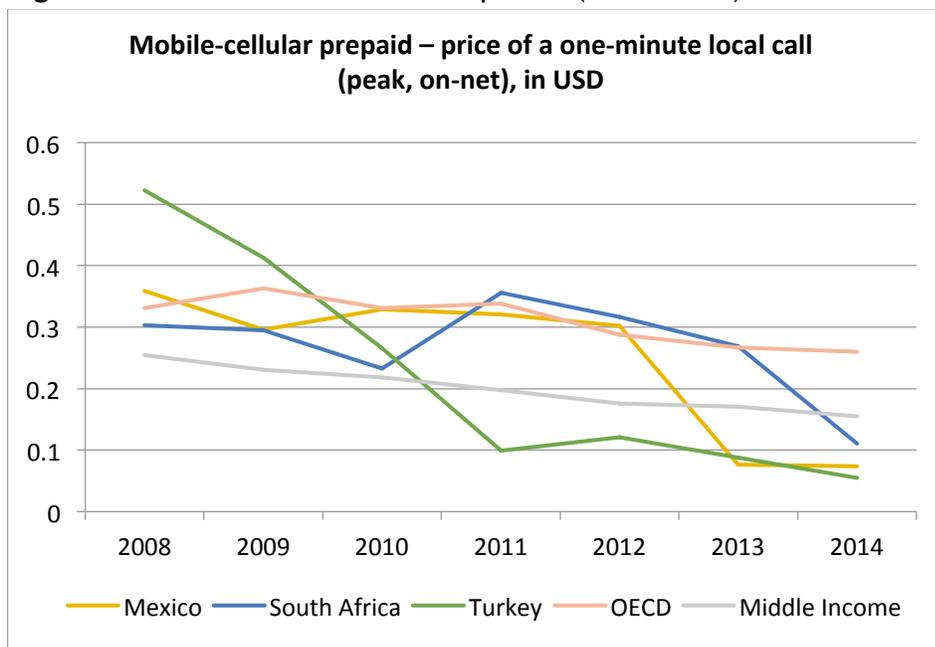
Source: authors

A variety of outcomes are possible. One possibility might be expanded competition between incumbent fixed and mobile telecommunications companies. Another might be the emergence

of powerful new entrants. A third might be the consolidation of collusive control by incumbents. Which outcome eventuates depends on both the competitive strategies of the leading firms, and on the response of regulatory systems to the new environment. It turns out that in all three cases, the evolution was in the direction of increased competition and lower prices, though not for the same reasons.

Figure 12 (adapted from Figure 5 above) shows the dramatic impact on mobile call prices of adopting more pro-competitive regulatory stances in all three countries (in particular of reductions in mobile termination rates): Between 2008 and 2014, the cost of a one minute call fell by two-thirds in South Africa (from 30 to 11 cents), by over 80 percent in Mexico (from 36 to 8 cents), and by over 90 percent in Turkey (from 52 to 5 cents per minute).

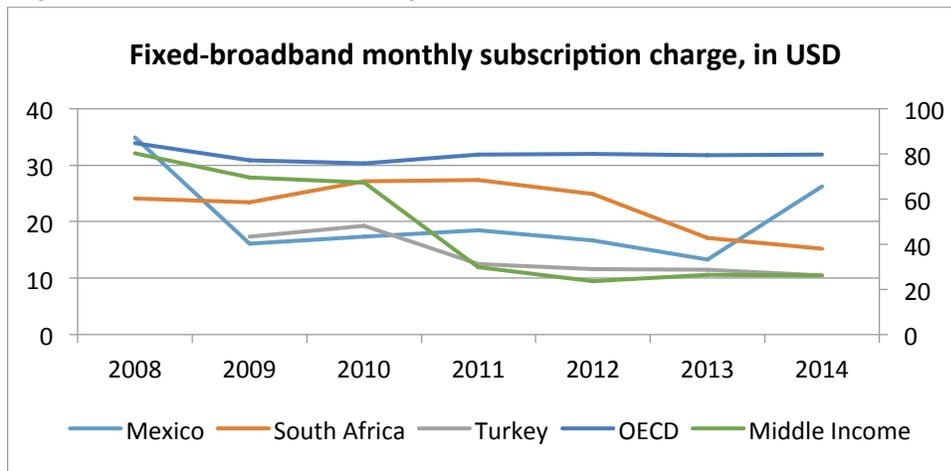
Figure 12: Decline in mobile call prices (2008-2014)



Source: ICT statistics, ITU

Complementing the data on mobile phone pricing, Figures 13 and 14 show recent trends in the price of fixed and mobile broadband services. Though less than for mobile calls, in two of our three case study countries, there is some evidence of declining prices: in Turkey, the cost of fixed broadband services fell by more than 50 percent between 2007 and 2014; In South Africa, the price of mobile broadband data halved between 2012 and 2014. (In Mexico, prices showed no systematic trend over the period.)

