Reforming and Privatising the Telecommunications Sector in Jamaica:

Experiences of a Small Developing Country

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Introduction

This paper provides and overview of telecommunications privatisation and liberalisation in Jamaica. A great deal of research, for example **Noll, 2000[1] and Wallenius and Stern, 1994[2]** have found that the introduction of competition in the telecommunications sector, not only leads to improved performance over monopoly provision of services, but also results in lower prices, wider choice of services, wider access and faster expansion capacity. The findings from the Jamaican telecommunications liberalisation experience are consistent with these earlier studies.

Telecommunications Corporation of Jamaica Limited (TOJ) became the first public utility company and the second major state owned enterprise (SOE) to have experienced privatisation in Jamaica when the domestic and international telecommunications businesses were merged in 1987. In fact, a point writers often fail to recognise is that Jamaica and Argentina in 1987 and Chile earlier on were the first developing countries to privatise their telecommunications industry and this took place, four years after the trend setting of the UK experience in 1983.

Between 1972 and 1980 under the populist Peoples National Party (PNP) administration, major economic restrictions were introduced, as part of the macro-economic policy framework of democratic socialism, including severe barriers to international trade and the free movement of capital. During this period, government took a strong interventionist stance in the productive and commercial sectors. Government's policy called for ownership of the *'commanding heights'* of the economy. Telecommunications and electricity utility companies which had developed essentially under private ownership were acquired by the state. By 1980 over 400 enterprises were under state control including companies in the hotel industry, food importation, sugar, airlines, cement, commercial banking and petroleum, with major interest also in the bauxite and alumna industries.

The privatisation process started in 1981 with two small enterprises, those of Seprod Ltd and Versair Inflight Services Ltd. Privatisation or divestiture as it was then called was never pursued in earnest as a deliberate policy of the government. In fact, in 1986 government owned more productive assets than in 1981 at the commencement of the divestiture programme.

Privatisation in earnest was forced on the government, being a direct result of the IMF stabilisation and the World Bank's structural adjustment loan conditionality. Neither the Jamaica Labour Party (JLP) nor the PNP administration had a policy to include utilities in their privatisation programme. As late as 1986, Prime Minister Seaga announced in his budget that government would not divest ownership of the telecommunications system and that it would always be operated in the public interest. This announcement was made despite the fact that merger discussions were taking place between the publicly-owned Jamaica Telephone Company Limited (JTC) and Jamaica International Telecommunications Company Limited (JAMINTEL), 51 percent owned by the state with the rest **owned by Cable & Wireless of the UK**[3].

The PNP administration which later sold the remaining 40 percent of the TOJ shares to C&W (without offering any of these shares to the Jamaican public), itself had been very critical in 1987 of the first sale of TOJ shares declaring the transaction was a sale of the 'Jamaican patrimony' and that the policy would be reversed on the re-election of a PNP government.

The prevailing view prior to nationalisation was that firms operating in utility industries, such as telephone and electricity were natural monopolies and public regulation should provide for only one **industry service operator**[4]**.** With the shift to democratic socialism the view was that they are best owned and operated by the state in the public interest. The view was that under state ownership there was in fact no need for separate regulatory bodies for these utilities.

Neither administration understood or came to terms with the complex issues surrounding the privatisation

of an infrastructure utility, nor the rapid technological changes that were taking place within the telecommunications sector. The privatisation was treated in such a way that no serious consideration was given to the problem of regulating TOJ as a monopoly, or providing for competition in an industry that was rapidly losing its natural monopoly characteristics.

The JLP was led into privatisation of telecommunications because the increased demand could not be met by local finance and although privatisation had commenced in 1987, 12 years later the government had failed to introduce effective mechanisms for independent regulation of what was in effect a legally created 49 year franchised monopoly. The necessary regulatory changes did not come about until 2000 when a Telecommunications Bill was enacted.

Industry Restructuring and Privatisation

Under the industry restructuring agreement the two shareholders, Cable and Wireless (C&W) and the Government of Jamaica (GOJ) undertook to pool their shares in the two operating companies (JAMINTEL and JTC) to create a new Company Telecommunications Corporation of Jamaica Ltd, later renamed C&W Jamaica Ltd .company. The independent shareholders of JTC were also permitted to receive shares in the new company. A new regulatory mechanism was devised and formally incorporated in amended licenses, stipulating how the government was to set prices. Divestiture of some of the government's shares in the new company was also **agreed**[5]**.** As part of the reform package government committed itself to the introduction of a new telecommunications bill to recognise the new technologies and certain pledges which were made **to C&W**[6]**.**

On the commencement of restructuring in May 1987 the shareholding was: GOJ 82.7 percent, C&W 9.4 percent and the public 7.9 percent; GOJ's holding was further reduced in October. Finally, in September 1988, GOJ offered 126,500 ordinary TOJ shares, approximately 13.1 percent of the issued capital of the company, to the public and retained 40 percent of the equity with C&W owning 39.6 percent.

The terms of the offer were **as follows**[7]**.**

- 126,500,000 out of the 965,683,648 issued ordinary shares were offered to the public. Each share had a par value of $1 and a book value of $1.19 share was offered to the public at 88 cents, a discount of 12 cents.,
- 21,100,000 shares, approximately 2% of the issued share capital were reserved for employees under an Employee Share Option Plan (ESOP).
- 51,000 residential customers of JTC were accorded priority to acquire up to 1,750 shares per residential account, approximately 105,400,000 ordinary shares.
- Pursuant to the shareholders' agreement, application for the listing of TOJ's shares on the Jamaica Stock Exchange was to be made prior to the commencement of any public offer.
- Intrinsic to the offer was the underwriting of the shares; the underwriters agreed to take up half of the share offer.

The underwriting of the shares was arranged and coordinated by a local bank supported by fourteen (14) other Jamaican financial institutions. With respect to the ESOP, 21,100,000 shares were reserved for full-time (eligible) permanent employees of the TOJ group. The government and the company launched a major publicity drive to secure wide employee participation in the offer. This in effect brought an end to the JLP phase of the privatisation process.

In July, 1989, the new PNP administration which had only a few months earlier come into power and which had promised in 1987 to reverse the privatisation did a volte-face and reduced GOJ's percentage

shareholding to 20 percent. This sale provided for C&W to increase its shareholding to 59 percent of TOJ' stocks. Finally in May 1990, the PNP government sold its remaining shares to C&W resulting in C&W owning 79 percent, employees 2 percent and the public 19.0 percent of the shares in the privatised TOJ.

Arguably therefore, both JLP and PNP administrations more or less were dragged into privatisation of the telecommunications industry; there was no intention at the outset to transfer controlling interest to a foreign investor. Prime Minister Seaga never succumbed to laissez–faire, neo-liberal market economy which was being espoused by Milton Friedman and the Washington Consensus. Seaga believed in development economics. He was a nationalist and did not see a minimalist role of the state; rather he felt capitalism should be directed. However, he like Manley later was forced to accept the World Bank and the IMF structural adjustment programmes, which later disseminated the manufacturing and social sectors of Jamaica. Interestingly it was the socialist Manley, rather than the pro-market Seaga which gave majority control of the telecommunications industry to a foreign operator; and the market reforms which Seaga paid lip service to in the 1980s were to receive strong support from the 1990 converted capitalist Manley.

Institutional Endowment

In the period up to 2000, as in most developing countries the main customers of domestic telephone services were the middle and upper classes and the business community, the swing voters in Jamaican elections. This made telephone pricing and services an important political issue. Keeping local telephone prices low and expanding access to meet the needs of the growing middle class was the key issue for the political parties which tended to keep telephone policy stable up to 1998, despite changes in administration or ideology. Meeting middle class demands to expand the services and at the same time keeping prices low required an institutional governance structure that provided strong incentive to induce investments in a highly specific and non-transferable asset.

