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An Evaluation of the Impact of Reforms in Services on Downstream Manufacturing: Evidence and Policy Implications for Uganda's Non- Financial Services

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indigenous growth

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ABSTRACT

Significant reforms of the services sector have been conducted in Uganda since 1987, motivated, in part, by the common notion that efficiency in the provision of services can deliver productivity growth in all sectors of the economy, which in turn stimulates overall economic growth and development. Given that the demand for services is often highly income elastic, as incomes grow, the demand for services also tends to expand accordingly. In another respect, services are widely used as intermediate inputs in various production activities, while the proportion of labor utilization in services production has tended to grow larger than that of capital. This paper applies a cross-sectional panel estimation approach to discern the effects of services liberalization on downstream manufacturing productivity in Uganda. The results show that the average coefficient (average returns to scale of 0.6251 is less than constant. while the respective coefficients of capital and labour are 0.1420 and 0.4831, respectively. The relative coefficient on the composite services reform index is positive, suggesting that services liberalization have had a marked positive impact on manufacturing and its productivity. When individual sector reform indices are accounted for in the regression, the results also confirm that when prudent reform measures were undertaken in different services sub-sectors, they imparted strong and significant improvements in the productivity of firms across the board.

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1. INTRODUCTION

Originally, services were viewed as less transferable and tradable than goods, hence considered less vital in international trade. But in recent times, the services sector has evolved to become one of the most important sectors in almost all developed, middle income and developing countries alike, because of its influential effects on the performance of manufacturing and other sectors of the economy.

According to the WTO statistical database, exports and imports of services by the rest of the world increased by around 9.8 and 9.1 percent per annum on average during 1995-2008, respectively. Uganda's trade in services on the other hand grew by 14.3 percent during 1995-2008, compared to 8.2 percent and 11.7 percent for Kenya and Tanzania, respectively. In terms of the ratio of trade in services to total world trade in services, Uganda together with Kenya and Tanzania however, performed dismally compared to the USA. Table 1 shows the ratios of trade in commercial services of selected countries.

Table 1: Ratio of trade in commercial services to world trade in services (%)

	Uganda		Kenya		Tanzania		South Africa		United States	
	Exports	Import	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
1995-98	0.01	0.05	0.06	0.06	0.05	0.07	0.39	0.45	17.44	11.66
1999-02	0.01	0.03	0.05	0.05	0.05	0.04	0.33	0.38	18.12	13.79
2003	0.01	0.03	0.05	0.03	0.05	0.04	0.44	0.44	15.51	12.48
2004	0.02	0.03	0.06	0.04	0.05	0.04	0.43	0.47	14.87	12.21
2005	0.02	0.03	0.06	0.04	0.05	0.05	0.44	0.50	14.59	11.90
2006	0.02	0.04	0.07	0.05	0.05	0.05	0.42	0.53	14.54	11.94
2007	0.01	0.04	0.06	0.04	0.05	0.05	0.40	0.52	14.10	10.95
2008	0.01	0.04	0.05	0.04	13.99	10.50
Average	0.01	0.04	0.06	0.04	0.05	0.05	0.40	0.46	15.52	11.96

Note: ... Denote missing data

Source: WTO statistical database

In Uganda, the exports of services as a percentage of total exports of goods and services rose from a mere 10.7 percent in 1991 to 34.3 percent in 2003 (World Development Indicators, 2005). Similarly, the services sector's value added comprising of wholesale and retail services, hotels and restaurants, transport and communication, financial and community services, continued to perform dominantly, accounting for 45.4 percent of total GDP in 2005/06. Services value added in fact grew by 9.5 percent in 2005/06 compared to 8.8 percent observed in 1990/91 (Bank of Uganda, 2006), while the agricultural sector's value added grew by only 0.1 percent in 2005/06 compared to 1.5 percent in 1990/91.

At bilateral, regional and multilateral levels, ongoing initiatives to increase market access for the Least Developed Countries' (LDC) exports have bolstered the hope that market access opportunity outcomes could contribute to increased trade at regional levels and therefore poverty reduction and economic growth. For instance, emergence of regional trade partnerships such as within the East African Community (EAC), COMESA and others including the European Commission's Everything But Arms (EBA) and the US African Growth Opportunity Act (AGOA)- both mainly for goods only- have altogether granted developing countries preferential access to developing and developed countries' markets. Moreover, the emerging Economic Partnership Agreements (EPA's) between the EU and regional partners are expected to be the first extra-regional trade agreements that would include chapters specifically on trade in goods.

Since 1987, Uganda has rapidly implemented trade reforms. For instance, “by 2001, Uganda’s tariffs were well below the levels found in most other Sub-Saharan African (SSA) countries”. On the export side, the absence of export monopolies and export taxes coupled with efficient VAT reimbursement schemes for importers helped to significantly remove remaining disincentives to the importation of goods and services. By 2001, further reforms were initiated on the trade regime by substantially improving the administration of customs and duty drawback schemes, as the scope for granting tariff exemptions through administrative directions were eliminated” (Hinkle, 2005). With these reforms, nearly all the production sectors in Uganda- services, agriculture and industry - are known to have performed remarkably well thereafter.