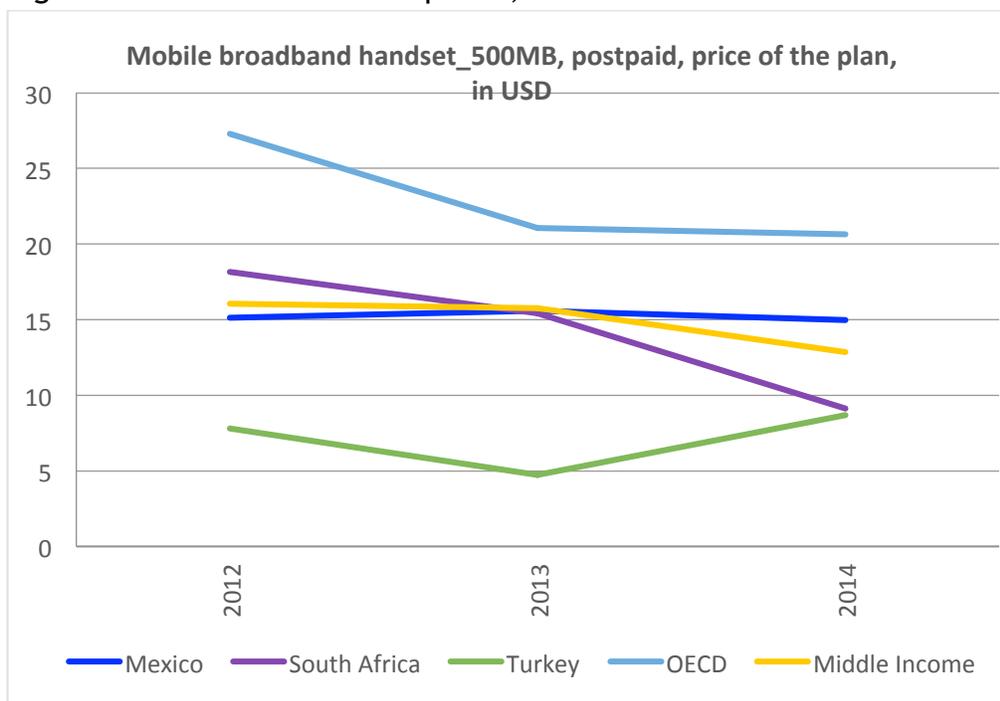
Figure 13: Fixed broadband prices, 2008-2014



Source: ICT Statistics, ITU

Note: Middle Income on right axis.

Figure 14: Mobile broadband prices, 2012-2014



Source: ICT statistics, ITU

Considered together, the rapid expansion in service usage—and the price trends for mobile calls and fixed and mobile broadband services—provide some grounds for optimism that technological dynamism is indeed translating into developmental benefits and welfare gains for consumers. However, while the technological drivers are global, regulatory and political responses are country-specific. So to better understand the causal processes through which technological change translates into economic outcomes, we turn again to the process of regulatory decision-making in our three case study countries. As we shall see, subsequent to the

mid-2000s all three countries witnessed shifts in patterns of political power which affected the incentives to foster (or constrain) competition in the sector. Further, across all three countries, it was not only the telecommunications regulator, but also other checks and balances institutions that intervened to foster sectoral competition.

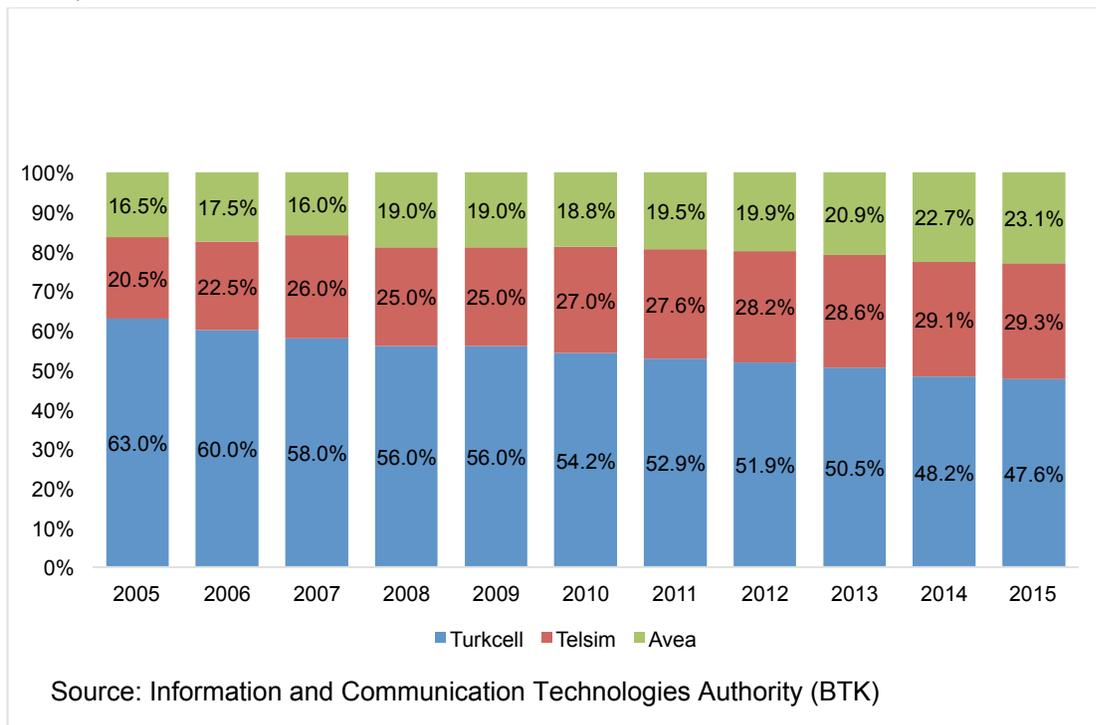
Turkey. We begin with Turkey, where the regulatory/political obstacles to expanding competition were, from the first, lower than in the other two countries—both because the shift from public to private telecommunications sector came later (leaving less time for fixed line incumbents to consolidate their position prior to the waves of technological change in mobile and internet services) and because candidacy for EU membership created an incentive to introduce competition-facilitating regulation.