A regulatory governance structure based on legislation as is the case with the USA, suffers inherent weakness in meeting this requirement. It will not be seen by foreign investors to be sufficient to put a curb on administrative discretion and political opportunism, since the party in power can unilaterally change the law. Regulation based solely on legislation tends to be unstable and alternative institutions have been needed to provide the stability required for credible regulation that honours regulatory commitment.

In the USA, the regulatory commitment or contract is sustained by the separation of the judiciary from the legislature and the executive branches of government, by the constitution, and by a well developed body of administrative procedures that specify how regulatory agencies must behave, reach decisions, and may be challenged. The independence of the judiciary is therefore critical in restricting the discretion of the regulatory agency or the executive. Where these established procedures are absent, or where administrative law does not adequately restrain discretion, then **very specific regulatory legislation are required.** If the

country lacks a well established tradition of administrative procedures and administrative jurisprudence as was the case with Jamaica and for most Commonwealth developing countries, then it will be necessary to restrain political and regulatory opportunism by specific contract provisions specifying the rights of the utility provider.

Both the Jamaican and British cases demonstrate why countries opt for a regulatory framework of both legislation and license. (**David Newbery (2000)**[8] . In both cases the regulatory framework was vulnerable to opportunism. Parliament is sovereign and can overrule previous legislation with simple majority making legislative commitment relatively weak. In the Jamaican case where there is a written constitution; there is the added protection that a two thirds majority of parliament is needed for matters with constitutional implications.

The courts in both countries are independent and will uphold contracts; the result then is that the main body of regulation is normally included in the licence. Licenses are legally enforceable contracts that will be upheld in courts by an independent judiciary and cannot ordinarily be unilaterally changed. Because utilities have durable, immovable and valuable assets, heavy sunk costs, investors require a durable and stable regulatory contract which both government and regulator are committed to uphold.

This is the essence of the regulatory commitment problem, institutional endowment is therefore of critical importance when it comes to creating a new set of institutions to regulate infrastructure industries, upon privatisation. The modern theory of regulation has come to emphasise informational commitment and transactional costs considerations. Most developing countries in Eastern Europe and in Africa are far less endowed with the key institutions and therefore face regulatory commitment problems.

Utilities in Jamaica unlike the UK have not been privatised with the passage of an up to date primary legislation specifying the general framework for regulation and with the requirement that the utilities supplying the services specified must obtain a licence. The reason for this is that in Jamaica the enterprises were limited liability companies and all the government was required to do was to sell the shares in the companies in order to carry out the transfer from the public sector to the private sector. There was no need to obtain parliamentary approval to effect the privatisation of a particular enterprise. Jamaica therefore did not go through the stage of corporatisation, as was the case with Britain, New Zealand and Australia.

The intention however, was that for water, telecommunications and electricity an enabling legislation would have been enacted to replace the existing industry acts, which in the case of electricity and telephone went back to the 1890s. The first of the industry acts did not come on stream until 2000 when the Telecommunication Act was passed.

Telephone politics in Jamaica has tended to be played out in the shadow of the various licence negotiations. Major turning points in both telephone and electricity regulations have followed the timing of the licence changes. Both parties (The JLP and PNP) have dominated the political agenda since the 1940s, alternating power every decade (two electoral cycle or two terms), except since 1989 when the PNP has been able to win four consecutive elections. Patronage and fund raising arrangements give the parties a strong hold on their constituencies and therefore Jamaica's political structure provides substantial discretion to the party in power however, the governments have been and are constrained by the upholding of property and contract rights by the courts.

Evidence of the role of the judiciary in constraining administrative decisions is provided in this section. As briefly mentioned above, the judiciary played a minor role in the first 30 years of independence, except during 1970s where its adherence to property rights partially contributed to restraining the PNP government from outright expropriation of land and industrial enterprises. The judiciary, however, did not completely restrain the government in its regulation of the private utilities and the populism of both the JLP and the PNP at that time translated into very activist regulatory agencies which the judiciary could not reasonably have been expected to effectively restrain.

Notwithstanding however, the courts seemed to have been able to restrain outright 'impropriety" in dealing with the issues. For example: JTC's 1945 license stipulated that the company's rates should provide a return of 8% over rate capital. Deficit earnings below that level could be accumulated, and should be counted towards earnings in the next rate review by the Rate Board. The license also stipulated that both the company and the rate payers had the right to appeal the Rate Board's decisions to the Supreme Court. In 1956, the Rate Board disallowed JTC's claim to increase rates to compensate for past deficiencies. JTC, appealed to the Supreme Court and in December 1956, the court determined that JTC was entitled to recover those amounts. This was the last time up to 2000 that the Jamaican Supreme Court actually restrained the administration in its relation with a public utilities company.

The judiciary could also be expected to constrain the government on constitutional decisions, and in respect of specific contractual commitments with private parties. In the case of the regulated utilities, the regulatory framework was based on the enabling laws (i.e. the 1893 Telephone Act, the 1973 Radio and Telegraph Law, the 1891 Electricity Act, etc.); the particular license, and the 1966, the PUC Act. Only the license could have been seen as a contract between the government and the firm the terms of which could form the basis of an appeal to the courts. In principle, the telephone companies (both international and local) could appeal administrative decisions to the judiciary (separate from its right to judicial review). It should be noted that JTC only appealed to the courts following an amendment to the license that stipulated a minimum rate of return, which supports the view that the courts effectiveness in restraining legislation-

based administrative decisions may be quite different from their effectiveness in upholding license stipulations, further suggesting the incompleteness of legislation.

Conditions of the Privatisation

Notably, the reversal of the PNP administration policy with respect to telecommunications privatisation which had called for state ownership (ownership of the 'commanding heights' of the economy) was a direct result of the IMF conditionality constraints on the public sector borrowing and the need of the government to increase its foreign exchange resources to meet the IMF net foreign exchange targets in May of 1990. The IMF structural adjustment policies which called for drastic reduction on public expenditure, as well as serious cut back on foreign indebtedness had come to seriously restrict any room the government had to manoeuvre. The PNP administration had also failed to restructure the licence conditions upon transferring majority control from the domestic owners (government and the local private sector) to a foreign owned company. This is a classic example of a multi-national company being able to use its powerful bargaining power to extract monopoly rent from a weak developing country.

The new set of licenses granted in 1988, marked a regulatory turning point for **Jamaica**[9]. The four exclusive licenses under the 1973 Radio and Telegraph Control Act and the licence under the 1893 Telephone Act committed the government to maintaining the profitability of the company at their levels before the 1988 agreement, thus ensuring operating returns sufficient to cover cost of capital. Whilst the exclusivity went well beyond 'conventional' exclusivity agreements at the time it was arguably the only option available to the government to secure commitments to high levels of investments in the sector. While TOJ could not increase its real price, it could rebalance its prices, giving the company an incentive to increase price on the relatively inelastic domestic demand sector. A gentleman's agreement was arrived at providing for the freezing of domestic prices for at least five years; and domestic services came to be heavily subsidised by international services.

The licence in essence cemented the cost-plus rate of return tariff mechanism. The rate of return was also based on shareholders' equity rather than the traditional US rate-base mechanism. Each licence was granted for a period of 25 years with an option to renew for a further 24 years.

The five licenses were:

- The All-island Telephone Licence
- The wireless Telephony Special Licence,
- The Telex and Teleprinter Special Licence,
- The Telegraph Services Special Licence; and,
- The External Telecommunications Services Special Licence.

The non-exclusive service was defined as all forms of telecommunications services, not falling within the above (exclusive services) and not exempt under the Radio and Redifusion Act. The licence granted to C&W for cellular services was treated by the ministry as non-exclusive, however, since TOJ refused to interconnect third parties to their transmission system the cellular licence was de-facto exclusive.
The 1988 license and agreement did not recognise any independent regulatory agency. A simple mechanism for price adjustment and dispute resolution was provided. Government had a short time to respond to a request for a rate increase and if the two partners could not agree the requirement was for the dispute to go to arbitration. There was no provision for formal public hearings; however, it was possible to appeal license violation to the Supreme Court.