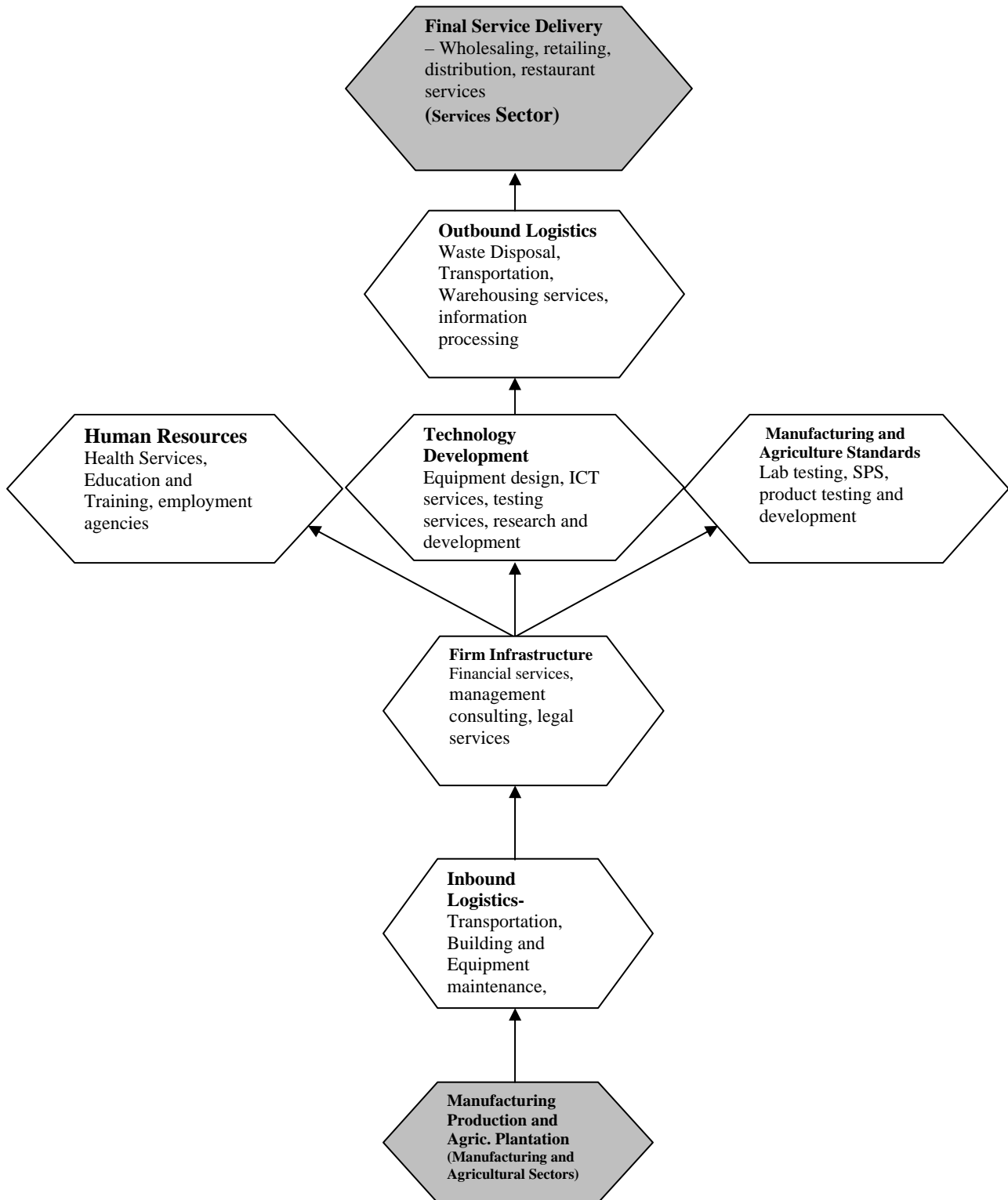
The motivation behind the implementation of wide ranging services reforms was based on the common belief that providing services efficiently tends to spur improvements in the productivity of down stream manufacturing, industry, agriculture and services sectors, while also inherently stimulating overall economic growth at the same time. This is because: First, demand for services is highly income elastic and therefore as people get richer, their demand for services tends to expand, in some cases more rapidly than for manufactures and other forms of merchandise. Second, services provide vital outputs used as intermediate inputs in manufacturing, agriculture and even services industry output. As a matter of fact, work already done on Uganda clearly shows how intrinsically intertwined the three sectors are linked in terms of the production and value chain in Uganda (see illustration below as adapted from Cummins, 2009). Third, the proportion of labor utilization in services activities is often larger than capital, since service providers in most cases have to render their services personally and, in this sense enable the services sector to account for a large chunk of employment. Despite the foregoing belief however, cross-country and country level surveys of the impacts or indeed specific and quantifiable benefits of these reforms are still scanty.