As detailed earlier, initially the de facto acceleration of competition was slow in both fixed and mobile communications—a result of both a cautious approach to regulatory intervention and of first mover advantages in mobile telephony. But after 2008 the telecommunications regulator introduced a multitude of instruments to foster competition in mobile telephony. It moved quickly to regulate interconnection tariffs downwards; already in 2004 mobile termination rates in Turkey were among the lowest in the EU. In 2008 it introduced number portability which was a major intervention that significantly reduced the cost for consumers of switching from one operator to another. It also introduced a regulation that tried to prevent Turkcell from foreclosing markets by on-net off-net price discrimination. This was an innovation with no similar regulations in the EU.²²

Even though it is difficult to infer causality from the data, the market share of Turkcell was reduced significantly after 2008: Between 2008 and 2015 Turkcell's market share was reduced from 56 to 47 percent in terms of number of subscribers, and from 67 (in 2009) to 43 percent in terms of total revenues. Figure 15 shows the pattern in terms of share of active lines.

²² See Atiyas (2011) for a detailed discussion. Admittedly, most member states in the EU did not face the type of dominance exercised by Turkcell.

Figure 15. Mobile Telephone Market Share in Turkey by Number of Active Lines (2010-2015)



The contrast between the regulator's aggressive pro-competitive activism in mobile segments and its continuing caution in pushing for competition vis-à-vis fixed line telecommunications is striking. (The country's competition authority took some independent action in 2008 to foster competition in fixed lines, but its influence was limited.²³) Ultimately the most likely explanation lies with the protective attitude of the government towards Türk Telekom. Because Türk Telekom (via Avea) was a new entrant in the mobile market, promoting competition looked like the most viable strategy available to the government and the regulator to protect the interests of Türk Telekom in the mobile segment.

Paralleling the broader pattern vis-à-vis fixed line communications, there were significant delays in the adoption of regulatory measures to encourage the development of competition in internet services. Turkey adopted the "ladder of investment" approach recommended by the European Commission in member states of the EU. The idea was that the incumbent operator would be obliged to provide access to competitors in a sequential manner (corresponding to higher levels of investment in new facilities by competitors), first through resale, then through bitstream access and finally through unbundled access to the local loop (ULL). However, actual implementation was again seriously delayed and broadband penetration, while showing an

²³ In 2008 the Competition Authority fined Türk Telekom for abusing its dominant position by applying a margin squeeze in the internet market. The decision spurred some activity by new entrants in the internet market. However, the effect was limited. The Competition Authority's jurisdiction was restricted to areas that were not directly regulated by the telecommunications regulator, and this limited its overall influence on the market.

increasing trend, remained low compared to OECD countries (Figure 6). The incumbent operator Türk Telekom (or rather its subsidiary internet service provider, TTNNet) continues to dominate the fixed broadband market, with a market share of about 73 percent. The main competitor is Superonline, a member of the Turkcell group, with a market share of 17 percent.

However, recent developments in the Turkish telecommunications markets have been driven by convergence and fixed-mobile substitution.²⁴ The main element of competition emerging in fixed line internet has been between Türk Telekom and Superonline. The two operators have been competing in laying out fiber optic infrastructure and offering competitive retail tariffs to expand their customer base. Competition was largely initiated by Superonline's investment and retail growth strategies, including promotional campaigns that cover the switching costs arisen from leaving DSL subscription of Türk Telekom. This competitive pressure has obliged Türk Telekom to increase its fiber investment in order to retain its competitive position in the market.

In the meantime, in addition to this market-driven competitive dynamic, there was a decision by the regulatory authority to grant a regulatory holiday regarding access obligations to "fiber to the building/home (FTTB/H)" infrastructure. The regulatory holiday basically states that the dominant player, i.e. Türk Telekom, will not be obliged to provide access to their rivals to its FTTB/H infrastructure for a number of years. This has also stimulated Türk Telekom to expand its fiber access networks.