As the Special Adviser to Deputy Prime Minister Patterson, the author disputed the exclusivity right claimed by TOJ to *'all forms of telecommunication in, from and through'* Jamaica. The legal opinion was that the five licenses gave TOJ the exclusive right for 25 years to operate only the fixed line services in the domestic market through paired wire network and the exclusivity did not apply to domestic wireless services, as the 1893 Telephone Act only recognised the technology of paired wire services. However, TOJ's position was that the five licenses conferred exclusivity to provide all forms of telecommunications in, from and through Jamaica, except radio and television broadcasting and cable television. This in effect would have given exclusivity to all forms of telecommunications traffic in, out and through Jamaica and locked out competition in telecommunications services for another 49 years.

The 1893 Telephone Act also was not only silent with respect to customer equipment and international services; it never anticipated the new technologies of fibre optic transmission, cellar service and digital data transmission. Additionally, it gave the minister authority to establish domestic monopoly only over paired wired services. TOJ, however, had first right of refusal to most domestic and international services, and this in effect at the time gave the company virtual monopoly over all telecommunications in Jamaica, excluding cable, radio and television broadcasting. The Radio and Telegraphic Control Act expressly precluded the company from owning and operating radio and television broadcasting services.

The Sale Transaction

Pursuant to the shareholders' agreement, application for the listing of TOJ's shares on the Jamaica Stock Exchange was to be made prior to the commencement of any public offer; intrinsic to such an offer was the underwriting of the shares. Underwriting of the shares undoubtedly guaranteed the success of the entire share offer. Strong public criticism developed over the low price of the shares to C&W in 1989, the closed nature of the offerings to C&W and the failure to provide for competition in the market, including access to connect to the transmission network by third parties.

In granting monopoly status for most of the services, it was claimed government took no account of the

monopoly value of the shares above the par value of J$1 to C&W. The comment from the press was that the shares to C&W were significantly under-priced and involved a redistribution of income, with no justification for this action. Whilst accepting the initial restructuring, general surprise was shown at the subsequent sale and absolute astonishment at the final transaction in respect of the remaining 20 percent equity. Public concern over the inadequacies of the telecommunications divestment intensified in the 1990s.

Public concerns were raised **by Girvan, Dunn, Duncan, Ritch and Gooden of JAMPRO between 1991 and 1994[10]-.** The major criticisms were against government's announcement to introduce new legislation which would have: cemented the monopoly status in law for all forms of telecommunications for 49 years, the cost-plus pricing formula, the lack of incentives to the TOJ to be operationally efficient, the lack of transparency in the rate-setting procedure, the absence of independent regulatory oversight, the failure of government to allow competition for wireless services, the failure of TOJ to pay for the radio spectrum, and the writing-off of stamp duty tax to a company 80 percent foreign owned.

On the positive side, the domestic rate in real terms (1996) was less than what it was in 1966. The company had digitalised the entire network making the telecommunications system one of the most modern in the world. Annual expansion of new lines increased from 5000 up to 1990 to 50,000 per year after 1992, and in addition, a cellular service, albeit with obsolete technology was introduced by TOJ in 1994. It should however be pointed out that C&W did not bring any significant levels of new equity capital to the table. The monopoly on the international traffic allowed the company to maintain international service charges, earning well over US$ 100 million per year up to the mid-1990s.

Government Failure

The Ministry of Finance for its part handled most of the transactions for the sale of TOJ shares. The entire TOJ privatisation demonstrates lack of planning, lack of establishing clear objectives, lack of transparency and a failure to balance the long-term and wider interest of the society with that of the producers and short term gains. Connected relationships are a major problem in small societies. There is no doubt that C&W used its powerful negotiating strengths to extort rent from successive administrations that had failed to understand the development complexities of telecommunications, and the increasing role telecommunications was to play in global communications and international trade. This is one of the major dilemma small developing countries faces when taking the privatisation path, especially for major utilities.

The 1988 licence under which TOJ initially operated, specifically named the portfolio minister as the regulator and TOJ insisted on this being the practice. The Office of Utility Regulation (OUR) which came into operation in 1997 following the passage of the OUR Act in 1995, was a mere advisor to the Minister with very limited regulatory decision making powers. Efforts by OUR to obtain information from the TOJ

were always difficult and fraught with conflicts, as the company would question the legitimacy of any such request.

The 1987 agreement had provided for new legislation to be introduced within two years to recognise the monopoly structure, the emerging technologies and for new licenses to be issued in line with the new legislation. In 1991, a new telecommunications act and licence were drafted and presented by the portfolio ministry. This was despite concern that the draft which was introduced carried major inputs from TOJ and that it would have unduly cemented TOJ's interest.

In 1996, Prime Minister Patterson directed the development of a new telecommunications policy to be carried out. The author was contracted by the IADB to develop the new policy and this was carried out after intensive consultation with TOJ and C&W. In principle the policy recommendations built on the commitments given in the WTO framework agreement and recommitted government to pursue liberalisation of the **industry**[11] **.** On regaining the confidence of the electorate in the 1998 elections, Patterson appointed a reform minded minister to take over the telecommunications portfolio. It was not until then that sustainable efforts were actually made to de-monopolise the sector. In 1998, the new minister updated the telecommunication policy document, affirming government's commitment to undertaking market, legal and institutional reforms. Up to then TOJ had resisted all attempts by government to issue competitive mobile licenses.

September of 1998 marked another critical juncture in the reform process **(Brown, 2003)**[12]**. C&W** finally came to an agreement with government ending the company's exclusivity. **This made Jamaica the first English–speaking Caribbean country to embark on a path of full liberalisation of the telecommunications market.** In this agreement, C&W undertook in 1999 to surrender its five licenses granted under the 1987 agreement and its rights of exclusivity for all forms of telecommunications to, from and through Jamaica, in consideration for GOJ adopting new legislation reflecting an understanding reached in a Draft Instrument previously approved by TOJ. Government on its part agreed to surrender its sovereign rights to set new policies for the telecommunications sector over a transitional period. Both parties agreed to the withdrawal of all litigation and claims relating to the 25 year exclusivity dispute.

The agreement also provided for the OUR to be the regulator of all telecommunications services and C&WJ'S operation, and the replacement of the cost plus rate of return economic regulatory method by the incentive price cap regulatory method. The original OUR legislation had provided for the regulator to monitor 'approved industries' and the intention was that sector legislation would have been introduced for water, electricity and telecommunication providing for a multi-sector regulator to regulate these utilities. The first of these Acts did not come about until the Telecommunications Act was passed in 2000.

There were still cause for concern with some of the changes which were introduced in 1999 agreement;

- The Act reserve the power to the sector minister to issue instructions of a general nature to the OUR. This provides an opportunity for political intervention into regulatory affairs and has already resulted in tensions between the portfolio ministry and the regulator, which has resulted in a number of court actions by Digicel against the OUR and the OUR against the Minister;
- The Minister is reserved the power to determine the types of and number of licenses. Again further opportunity for political intervention;

- The legal rights of the VSAT operators were undermined, as under the agreement the right to bypass the incumbent international gateway during the transitional period was withdrawn;
- The agreement provided for the triggering of a number of compensation claims. If the laws passed by the sovereign Parliament were inconsistent with the Policy Drafting Instrument (PDI) or if the courts or the regulator handed down decisions inconsistent with the PDI then it would have been possible to trigger compensation claims. The Government of Jamaica constitutionally has no control theoretically over Parliament and an independent regulator but agreed (not withstanding that it was for a short period) to bind future administrations and the regulator to the agreement set out in the PDI.

The legislative framework also left certain gaps:

- The Broadcasting Commission's role over cable industry is not clear. For example does it have the power to address mergers of cable television;
- Will the broadcasting Commission remit extend to content regulation over mobile phone;
- There is unclear provision over the role of OUR in interconnection price regulation and this is what gave rise to the series of court cases involving the OUR the minister and Digicel;
- The division of the respective roles between SMA and the OUR over licensing of new operators is not clear. Both SMA and the OUR advise the minister on licensing, although the minister makes the final decision.

The Act however eliminated some of the legal uncertainties and established a much clearer framework for the entry of private telecommunications investors. The agreement provided for liberalisation to take place over a phased period. The results were that a number of new telecommunications service operators entered the market and this competition led to fixed land line expanding from 416**,000 in 1998 to 511,000 by 2001**. C&WJ's mobile service also expanded from 92,000 to 411,000.

Regulation of Telecommunication in Jamaica

Jamaica is an interesting case to explore the roles of institutions because in the 60 years since Jamaicans were granted the right to vote there have been several important regulatory institutional changes accompanied by changes in the performance of the sector. Not only has Jamaica experienced different

regulatory regimes, it also has experienced different ownership arrangements – from private ownership, to public and to private again. The variety of regulatory institutions and ownership arrangements, coupled with the extraordinary stability of Jamaica's political system, provides then, an opportunity to explore, at least qualitatively, some of the main hypotheses of this paper. Prior to privatisation in 1987 there were four distinct regulatory periods: telephone under colonial rule, pre-1962; the period of negotiation for the 1966 All–Island Licence, 1962 -67; the period involving the quasi-expropriation of JTC's assets and short life of the PUC 1968-75 and the nationalisation of JTC and its operation under public ownership 1975-1986 Beginning with privatisation there have been three further distinct regulatory periods: the period of monopoly control by C&W and ministerial regulation, 1987-1996; the introduction of competition mainly through the competition authority, 1994-2000 and the phased liberalisation and operation of an independent regulator which commenced in 2000.

The main hypothesis that is advanced and supported by evidence in this paper is that given the nature of Jamaica's politics and political system, legislation based regulatory mechanism (e.g. U.S. regulatory style) constitutes an implicit contract that is too flexible and incomplete to provide the required safeguards for investment and growth. Instead, regulatory mechanism based on specific long term contracts between the government and the companies may, if properly designed, provide such safeguards. These long term contracts, however, cannot be designed to be fully contingent. As a consequence, they will necessarily contain ex-ante rigidities and inefficiencies. All long term contracts are incomplete agreements, hence changed circumstances may require the need for renegotiation initiated either by the investor or government.

As with the original paper by **Spiller and Sampson (1994)**[13] **and** which was further developed by **Levy and Spiller (1996)**[14], the central problem of regulatory design as it relates to industries characterised by market failure features is that of establishing a credible and effective regulatory institutional framework. The three fundamental dimensions of regulatory commitment are substantive written restraint on the regulator, restraints hindering a unilateral reversal of or amendments of the overall regulatory framework by the executive and the introduction of institutions which seek to safeguard these restraints. A country's specific institutional endowment provides a set of constraints and resources that must be taken into consideration in designing a credible regulatory regime. The regulatory commitment is at the heart of the problem, in that, with the privatisation of once publicly held enterprises credible regulatory regimes are necessary to secure and sustain private investments**,** expand and modernise infrastructure industries. The **paper builds on North (1990)**[15]**,**

The core issue then is to identify features needed by a regulatory framework to support private investment and or private ownership, which are highly capital intensive, have considerable economies of scale and which provide services for household welfare and inputs for industry and commerce. A major problem is

that it is difficult to write time-constraint, enforceable contracts for necessary period ahead that can cover all the necessary contingencies. The regulatory contact is an implicit principal–agent contract under which the regulator acts for the principal; customers, the government acts as an agent for the citizens and the management of the utility acts as an agent for the stockholders and investors. The solution is to develop an enforceable regulatory contract which is not vulnerable to post-contractual opportunism and, hence is relatively explicit. In countries with embryonic parliamentary and legal systems especially highly politicised countries with no tradition of enforcing property rights and separation of powers this can be challenging.

The design of regulatory systems therefore involve two distinct levels; the mechanism to constrain regulatory discretion and resolve conflicts that arise in relation to these constraints and the detail rules governing pricing, market entry, interconnection and technical monitoring. In order to limit administrative discretion the basic framework must include substantive restraints on the regulator and executive embedded in the regulatory legal system. Of particular importance is the independence of the judiciary and the nature and structure of the executive and legislative branches. Rules that appear optimal from a developed country point of view may not be feasible in a particular country. In the absence of institutional endowment required for workable regulation, a country may find it possible to commit to stable rules of the game through certain modalities of privatisation, such as international guarantees against certain non-commercial risks, underwritten by government or provide wide distribution of share ownership which increases the political cost of reneging on commitments. This emphasise the difficulty of transplanting regulatory system from one country to another, especially systems which have worked in developed societies.

The regulatory structure needed for Jamaica in the 1980s and 90s to secure badly needed network growth and modernisation, whilst designed to ensure credibility was inconsistent with economic efficiency: lack of incentives or control to contain costs, a distorted price structure with excessive cross-subsidies and sweeping monopoly privileges. However, it became clear that this regulatory regime which carried a trade-off in favour of growth against efficiency in the face of rapid global technological developments, market dynamism and competitive pressures was not able to survive into the twenty first century. Utility regulation in the pre-1980s which was production and engineering driven has come to emphasise the links with political incentives and institutional realities.

Decentralised constraints on regulatory agencies or ministerial departments are usually not binding in Jamaica as its parliamentary system with two strong and competitive parties, ensures that the party in power has full control over legislation. As a consequence, regulatory laws, either sector (e.g. the Electricity Act, the Telephone Law) or agency specific (e.g. the Jamaica Public Utilities Act) will usually not serve as ex-ante constraints on the administration/regulators. Thus, for example, a ruling by the courts that a particular administrative decision violates the statute can be overturned by appropriate legislation during

the same administration. On the other hand, operating licenses are contracts between the government and the company. While the government can change the law, it cannot unilaterally alter the terms of the contract. Furthermore, because of the nature of Jamaica's courts, independent, with long lasting tenure and with final appeal level to the Privy Council in London, they can be called upon to determine alleged violations of the contract by either party. To be sure, specific long term contract between the government and firms is not the only feasible way of restraining administrative discretion. Nevertheless, as shown below, they have been the most important instrument used throughout the last sixty years. Thus, in trying to provide an assessment of whether the current regulatory and ownership regime could have been designed better, an understanding of both the reasons for the prominent use of this particular type of legal form and of its consequence is required.

Both administrations and firms have seen the importance of these regulatory instruments and they have been used during different **periods with different results[16].** A major result of this analysis is that the nature of those licenses given Jamaica's political structure and politics has been key determinants of the performance of the industry. In particular, it is shown that the sector develops relatively well during the periods of time when the licenses constraint the ability of government to set rates with political consideration in line (before independence and after 1987). On the other hand, the formalistic but substantively unconstrained regulatory structure defined in the 1966 Public Utility Act, under which the 1966 domestic license was granted, set the stage for the large extent of discretion taken by the newly created regulatory commission. Such regulatory flexibility increased the contracting costs between the government and the company, triggering the eventual nationalisation of the domestic company to the government in 1975.

The structural changes of 1987/1990 again brought about another set of major changes in the way Jamaican telecommunications sector have been regulated and organised. Not only were the institutional changes the most drastic since the introduction of the PUC in the mid-1960s, the sector subsequently has experienced an unprecedented vitality. In 1990 there were only 89,753 telephone lines having increased from 85,487 lines in 1973. During the period of state ownership there was virtually no expansion of the service. **The main hypothesis advanced is that empirically the performance of the sector responds to a large extent to the resolution of the government/firm contracting problem through the writing of a regulatory contract that was seen as credible and binding.** Furthermore, the regulatory contract was designed so as to reduce short run political opposition. It now remains to explore to what extent these regulatory changes could have been improved upon, given the political, contracting and structural constraints.