There are additional related market-driven factors in favor of competition in fiber. First, technological convergence in telecommunications has created new revenue generating services that increase appetite for investment. Hence relatively successful internet service providers are being taken over by mobile operators and in turn mobile operators have started providing value added and bundled services. Second, starting in 2016 the three mobile operators have started to provide 4G-LTE services. To carry their traffic, they have to invest more in fiber networks. Once these fiber networks are built, providing broadband services could be provided with incremental investments. Not only Turkcell, but lately Vodafone, the second biggest mobile operator, has started to apply such a strategy through its subsidiary, VodafoneNet. Vodafone also rented for 15 years the right to use the electricity transmission company's installed fiber infrastructure.²⁵

Ironically, then, while regulation has been inept in developing competition in fixed broadband, the latter is starting to emerge mainly as a result of technological change and market dynamics. However, this emerging facility-based competition in fixed broadband still faces significant challenges that require public intervention. Fiber deployment in urban areas requires close cooperation with municipalities, utility companies, and/or existing infrastructure owners. There

²⁴ The following draws on Koksal (2015).

²⁵ According to statistics published by the regulator, as of 2015 Q3 Türk Telekom owns about 206 thousand km of fiber infrastructure, about 80 thousand km of which is used for access. Total fiber operated by alternative operators is about 55 thousand kms, 42 thousand of which is owned by them. About 10 thousand km is used for access.

have been significant obstacles for alternative operators, including Superonline, to obtain administrative authorizations, rights of way and to access existing ducts. Clearly this creates an advantage for Türk Telekom because it has an installed infrastructure.

Hence, these market-driven developments are not likely to yield a truly competitive market in broadband unless they are complemented by competition-enhancing regulations. At the same time, the general investment climate in Turkey is changing. The state is turning more predatory: it is more eager to expand authority to regulatory areas that were relatively independent, and more eager to establish control through connected businesses. It remains to be seen whether Turkey will take advantage of this technologically driven competitive thrust.²⁶

South Africa.²⁷ As of 2007, South Africa did not seem well-positioned to ride a third wave of innovation in the telecommunications sector. Restrictive licensing policies limited entry to a small number of players—and messy, contested bidding processes resulted in very slow start-ups on the part of both Neotel (the second national fixed-line operator) and Cell-C (the third mobile operator). Meanwhile, in the wake of the exit of the Thintana group and the de facto re-emergence of the government as the dominant shareholder, Telkom's period of rapid investment had come to an end. The two mobile operators, Vodacom and MTN were expanding rapidly – but as a tightly-managed duopoly. At best, the country looked headed towards a future in which prices of telecommunications services would remain high, and internet access would be disproportionately through oligopoly-controlled wireless networks.

But over the next few years, South Africa's checks and balances institutions reasserted themselves. Decisions by the regulatory authority, the judiciary, and the competition authority profoundly reshaped the regulatory rules of the game—facilitating the decline in mobile telephony and broadband prices evident in Figures 12-14, and providing a platform for a more competitive, and more dynamic sector.

The first set of decisions addressed mobile interconnection charges which, during the period of duopoly control, had remained largely unregulated. In 2007, the country's Competition Commission issued a finding of anti-competitive price discrimination by Vodacom and MTN. In 2009, the Minister of Communications, hitherto a defender of the status quo, began pressuring for lower charges. (Note that this was one year after Telkom had sold off its 50 percent stake in Vodacom, a sale which altered the Ministry's incentives).²⁸ In 2010, the telecommunications regulator, ICASA, announced new call termination regulations which, over a period of three

²⁶ One can add that recently the influence of the government over Turkcell has increased significantly over the last few years. This was due to a ownership dispute between Cukurova Holding, Turkcell's domestic shareholder, and Turkcell's foreign partners, especially Alfa of Russia. The dispute created an opportunity for the government to appoint several members of the Board of the Directors, which is now dominated by people connected to the government. Most former professional management of Turkcell has quit their jobs since then. It remains to be seen how this influence will affect Turkcell's corporate strategy and the degree of competition in the market.