Creation of TOJ and the Impact of the Reforms

The movement towards the creation of TOJ and the introduction of the 1988 licenses implied large changes in the way the sector operates. The real price of international calls after privatisation started in 1985 ceased

to decline, and remained more or less constant up to 1994. The profitability of the companies also had been systematically high but well within the license-prescribed range. The high level of profitability allowed the companies to increase their levels of investments. The increase in the number of main lines was rapid, as well as the increase in the value of the network's fixed assets. Furthermore, the increase in profitability allowed JTC to finance a large part of its investments through long term debt.

The increase in the size of the network implied substantial welfare gains for consumers. We can decompose the change in welfare as the sum of the changes in consumer **surplus, government revenue**[17] and firm's profits. Changes in consumer surplus, for each segment - international and domestic - had two sources: first, a change in prices **faced by consumers**[18]**,** and second, increases in **the network**[19]**.** Changes in consumer surplus up to 1987 from network expansion were almost always positive. Estimate made showed that increases in consumer surplus doubled to J$100M for 1988-1990, and in 1991 reached $350M. Until 1987, changes in consumer surplus from network expansion were more or less evenly divided between domestic and international services, but following 1987 the great majority of the gains came from international services. Note that the consumer welfare measure does not take into account several developments, all of which should have provided additional welfare increases. First, the company had been installing fibre optic cables around the island and within all Kingston exchanges. Second, the island had been almost fully converted to digital technology by 1994 and third, C&W introduced cellular telephone in late 1991.

Undoubtedly then, post 1987 has been good for consumers, the firms and the government. To what extent this welfare increase could have been replicated without the creation of TOJ and its privatisation is debatable. The history of the JTC includes several development programmes that went nowhere, as financing and pricing problems delayed or pre-empted their implementation. On the other hand, the 1987 regulatory change provided the company with a relatively stable regulatory environment that could facilitate the implementation of such a large expansion programme, even without the ownership changes.

In terms of the international network, during the 1970s and 1980s experience suggests that neither C&W nor GOJ found it profitable to or could have extended their exposures in the company. The post 1988 experience was quite different, with TOJ implementing a rapid process of development of the international network. The implication is that the combination of privatisation and regulatory reform provided C&W with incentives and confidence to invest in its Jamaican operation which the company did not have prior to 1987.

An Assessment of the Regulatory Reforms of 1987

It is possible to conjecture whether the regulatory changes of 1987 could have been instrumented better. A number of shortcomings of the regulatory changes of 1988 and of the manner in which the privatisation

was undertaken are highlighted and can be classified into three groups: competition, pricing and ownership policies. The regulatory and structural changes of 1987 completely excluded the opportunity for competition, even in the more dynamic segments of the sector; maintained a policy of cross-subsidisation towards the domestic/household segment; generally incorporated an inefficient pricing scheme; emphasis in the privatisation process was on direct sales rather than public offerings providing for ownership concentration in a foreign hands with limited opportunity for domestic ownership. All these features have, on the one hand, significant income redistribution aspects, and may, also have, impaired future evolution of the sector.

A more efficient set of regulatory alternatives could have been selected and implemented in that the 1987 regulatory change could have provided TOJ with monopoly over the basic local network (the local loop then was still a natural monopoly), and provide for competition (competition was certainly possible in the international business) elsewhere. It could also have instituted a flexible pricing scheme with small administrative discretion (e.g. price caps): and ensure a wider ownership base. This scheme would have, on paper, looked much more efficient given the rapid technological changes taking place in value added service and long distance communications. In principle, these would have provided TOJ incentives to innovate and to reduce its costs, and would have also in principle provided for widespread political support for maintaining the privatisation process. The question however is whether these changes could have been successfully implemented in the early 1990s in Jamaica.

If a decision had been taken not to provide TOJ with a total monopoly over all telecommunications, both domestic and international the possibilities of cross-subsidisation would not have been possible. There would have been political costs of introducing competition in value added and long distance communications (including international) at the time. These costs, however, would have depended on the extent of competition allowed. The Jamaican government choose an extreme point on the competition-monopoly spectrum. It opted for expansion rather than efficiency.

Whilst a more narrow monopoly franchise could have been granted, it would have required greater institutional design. In particular, a narrow monopoly franchise, may grant the administration (ex-post) discretion on the definition of the local/monopoly segment. For example, assume that the monopoly is just for the local network; in that case, should fibre-optic cables be considered part of the **network?**[20] Should large users have been allowed to by-pass the network? Should cable TV have been considered part of the network? While, in principle, providing regulators with flexibility on these and related matters could have motivated the firm to adopt proper pricing and to innovate, administrative discretion could also have been used by the regulators to expropriate the company's quasi-rents.

To counter-balance the extent of administrative discretion, a conflict resolution process, such as arbitration could, in principle, have been developed. Alternatively, the license could have defined precisely the boundary between competitive and monopolistic sectors. Thus, terminal equipment, value added services, cellular, cable TV, and even international communications, could have been clearly unbundled from the TOJ monopoly. A second option could have defined precisely what TOJ monopoly covered and what could have been open for competition. These issues were later to be faced in the privatisation of the electric utility and again the government settled for a tight monopoly.

Although undertaking a more pro-competitive policy would have limited the opportunities for cross-subsidisation and thereby would have had a short run political cost, the fact that the GOJ pursued a total monopoly policy was, to a large extent, a missed opportunity. Reducing the extent of the legal monopoly would also have had fiscal implications, as private investors would have been willing to pay less for the company. Thus, while society could have benefited from a more rapid technological change and introduction of new products under a more narrow monopoly stipulation it would have paid up-front with a reduction in the revenues collected from the privatisation. Given the rapid and unpredictable technological change that was taking place in certain segments of the industry, such a trade-off would have exposed society to added risks which one could argue was worth taking.

In the case of the introduction of alternative pricing schemes there are several schemes that could be implemented. The one chosen in Jamaica was a rate of return on equity, while this pricing scheme provided the incentives to invest; it did not provide enough incentives t**o reduce costs. Taylor**[21] **state** that the regulatory and pricing mechanism instituted in the licence carried beneficial effects. There were improvements in labour productivity as shown earlier, hence improvements in efficiency.

A more flexible pricing scheme, however at the time, may have increased contracting costs. For example, there could have been provision in the license for a price-cap system with automatic adjustments to prices over a base-price fixed ahead of time. However, the price-cap regulatory framework was not well developed at the time and as shown earlier, Jamaica's political institutions were such that administrative discretion appeared to be incompatible with attracting private investment, undercutting the viability of price cap regulation in the Jamaican institutional setting.

In the case of the divestiture it is clear that at the time of the public offering, GOJ was interested in achieving widespread stock ownership by domestic residents. Yet the sale of GOJ's remaining stock to C&W went against the expressed policy for widespread ownership and public sentiments. These tranches of divestiture were triggered by two important factors: first, as mentioned above, JAMINTEL's experience showed that C&W involvement by itself did not assure strong C&W investments, even when it had almost 50% of the shares. Second, during 1988/1991 period there were strong fiscal and foreign exchange

pressures that seemed to have forced the government to sell its shares to a willing and ready buyer. There was always the possibility that conflict with the government could develop, and the ownership structure of TOJ did not provide the company with the extra political capital to counter the administration's side.

On the other hand, a more widespread stock ownership could in principle, have served as a safeguard, and made possible a less rigid regulatory scheme than the one provided in the 1987 shareholders' agreement. It should be noted, however, that widespread *local* ownership is not assured without restrictions on ownership of shares, as domestic residents could easily end up selling their shares overseas, fully eliminating the advantages of widespread **ownership as a safeguard[22].**

In summary therefore, firstly, because of the need to restrain administrative discretion, it is not at all clear that a very flexible pricing scheme could have been designed so that it would have produced drastically better cost efficiencies. To a large extent, given the nature of Jamaican politics and political structure, the licence provisions of a minimum rate of return seems to be crucial for assuring performance, thus restricting the type of incentive mechanisms that may be able to be used. Furthermore, the discussion above suggests that the range of allowed returns did not seem to be much above C&W's alternative use of funds, and thus this range may not have been excessive.

Secondly, as long as the political will to cross-subsidise domestic communications remained, strong, competition in long distance and international communications would have been constrained. This, however, may eventually have translated into a large social cost as the segments that cross-subsidise domestic rates were among the most technologically dynamic segments of the sector. Furthermore, realignment of rates prior to the privatisation may have substantially damaged public support for the privatisation process.

Thirdly, while GOJ could have tried to sell its stake in TOJ to the public sector rather than to C&W, it is uncertain whether in the long run diffused domestic ownership would have remained, given the openness of Jamaica's capital markets. Thus, the 1987 regulatory change seems to have erred in the preservation of a tight monopoly over all telecommunications segments. Allowing competition in some segments of the market at the time would have required some realignment of rates with a possible short term political backlash. It could have however had long term benefits in the form of a more dynamic sector and lower prices in a quite elastic segment of the market. This, to a large extent, represents the missed opportunity in the whole regulatory change/privatisation process.

Early Attempts to Introduce Competition -1993 to 1999

By the 1990s it was possible to facilitate competition in the telecommunications sector under three arrangements:

- Facilities based entry which provided for mobile or fixed linked operators, such as cable television or electricity distribution companies,
- Resale entry, whereby third party entrant pays the incumbent for the right to sell the incumbent services,
- Mixed entry whereby the new entrant leased some facilities (transmission and switches) and provide switches in order to provide services. This latter approach is sometimes described as entry through unbundled net work services.

Facilities based competition creates conditions for effective competition, reduces the demand for regulatory intervention and pressures the incumbent to upgrade services. Resale, however, provides the easiest and quickest way to introduce effective competition. It provides for low cost entry, efficient use of scarce resources in existing infrastructure, as well as providing opportunities for small investors to service niche markets without having to put out the outlays for heavy capital investments in infrastructure. Efforts to introduce competition first came from the Fair Trading Commission (FTC

Early attempts to introduce competition in most instances were strongly resisted by TOJ. In 1993 FTC, a Patterson institutional initiative which had just come into being was able to extract an agreement from TOJ providing for liberalization of the customer equipment market. Up to then TOJ, insisted that it had an exclusive right to customer services equipment and only permitted attachments supplied from the company's sales outlets. Faced with pressure in 1994 from the FTC, TOJ also reached an agreement with the FTC, allowing Infochannel Ltd as an internet service provider (ISP) to interconnect with the TOJ's transmission system. TOJ had also failed to recognize the future market potential of internet service. The only other provider of internet services was the University of the West Indies. TOJ also came to face major problems with call-back, as the technology by then permitted customers to bypass the incumbent for international service. TOJ eventually responded by taking out court proceedings against Infochannel for the use of voice-over-the-internet protocol to bypass its international services. The company also lobbied the government to make call back an illegal activity. FTC and C&W also reached an agreement in 1999 on certain aspects of C&WJ''s advertising. C&W was offering free voice mail to customers and this was regarded by FTC as anti-competitive, as it would have had the effect of restricting entry to the messaging services market. The agreement reached between C&WJ and FTC required the incumbent to provide separates accounts for particular service as well as the applicable rate.

Second, the minister with responsibility for telecommunication issued five VSAT licenses to ISP operators in 1998 under the Radio and Telegraph Control Act. Some of the ISPs used their equipment with the aid of VOIP to offer call back services by bypassing C&WJ international gateway, connecting to C&WJ domestic telephone network. Again C&WJ contested the Minister's decision on the grounds that the decision breached the exclusivity conditions in the licence. Proceedings by C&W against the operators which were

offering VIOP services were unsuccessful regarding local access to the network; hence C&W abandoned its action at **the Supreme Court**[23]**.** The Attorney General argued at the Supreme Court that the Jamaican government acted unconstitutionally in granting the 1988 licence and that they were null and void. More importantly the 1893 Act made provisions only for services via paired wire services and could never have anticipated transmission via fibre optic, radio and satellite in respect to data and value added services.

A third force for liberalisation changes came first from government's policy regarding telecommunications in the National Industrial Policy of 1996. This policy endorsed information technology as a crucial aspect of a National Industrial Policy. External forces were also at work. Government with (reluctant consent from TOJ) in 1996 responded under the WTO General Agreements on Basic Services with a commitment to phased liberalisation of the telecommunications market by honouring existing commitments until 2013. The writer along with a representative from InfoDev, a special vehicle established to help developing counties prepare their commitments under the WTO telecommunications protocol prepared the Jamaican commitments. The WTO commitments set out how government should treat national and international telecommunications carriers. The principles out lined by Jamaica called for access to the incumbents network on terms and conditions which are non-discriminatory, arbitration of interconnection disputes, the establishment of an independent regulator and an appropriate structure for the allocation and management of the radio spectrum. The writer along with Cabinet Secretary Davis and Prime Minister Patterson were the architect of the initial 1996 policy to liberalise the telecommunications market.. These developments for the first time signalled to TOJ government's commitment to future policy for a liberalised telecommunications industry. In 1997 Jamaica also came together with its CACICOM partners in reaching agreement on altering its negotiating strategy with C&W subsidiaries in the region. The 1996 Telecommunications policy document was later updated and presented to Parliament in 1998.

More importantly opposition from US operators to C&W's monopoly services in Jamaica and the Caribbean intensified. The US carriers had been paying out some US$6 billion per year to overseas operators under the existing accounting settlement rate protocol. Jamaica at the time netted over US$100 million per annum as foreign exchange inflows from TOJ making the company the third largest foreign exchange earner at the time. The US Federal Communication Commission (FCC) eventually issued a Benchmark Order in 1997 requiring US operators to unilaterally reduce settlement rates to foreign providers. In the case of Jamaica TOJ was required to reduce the settlement rate from US$ 0.57 to US$ 0.19 per minute by January 2001. Earlier in 1995 the accounting settlement rate was as high as US$1.25. The 1997 FCC order threatened to undermine the financial basis of the post-privatisation regime which had involved the incumbent cross-subsidising and expanding the unprofitable domestic services from the international services. TOJ and C&W challenged the FCC Order in the US and eventually lost at the US Court of Appeal. As shown earlier, most of the investments in the public system were financed by the high internally generated earnings from international telecommunications and not from portfolio financing**.**

Lodge and Stirton[24] stated that the FCC order threatened to undermine the financial basis of the post-privatisation regime which had involved the incumbent cross-subsidising and expanding the unprofitable domestic services from the international services. TOJ and C&W challenged the FCC Order in the US and eventually lost at the US Court of Appeal.

By 1996, C&W UK, more so than its local subsidiary had come to realise that technology and international regulatory developments had come to diminish the opportunity to benefit politically from the domestic voice monopoly. In a meeting with C&W executives in London the writer was informed that C&W UK had come to realise that the international data transmission market offered more profitable opportunities than the traditional voice telephony business. With changes in the very top levels of management in both London and Jamaica and with decision-making on policy matters increasingly being centralized in London less resistance was experienced from the company locally towards governments efforts to develop a more competitive local telecommunications market. C&W UK at the same time had been lobbying for regulatory barriers to be reduced in the US where C&W had less than 1% of the US market; hence the small Jamaican and Caribbean markets became expendable.

The Liberalisation Period 1999 -2005

During the first 18 months following the enactment of the Telecommunications Act in 2000, the domestic market was to be liberalised. Since 1999, the Government of Jamaica has set about liberalising the telecoms industry to promote competition and efficient entry into the market. It adopted a phased approach to liberalising the telecommunications industry. The statutory provisions underpinning liberalisation are contained in the 2000 Telecommunications Act.