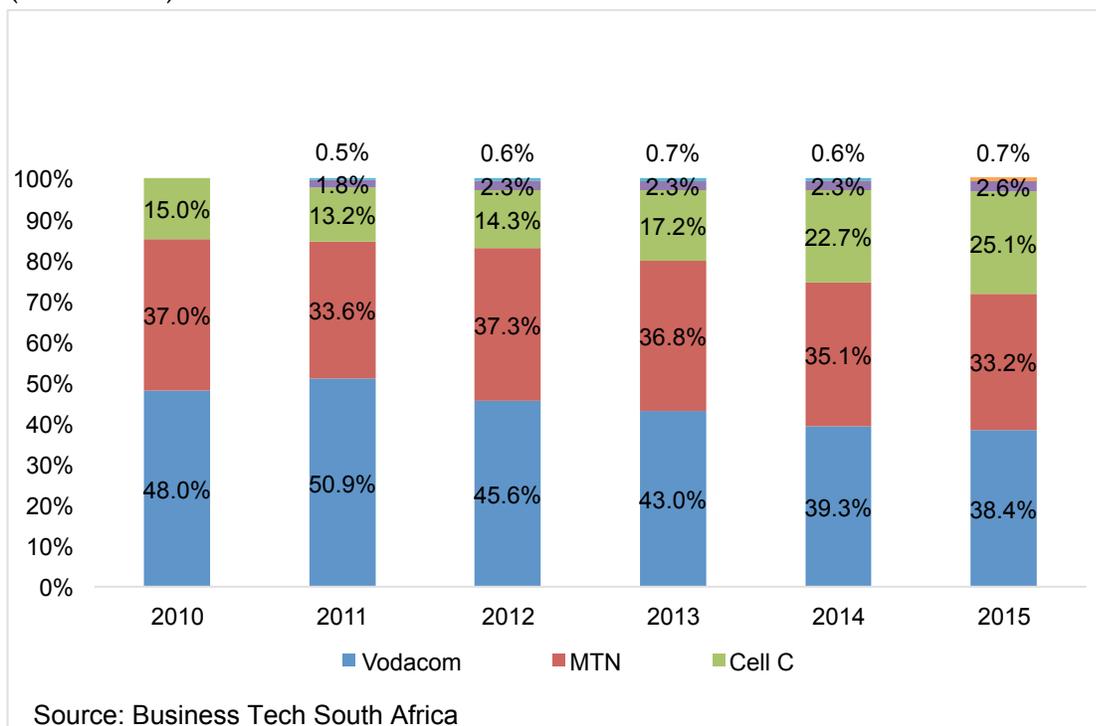
²⁷ This section draws heavily, and builds on, the research conducted by Pengelly (2013).

²⁸ Since Telkom was majority state-owned, as long as Vodacom was partially owned by Telkom, a portion of its profits accrued to government.

years, slashed interconnection charges from R1.25 to R0.40 per call, thereby largely eliminating the anti-competitive advantages enjoyed by Vodacom and MTN.

The decisions to regulate and reduce interconnection charges transformed the competitive environment for mobile telecommunications in South Africa. The third mobile operator, Cell C, embarked on an aggressive program of expansion. The number of Cell C subscribers rose from 8 million in 2011 to 21 million by 2015. As Figure 16 shows, by 2015, Cell C accounted for 25% of South Africa's mobile telephone market. Note also that Cell C's increase in market share corresponded to the rapid post-2010 increase in mobile penetration rates (Figure 4).

Figure 16. Mobile Telephone Market Share in South Africa by Number of Active Lines (2010-2015)



Cell C's aggressive strategy was surely one driver of the declines in the price of mobile telephone calls evident in Figure 12. The rise of the internet was another: South Africa's major mobile operators all moved aggressively to win market share in the provision of internet services. And here, too, decisions by checks and balances institutions were key to opening up the internet market for mobile providers—and, more broadly, fostering competition in the provision of data services.

In August 2008, South Africa's Pretoria High Court ruled in favor of a lawsuit brought by private providers of 'value added network services' (VANS), who claimed that, contrary to prior interpretation, the legal framework governing telecommunications gave all licensed operators the right to build (and lease) their own fiber optic backbone networks, instead of relying on Telkom

(or Neotel). The result was an explosion of investment. Private investment in data infrastructure in 2011 alone amounted to R15.5 billion. (Telkom’s total investment that year amounted to R1.2 billion.)

The key players included:

- Dark Fibre, established in October 2007, that by the end of 2013 had invested R5 billion to build 8,000 kilometers of open access fiber optic infrastructure backbone. The Rembrandt Group owns 51% of Dark Fibre; its chairperson had previously worked both with the Rembrandt Group and (as chief financial officer) Vodacom.
- FibreCo, that in 2010 announced plans to invest up to R5 billion in 12,000 kilometers of open access fiber optic infrastructure; by mid-2014, 2,400 km had been completed. FibreCo is a joint venture between Convergence Partners (chaired by Andile Ngcuka, formerly of the Elephant Consortium), Cell C (the third mobile licensee), and Japan-headquartered NTT.
- Vodacom, MTN and Cell-C—with Vodacom spending R28 billion in South Africa between 2008 and 2013 (primarily on infrastructure development to aid faster internet speeds), and MTN catching up with new investments of R21.5 billion on its network in 2013-15.²⁹ Cell-C also invested aggressively, as part of its broader effort to expand its mobile market share—but its infrastructural platform remained weaker than the other providers, and it struggled to provide reliable high-speed data services.
- Numerous local governments across South Africa. Cape Town, for example, has a R1.3 billion broadband infrastructure investment program underway.
- Broadband Infraco, a state-owned enterprise formally established in 2007, on the basis of large-scale pre-existing fiber optic cable networks inherited from other SOEs. However, its annual revenues for 2013/14 were below R350 million.

Then in 2013, South Africa’s Competition Commission weighed in, issuing a finding that Telkom had a history of abusing its monopoly power, and overpricing access to its networks. (As of 2013, Telkom was reported to control 140,000 km of fiber optic cable installed across South Africa—far in excess of any other provider.) In a settlement with the Commission, Telkom agreed to pay a hefty fine, to functionally separate its retail from its wholesale divisions, and to implement wholesale price reductions. Subsequently, following the appointment in 2013 of a CEO who finally brought stable, forward-looking leadership, Telkom has followed through on its commitments.³⁰ It has made its network more readily available to third party service providers, cutting both the cost of access to its network and end-user fees by more than half.³¹

²⁹ Sikonathi Mantshantsha, “MTN to spend R30 billion on infrastructure upgrades, *Business Day*, 5 March 2015. Accessed at <http://www.bdlive.co.za/business/technology/2015/03/05/mtn-to-spend-r30bn-on-infrastructure-upgrades>

³⁰ Between 2005 and the appointment in 2013 of Siphos Maseko, Telkom went through five CEOs, each of whom resigned (or was fired) in response to ongoing conflict with the Board, Ministry, and other parts of the political class.