The start of the process of liberalisation in the Jamaican telecommunications sector was the signing of an agreement between the Government of Jamaica and Cable & Wireless (C&W) to allow competition into the sector and to end C&W's monopoly in September 1999. There were three main phases to the liberalisation of the telecommunications industry. Under phase one, the private operators were invited to bid for two mobile phone licenses, one to utilise GSM technology and the other to use CDMA technology. The licenses were auctioned and the minister eventually issued the two licenses. A third licence was later awarded. During the first phase, the minister was also empowered to issue cellular, reseller (data, internet and international voice), free trade zone service and carrier licenses. Two mobile operators, Digicel Ltd and MiPhone Ltd commenced operation in competition with C&WJ.

During phase two the minister's powers were extended to grant licenses to include domestic carrier and service provider licenses for voice facilities, resale of the incumbent switched domestic voice facilities, as well as voice-over-the-internet access and facilities for subscriber television operator internet licenses for licensed cable operators. Several of these licenses were issued.

In the final phase three years after the passage of the Act, all market segments were to be liberalised including the market for international facilities based operators. As a result of this development in 2004 the government decided to award licenses to two international cable operators to land new submarine cable network to Jamaica. Overall, as a result of liberalisation, the minister issued over 350 licenses. The Two mobile carrier licenses granted in December of 1999 and January 2000 for the provision of mobile voice telephony, data and information service initiated the entry of competition in the mobile market and indirectly competition between land line and cellular services

The major problem of facilitating competition however has cantered around interconnection, allowing callers to make and receive calls, regardless of the originating caller. Interconnection has presented major challenges to the existing regulatory framework and to OUR. The Telecommunications Act of 2000, requires the C&WJ to submit to the OUR all reference interconnection offers (RIO) setting out the terms and conditions for interconnection with other voice carriers. All carriers are required to provide interconnection on request under the Act. OUR has the responsibility to ensure that the offer is in keeping with the principles set out in the Act. Where the provider and the seeker fail to agree on the conditions and the transaction involve a dominant carrier the OUR is also required to arbitrate if requested by either of the parties.

The Telecommunications Act of 2000 sets out the principles of liberalisation and the provision of a universal service. A major feature of the Act is the requirement of the telecommunications industry to be regulated by the OUR. The Act requires the OUR to refer cases of “substantial competitive significance to the Fair Trading Commission. The Act also empowers the Minister to give directions to the OUR “of a general nature” if it is in the public interest and the OUR is required to comply with such directions. This provision has resulted in a major controversy leading to fierce litigation by TOJ. Subsequent to passing of the Act the ministry outlined its agenda for the industry in the Telecommunications Policy document which was intended to set the path for the provision of universal service and full availability of E-learning services to enable the Jamaican economy to benefit from ICT- led growth.

Post- 2001 Privatisation Performances

Liberalisation of the telecommunications market brought competition between mobile networks and between mobile and the incumbent fixed linked services. Significant growth in mobile subscribers took place after 2001. In most countries, mobile termination rates are regulated; Jamaica has however achieved international comparable rates without regulation. Although termination rates are at a similar level to international benchmarks, customers often own multiple SIM cards and generally only make calls on the same network. This is driven by intensive competition for market share, primarily through special discounts offered by the operators.

The most dramatic growth since 2000 has been in domestic business with the number of phones increasing from 143.9 million minutes to 1.26 billion minutes reflecting the dramatic growth in the cellular market. Although growth in the incoming and outgoing international business has been at a slower rate increasing from 433.4 million on 2000 to 695.4 million in 2005. Both the slower growth in international traffic and the reduced settlement rate forced the C&W to rebalance the charges, with higher rates for domestic traffic. As shown in Table 1 the number of phones (fixed and mobile) increased from 612,000 in 1999 to over three million in 2005 compared to an increase from 234,000 in1994 to 612,000 in 1999. The challenge over the medium term will be to build up investments in broad band as the cellular market matures.

Table 1

Teledensity and Labour Efficiency

Year	*Pop*	*Fixed Teledensity*		*Mobile Teledensity*		*Total Teledensity*		*Number of C&W Workers*	*Line per worker*
		Main lines (000)	*Lines per 100 %*	*Customer (000)*	*Line per 100*	*Main line& CELs (000)*	*Line per 100*		
1994	*2.4*	*208*	*8.7*	*26.1*	*1.1*	*234.1*	*9.8*		
1995	*2.4*	*251*	*10.5*	*40.3*	*1.7*	*291.3*	*12.1*	*4544*	*0.055*
1996	*2.4*	*306*	*12.7*	*55.4*	*2.3*	*361.4*	*15.1*	*4306*	*0.071*
1997	*2.5*	*368*	*14.7*	*71.3*	*2.9*	*439.3*	*17.6*	*3983*	*0.092*
1998	*2.5*	*416*	*16.6*	*91.7*	*3,7*	*507.7*	*20.3*	*3897*	*0.107*
1999	*2.5*	*494*	*19.8*	*117.9*	*4.7*	*611.9*	*24.0*	*3327*	*0148*
2000	*2.6*	*507*	*19.5*	*249.8*	*9.6*	*963.8*	*37.1*	*3204*	*0.158*
2001	*2.6*	*511*	*19.7*	*640.4*	*246*	*1151,4*	*44.3*	*2611*	*0.196*
2002	*2.6*	*435*	*16.7*	*1190.0*	*45.8*	*1625.0*	*62.5*	*2427*	*0.179*
2003	*27*	*451*	*16.7*	*1483.0*	*54.9*	*1934.0*	*71.6*	*2052*	*0.220*
2004	*2.7*	*423*	*15.7*	*1841.0*	*68.1*	*2264.0*	*83.9*	*1621*	*0.261*
2005	*2.7*	*390*	*14.4*	*2700.0*	*100.0*	*3090.0*	*114.4*	*1703*	*0.229*

Source: constructed from PIOJ and MCST and C&W Annual Reports

Investments in the sector has been running at between J$ 11billion to J$12.4 billion per annum. In 1995, landline investments at J$9.5 billion significantly outperformed cellular investments at J$1.25 billion. In

more recent years broadband investments have also seen significant growth reflecting the demand for high speed internet services, increasing from under J$250 million per annum in 1995 to J$1.85 billion in 2000. Notably, the introduction of competition has not slowed the rate of investments.

Although the number of telephones is now in excess of the total population available data reflects multiple ownership, and the actual access to telephone is more like 60 to 70 percent, as many homeowners in rural areas do not have cellular or access. There have been significant improvements in labour productivity C&W itself has reduced the number of workers from 4,544 in 1994 to 1703 in 2005, with the result that lines per worker increased from 0.055 in 1994 to 0.229 in 2005.

Lessons Learnt from Telecommunications Privatisation and Regulation

There is no doubt that the mobile sector has grown explosively due to new entrants to the market the structure however is still one of a duopoly requiring regulation and this is despite the fact that telecommunications regulation is more one of applied competition policy. **The Stern Report**[25] acknowledges the significant growth in mobile, together with the increased volume in international incoming calls as key drivers of the industry. Consumers have derived huge benefits from the prevalence of mobile service and in turn, the industry contributes 20 percent general consumption tax (above the 16.5 percent GCT) to the Ministry of Finance. The investment that is taking place in broadband will also deliver significant benefits to the wider economy.

While the process to resolve the interconnection issues has created significant uncertainty for the industry, the industry has found its own solutions by agreeing rates outside the regulatory framework. It could be argued that as the industry has found a solution, the need for regulation is brought into question. However, the prevalence of customers owning more than one mobile phone, and a reluctance to make calls to different networks, might suggest that there remain opportunities for regulation to improve the interconnection position for customers.

A key criticism of the OUR from industry throughout the liberalisation period, particularly in relation to the interconnection issue, is that it has been slow to react to new developments in the industry. The portfolio Ministry has played a sometimes forceful and interventionist role while the OUR has taken a very careful and considered approach, often much to the annoyance of the industry operators in a fast developing market. Liberalisation has brought increased choice to the Jamaican consumers and has produced a highly competitive mobile industry, evidenced by the high propensity to make on-net calls.