³¹ Duncan McLeod, “What Telkom’s dramatic internet price cut means”. *Rand Daily Mail*, 4 May 2015. Accessed at <http://www.rdm.co.za/technology/2015/05/04/what-telkom-s-dramatic-internet-price-cut-means>

Messily and circuitously, as of late 2015, South Africa appeared to be muddling its way toward a relatively strong and competitive 21st century architecture for its telecommunications sector – even if one disproportionately dependent on (for now) relatively slower mobile, rather than fixed, broadband networks. But the intensity of inter-elite contestation within South Africa over the control of telecommunications-related rents (and rents more broadly) remains high. So it remains too soon to conclude that the seeming victory of checks and balances institutions, and thus of competitive, rules-based processes is irreversible—and that discretionary deal-making has been decisively trumped.

Mexico. Among the three case study countries, the dominance of a small number of powerful firms has been most comprehensive in Mexico—and the acceleration of competition and platform convergence has been slowest.

In both fixed and mobile telephony, Carlos Slim Helu’s telecommunications empire has been the overwhelmingly dominant player. The Slim empire has encompassed internet as well—though here it has recently been complemented by entry from the cable television company, Televisa.³² Telmex became an internet service provider (ISP) in the 1990s, first with the brand Uninet, a name changed a year later to Telmex Internet Directo Personal. In 1996, Telmex bought Prodigy Communications and took the brand to Mexico, renaming the service Prodigy Internet de Telmex. Thanks to their national coverage, Telmex rapidly became the leading national ISP.³³ However, Telmex’ dominance in fixed line, mobile and internet has faced rising regulatory, legal and legislative challenges.

As we saw in earlier sections, the competition commission, CFC, passed rulings on Telmex/Telcel’s anti-competitive practices, but these were successfully stayed in the courts through the use of *amparos* by Telmex’ lawyers. However, in 2011, Mexico’s Supreme Court ruled that the telecommunications regulator COFETEL had the power to set interconnection rates. COFETEL subsequently lowered these rapidly—facilitating the decline in mobile telephone prices evident in Figure 12.

Then in December 2012, the newly-elected PRI government of Enrique Peña Nieto signed the *Pacto por México* (Pact for Mexico) with the two major opposition parties.³⁴ This was a product of trilateral negotiations between the three parties, and combined a narrative of economic and

³² The fiber optics networks of cable television providers potentially comprise a rival to Telmex dominance. In 2010, the fiber optics lines of the Federal Electricity Commission (CFE) were partially privatized. The first award was to the consortium of Televisa-Megacable and Telefónica CFE at a price of 883 million pesos. In 2012 the Supreme Audit Office (ASF) stated that this led to losses of over 4 billion pesos to the state, and that the network would have been correspondingly more profitable if it had stayed in public hands. There is at least the suspicion of a favored deal.

³³ Agapito, Luisa (2013)

³⁴ See <http://www.as-coa.org/articles/explainer-what-pacto-por-m%C3%A9xico> downloaded February 28th, 2016.

political modernization with stronger citizen and social rights. It was seen as a way of breaking the policy and institutional inertia that had characterized Mexico.

Reform of the telecommunications sector was one of the main elements of the Pact. In 2013 the Federal Telecommunications Institute (IFT) replaced COFETEL, underpinned by a new Federal Law of Telecommunications in 2014.³⁵ Unlike its predecessor, the IFT is an autonomous federal agency. It is responsible for regulating the spectrum, telecommunications and broadcasting networks, access to infrastructure, and awards of concessions and permits

The law included the following.

- Determination of concentration limits: no company can own more than 50% of the domestic market, and if that percentage is exceeded businesses must divest assets, shares or any other input to allow the entry of more competitors.
- Monopolistic practices will be punished criminally, and companies that are dominant operators are subject to asymmetric regulation. This includes sharing of infrastructure, unbundling of local networks, regulation of tariffs to Mobile Virtual Network Operators (who share infrastructure), asymmetrical interconnection rates and elimination of national roaming charges
- Other concessionaires of public telecommunications networks would have access to the physical media, including optical, technical and fiber network belonging to the dominant operator
- Elimination of Domestic Long Distance: from 1st January 2015, dealers were required to refrain from domestic long distance charges for calls made to any domestic destination.
- Foreign investment is open to 100% in telecommunications and 49% in broadcasting, this under a principle of reciprocity.

In March 2014, the regulator, IFT, declared Carlos Slim's network 'preponderant economic agents' and thus subject to asymmetric regulation. In particular, the mobile termination rate for Telcel was reduced to zero (OECD Digital Economy Outlook 2015, p. 203) It also designated the cable television company, Televisa, a 'dominant player', meaning it would have to share infrastructure with competitors. In June, AT&T sold its stake in América Móvil to Carlos Slim. Then in 2015, AT&T entered the Mexican mobile market independently with the purchase of Iusacell.

On January 2016, the Secretariat of Communications and Transportation published the adjudication conditions for the "Shared Network" as a public-private partnership to increase the penetration of fixed and mobile internet in Mexico. Private companies would provide

³⁵ IFT. (2013). *¿Qué es la Reforma de Telecomunicaciones?* Retrieved 2015, from <http://www.ift.org.mx/usuarios-y-audiencias/que-es-el-ift/que-es-la-reforma-de-telecomunicaciones>

investment and expertise under a concession, while the state provides spectrum and the optical fiber backbone.

The sequence of measures in Mexico have the appearance of a substantial modernization of the regulatory framework, in terms of both overall institutional design—especially the creation of an autonomous sectoral regulator—and the set of specific requirements. In the past implementation has often diverged from the intent of regulation, and this remains a question for the future.

While the narrative is one of a shift to competitive, rules-based processes another factor is the relative influence of the major business actors: some observers have noted that a beneficiary of the reform is Televisa, owned by Ricardo Salinas, another of Mexico's billionaire business tycoons, known to be close to the President Peña Nieto. Moreover, the sheen has since come off Mexico's modernization drive, with scandals over corruption and security. But different parts of the state behave differently, and the best hope for the telecommunications sector is that the new institutional arrangements constitute an island of rules-based processes.

Comparative assessment. In all three of our case study countries, the most recent decade has witnessed a reversal of the earlier pattern of political and economic insiders working together to create rents, consolidate market power, and push back efforts to foster competition. Service expansion has been rapid, even as prices have fallen.

In all three countries, this reversal can be traced to a combination of changing domestic political dynamics and an associated expansion of influence on the part of autonomous checks and balances institutions—with the latter perhaps driven in part by recognition of the economic costs of restrictive regulatory policies in a dynamic sector that increasingly is central for economic development. But in all three countries, the risks of a return to less effective regulatory policies remain significant.

Surprisingly, given the experience in fixed and mobile telecommunications, South Africa's institutions proved to be the most adaptive. To some extent this was driven by shifts in political currents—the absence of politically-connected private players in Telkom's ownership structure subsequent to 2008 likely eased resistance to pro-competitive regulatory decisions. But the more fundamental impetus came from the country's checks and balances institutions, that were constructed as part of its far-reaching political settlement that underpinned the transition from apartheid to democratic rule. These stepped in and reversed some of the deal-driven rigidities which were threatening to clog up the system. This seems to have opened the space for vigorous competition amongst existing firms and new entrants, especially in mobile. But South Africa's overall politics has been moving towards more patronage-based processes—and it remains possible that these could again reassert themselves, especially in the context of recent government efforts to reassert its leadership role in the expansion of fixed broadband infrastructure.

In Mexico, something similar to the South African reforms may be happening. Again some moves started in the country's checks and balance institutions—especially some key decisions by the Supreme Court, along with the longstanding activism of the Competition Commission. But the more striking shift has been an apparent critical juncture in regulatory design, that was created as part of the “pact” between the three political parties, that included modernization of the institutional framework for telecommunications. This by no means implies that Mexico—or the PRI party—has dramatically shifted to a rules-based polity, as developments in other domains illustrate. But it has given birth to a stronger framework for the sector, and the initial experience suggests there is potential for a more competitive and dynamic outcome.

Turkey had led the way in relatively pro-consumer and pro-competition policies for mobile telephony. Facility-based competition is beginning to happen. But it is unclear how effective this will be in the current phase, especially as the ruling AKP's incentives have shifted away from fostering competition and EU accession, and towards consolidating political control around its own connected businesses.

IV. CONCLUSION

The past 25 years of the telecommunications sector has seen both immense technical change and widespread private involvement throughout the world. The interaction between business and the state has been a central feature, through privatization, regulation and market design.

A paradox? There is an apparent paradox. Our case descriptions have revealed a central role for politics, connections between business and political groupings, market dominant actors and favored firms. There is evidence of significant entrenchment, sustained rents, and regulatory capture. And yet in all cases there was substantial expansion in access, technological change, and, in the most recent period, signs of substantial, competition-increasing, change, especially in Mexico and South Africa, that had previously lagged Turkey. Moreover, unlike other infrastructure sectors—electricity, roads, water and sanitation—there has been much less renegotiation. How is all this consistent? It is useful to look at this through the prism of the questions raised in the introduction.

How is policy designed? Policy is not designed and implemented by social-welfare promoting technocrats carefully applying best global practices—despite the extensive interactions with international expertise. Technocratic thinking on market and regulatory design undoubtedly matters, but politics is central to whether and how policy is designed. The cognitive map of political leaders matters as well as that of technocrats! This was true, for example: in Mexico's privatization and more recent regulatory modernization; in South Africa's original choice to privatize, supported by the incoming ANC government; and in the initial delay and later implementation of Turkey's privatization, including AKP's coming to power as an outsider party committed to reduce corruption and join the EU. The alignment of policy with politics is a necessary condition for change.