The Telecommunications Act did not entirely achieve the required regulatory framework envisaged for the liberalisation and as it did not prevent disputes between the regulator, service provider and the portfolio minister. Ongoing dispute between the ministry and the regulator has created considerable uncertainty in

rate regulation. However, this has proven how independent and transparent the regulator has been able to act with respect to telecommunications regulation.

Separating the reporting line of the telecoms regulator from the policy-setting ministry serves as a two-way check on the powers both the regulator and the ministry are able to exert over industry. The experience of the past 5 years has demonstrated that whilst the ministry may be a key actor in the industry, allowing liberalisation in the mobile and international segments, there is still the need for an independent and informed regulator to address any discrepancies in the market, especially on interconnection matters and to apply international best practices.

Developing countries like Jamaica find themselves in weak negotiating position when selling state assets to overseas firms which require large capital investment. These firms will seek to extract rent and unreasonable terms and conditions. The telecommunications case provides an example of the problem face by small state in dealing with the divestiture process when faced with large multi national companies.

Empirical literature (mainly from the 1980s) comparing public and private enterprises in industrial market economies conclude that there is no conclusive evidence to show that private enterprise is superior to public enterprise in running utility monopolies. Private firms tend to exhibit higher productivity and better performances than public enterprises however there is no guarantee that such productive efficiencies will be passed to consumers; allocative efficiency. Whether privatisation and regulation serve the public interest depends on the appropriate decisions taken concerning the method and sequence of privatisation, the industry structure provided at the time of privatisation and the oversight powers of the regulator

The absence of credible commitment in regulation carries far reaching implication for the operation of the regulatory process. The questions whether the Westminster–style government can realistically engender credible commitment without the constitutional entrenchment of property rights and respect for contract law is debatable. Although the licence was eventually changed the fact that the structure was underpinned by contract law precluded the government from embarking on opportunistic action and the final outcome was one of mutual agreement with respect to the licence changes **supporting the thesis that institutional endowment is central to the design of the regulatory frameworks. T**he need for a well-defined regulatory framework is clearly demonstrated in the Jamaican experience, as a precondition to privatisation of the infrastructure and utility enterprises. Regulatory methods, which are appropriate in one environment, may differ in another. Developing regulatory regime requires considerable technical competence and practical experience. Transplanting structures from the UK, the US or other developed country in the name of best international practices is clearly not the ideal solution.

Privatisation of the larger infrastructure enterprises (such as telecommunications) has proven to be far more difficult to execute. This is a direct result of the complex and often competing objectives, the need to satisfy competing and conflicting special interest groups and the sheer difficulty of privatising firms, which traditionally were characterised as natural monopolies. The trade-offs among the various objectives and competing interest groups can be politically intractable. Invariably, the consumers do not have strong lobby groups in developing countries to advocate their interest in the reform process and this leads to their interest often being given lower priorities. The desire for the new managers to maintain powers of influence and the opportunity for clientism can be powerful factors working against the interest of the consumer.

The privatisation option will remain attractive once short-term political considerations can be overcome. The large amount of capital investments required to provide water services, electricity, airports and transport cannot not be financed with the existing state of the Jamaica public budget. Jamaica remains amongst the group of most indebted nations. More so in telecommunications than in electricity, technology has now eliminated all natural monopoly characteristics in the industry. Digital wireless network, fibre optics and communications satellite have undermined the natural monopoly characteristics in the telecommunications industry. This gave the government the opportunity to re-examine its options and later to opt for liberalisation of domestic land line, mobile and international telecommunications markets.

The most important lesson learnt is that it is not simple ownership that matters but the structure of the regulatory regime or alternatively the level of competition allowed**.** Competition, in the long run provides for stronger incentives for productive and allocative efficiency. Jamaica has traditionally favoured monopoly for the utilities. The conception is that natural monopolies should be protected from entry and that legal barriers to entry are needed to take advantage of economies of scale, scope and density (i.e. sub-additivity of cost function)[26] is still strong. Industries which are operated as state-owned enterprises invariably offer little or no opportunity for competition, hence no incentive for efficiency. Evidence also exists to show that the higher the level of political control the greater the level of inefficiency of public enterprises and the higher the cost of private capital. Privatisation may not increase efficiency and could reduce it if new entry barriers are imposed. Not only is there a need for ex-ante regulation, but also there is need for coherence between anti-trust and competition legislation and sector industry laws. The issue really is what form of competition is good for telecommunications and other utilities like electricity.

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[14] Levy, Brian and Pablo Spiller (2006) Regulations Institutions and Commitment : Comparative Studies of Telecommunications, Cambridge Mass.: Cambridge University Press

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[16] Shareholders' agreements between the private investors and the government have also been used as regulatory safeguards. Cable & Wireless and the government of Jamaica (GOJ) used shareholders' agreements to regulate their relation in JAMINTEL (in 1971), and again concerning the regulation of Telecommunications of Jamaica (TOJ) in 1987. The second shareholders' agreement was eventually written into the licenses given to TOJ to operate both the domestic and international

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[17] Government's revenue from indirect taxes is estimated. Government revenue from income tax is provided by the companies' annual reports. Government's income from its share of the dividends distributed by JAMINTEL appears as part of the changes in the profitability of the companies.

[18] This effect is simply the Slutzky effect, and can be computed as $-\Delta P * Q$, where ΔP reflect the increase in real price from year to year and Q reflects the previous year's quantity.

[19] Because Jamaicans' access to the telephone network was constrained by the availability of lines, increases in lines represented an upward shift in the demand curve for the network. Consequently, holding constant the quantity of calls, an increase in the number of lines increased total consumer surplus by the area under the two curves. This area can be approximated (assuming a linear demand) by change in the number of lines times the elasticity of the inverse demand for the service times the average revenue per line. We estimated log linear inverse demands for both domestic and international services for the period 1972/1991. The estimated equations, correcting for serial correlation, are as follows:

	Log Int'l Price	Log Domestic Price
Constant	-10.42	8.75
	(4.96)	(4.30)
Log Real Int'l	-.64	--
Output	(.24)	-
Log real domestic	-	-2.01
Output	-	(.29)
Log lines	1.75	1.43
	(.58)	(.52)
Trend (Post 1980)	-.007	-.008
	(.02)	(-.01)

Standard errors in parentheses

The estimated equations are used to compute the gains from changes in the number of lines from domestic and international service. The demand for international services is estimated to be more elastic than the demand for domestic services. There are two reasons for this: first, the growth in demand for international communications by households increased since 1979. Second and more importantly, is the way international and domestic calls are charged. While international calls are charged by the minute, the pricing system for local calls differs across areas of Jamaica, with most households paying monthly flat service fees, plus intercity toll charges. As a consequence, unless substantial toll calls are made, the measured elasticity of the domestic demand would be lower than that for international services.

[20] This is not a theoretical question. See the discussion in footnote 65.

[21] Taylor, Lenworth (2000*),* '*Privatisation* in Jamaica and the Case of Telecommunication of Jamaica Limited'*, Caribbean Journal of Public Management*, Vol. 2, No. 1. p.28

[22] For example, in early 1967 Jamaicans owned 9.1% of JTC. Shortly after CTC's acquisition of T> shares, the New York Stock Exchange quotation of JTC shares increased, and Jamaicans sold JTC shares to the point that by the end of 1969 5% of the shares were held by local residents.

[23] Infochannel Ltd v. C&W Jamaica Ltd, Suit E014 1999**)**

[24] Lodge, M and L Stirton (November2002) *Globalisation and Regulatory Autonomy in Small Developing States: The Case of Jamaican Telecommunications Reform*, New Political Economy, Vol.7, pp. 415-433.

[25] Stern , Peter (2004) Review of the Legal, Institutional and Regulatory Framework for the Telecommunications Sector and Recommendations for Reform, Kingston: MCST

[26] Parades and Thomas, op. cit., p.4.