Does private business enjoy entrenchment and sustained rents? In almost all cases the markets are monopolistic or oligopolistic. Influential business groups are dominant actors, especially in fixed line, but also in mobile. This is most extreme for Telmex in Mexico, dominant in fixed line, mobile and internet. But it is also a feature of Telkom in South Africa and Türk Telekom in Turkey in fixed line. Both of these two countries have had only two or three major players in mobile for much of the period. Entrenched positions are maintained through the initial creation of concentrated markets, business strategies of incumbents, and, in many cases, by failures in regulatory design or practice. This is again most evident in the case of Mexico's Telmex—that clearly enjoyed regulatory advantages and unusually high profit levels for much of the period. But we also saw the importance, and apparent advantage, of alignment of operators with the shifting policy factions in South Africa, and biases in regulatory effort between the favored fixed line incumbent and the mobile market in Turkey. Undoubtedly entrenchment and market power had efficiency costs, but it is also the case that rents were an important element of private sector involvement—as an inducement to take the risks, and in rent-sharing arrangements that underpinned (reasonably) credible commitments.

What are the interactions with technological change? There are two issues here. First, the rapid technological change in the telecommunications sector has meant that there were large potential productivity rents. This provided plenty of scope for rent extraction and supernormal profits, even as service was expanding. Telmex could make fat profits while formally staying within its (admittedly lax) RPI-X-based tariff formula. This increased the likelihood that private efforts were not (exclusively) around regulatory favors and support for market dominance, but also in pursuit of the productivity rents. It further increased the potential alignment between rents and social welfare gains.

Second, it is important for broader economic and social development that the private players keep moving toward the shifting technological frontier. We didn't look at this carefully here, but the fact that some of the dominant market actors in local markets also vigorously expanded internationally (notably América Móvil and MTN) is evidence of their keeping abreast of global technological change, as is the significant foreign presence in both South Africa and Turkey.

How do different parts of the state work? The state is not monolithic—in all cases there were tussles between different parts of the state, especially involving the checks and balance institutions. Here there is significant variation, both between and within countries. Turkey's Constitutional Court, South Africa's Supreme Court and (eventually) Mexico's Supreme Court showed substantial autonomy—in the last two cases in favor of more competitive market outcomes. Competition Commissions also typically acted, or tried to act, against anti-competitive practices, though these could be subverted by the court system, at least in Mexico. Most interesting is the evolution of the telecommunications regulatory authorities, that are most vulnerable to regulatory capture, but over time have acquired growing autonomy. This was marked by a sharp legal change in favor of formal autonomy in the case of Mexico in 2013 and was already formally present in South Africa and Turkey. This relative autonomy was

sufficiently supported by the political settlement to be effective for some of the time. This constitutes a further element explaining the apparent paradox: while politics is central, and business rents pervasive, long-term fights by at least somewhat autonomous checks and balances institutions have provided both limits on rent extraction and a spur to more competitive and dynamic market developments. It will be interesting to see if regulatory designs can shift to the prospect of supporting facility-based competition in the unfolding new world of convergence. And equally interesting to see if the checks and balance institutions can successfully withstand the larger pressures to rent-extraction and patronage prevailing in the polities of all three countries.

Is telecommunications different? There are clearly special features of telecommunications that are part of the story explored here. The combination of technological dynamism, productivity rents, some potential for competition, and rapid growth in demand have helped the fundamental alignment between rent sharing, market power, and real economic gains. However, we believe the general structure of interactions between politics, the state and the business to be more broadly applicable, even if the risks of collusive rent extraction, distributive fights, and investment-sapping risks are likely to be greater in sectors with lower productivity rents and less linked to global developments.

This is also likely to be the case in countries that are more authoritarian and with checks and balances institutions more deeply beholden to political influence. Indeed the rising authoritarianism and predation of the state in Turkey, the increasing capture of the South African state by political factions, and the renewed concern over the corruption of the Mexican state are all sources of concern for regulatory regimes.

So can governance countervail asymmetric political and economic power? On this overarching question the story is both cautiously positive and nuanced. In each of the three countries both political and economic power was highly concentrated—and this is likely to be characteristic of most or all developing countries. The telecommunications sector provides a domain that is ripe for rent extraction and influence. Yet, over time, the governance arrangements for the sector and for the countries have played a important role in keeping this asymmetric power in check—at times at best partially, but increasingly so over time. However, both the design, and, even more important, the implementation of these governance structures depends fundamentally on specific political structures and processes.

Are there general lessons for policy design? Finally, while there is much that is special to the sector and to the three countries, the cases illustrate *both* the importance of understanding the nature of domestic political economy in assessing the possibility of change *and*, in many cases, the potential for design choices to make a difference. For policy diagnosis careful, case study based interpretations are an essential complement to econometric and other methodologies. For development practitioners, it is this blend of political and technocratic skills that is crucial to effective policy design and implementation.

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