Using the approach of Arnold et al. (2006a) and Fernandez (2007), this paper applies a panel estimation approach to analyze firm level data for the period 2000–2006 so as to discern the effects of services reforms on downstream manufacturing in Uganda. The dependent variables are real productivity in manufacturing, defined and derived from an augmented *Cobb-Douglas* type production function. The independent variable, *ceteris paribus*, is a lagged value of a measure of services reforms represented by an index of progress in services reforms. The use of lagged

variables takes account of the time required for effects of the liberalization in services sub-sectors to materialize.

The remainder of the paper is organized as follows. Section 2 surveys the literature, Section 3 discusses progress in services reforms, and performance of services and manufacturing in Uganda and Section 4 reflects on some of the market access opportunities that Uganda continues to enjoy for its services, manufacturing and agricultural products under specific regional and preferential market options. Section 5 then tackles the methodology and data issues, as well as the consideration of empirical results. And finally, Section 6 presents some policy implications.

**Illustration of value chain linkages between manufacturing/agriculture and services
in Uganda**



2. LITERATURE SURVEY

Various approaches have been used to evaluate the performance of the services sector in existing literature, focused mainly on the structure, productivity and impact of fundamental reforms in the services sector and their impact on other production sectors of the economy. The services sector comprises of a wide range of activities including wholesale, retail and other personal and community services. Services have been categorized as backbone services - activities that change or add value directly to other economic units or to goods belonging to other economic units, for instance advertising, legal services, financial intermediation, insurance, transportation and telecommunication, etc. and services for final consumption for instance hotels and restaurants, hairdresser, etc. (OECD, 20053; Fernandes, 20074). In this study, we examine both sets of services - backbone services and services for final consumption together.

The efficiency of services sub-sectors is important because these sectors contribute to the development of Uganda through provision of important inputs for downstream sectors such as agriculture, manufacturing and industry. Liberalization-induced improvements of the services sector are crucial for of any economy. Eschenback and Hoekman (2006) indicate that progress in services policy reforms helps to explain differences in economic growth across Eastern European and Central Asian (ECA) countries since 1990. Arnold et al. (2006a) find a significant positive effect of services liberalization and FDI in the services sector's contribution to manufacturing firms' total factor productivity (TFP) in the Czech Republic. Arnold et al. (2006b) also find a significant positive effect of regional availability of communications, electricity, and financial services on TFP for a large cross-section of manufacturing firms across several African countries.

Similarly, improvements in service productivity can affect total productivity growth directly and indirectly. Anos-Casero (2007) finds that recent sectoral shifts toward services have led to an increase in aggregate productivity in Transition Economies⁵. In addition, "an efficient service sector has indirect consequences for economic growth through the efficiency of other sectors in the economy" (Eschenbach and Hoekman 2006; Arnold, Javorcik, and Mattoo 2007). High quality market services such as transport and telecommunications affect production costs and consequently, competitiveness and degree

⁵ At the macro-level, the relationship between financial development and economic growth was postulated early by Schumpeter (1911). Empirical evidence has been provided by King and Levine (1993) and Levine and Zervos (1998) using cross-country data and by Rajan and Zingales (1998) using industry-level data across countries. In particular, Beck, Levine, and Loayza (2000) find that the positive effect of financial intermediation on GDP growth occurs through the impact of financial intermediation on TFP growth rather than through its impact on physical capital accumulation and private savings rates.

of integration into global markets of firms in all sectors. Moreover, the availability of high quality services can also influence the attractiveness of a given location for foreign direct investment (FDI). Service reforms do not only increase productivity of firms but also facilitate entry of new firms, which in turn can promote innovations and encourage the exit of less productive firms.

Several factors can explain differences in performance across service sub-sectors. These factors may include capital intensity, market size, technological innovations such as the use of information, communication and technology (ICT), skilled labor, and progress in service reforms. Anos-Casero (2007) ICT shows that service industries exerted substantial labor productivity than non-ICT sectors in eight countries of the European Union (EU-8) during 2000–2004. He hypothesizes that the findings suggest evidence of a progressive penetration and efficient use of ICT in the service industries of the EU-8 during this period.

Progress in the services sector can also be explained by the extent and quality of policy reforms of services itself. Reforms of services often facilitate free entry and exit of new firms to the industry, while helping to eliminate repressive regulation and thereby induce improvements in the establishment of an appropriate legal and institutional framework, among others. The OECD has postulated that “high levels of product market regulation stifle competition, growth, and innovation in the service sector (OECD 2005)”. In fact, Anos-Casero (2007) finds empirical evidence in support of services liberalization by concluding that there is a strong association between service liberalization and productivity performance in service sectors. These findings together argue that “the liberalization of services may influence the average performance of service industries through its impact on firm productivity and on reallocation. Service liberalization may indeed aid to increase the average productivity among incumbent firms and facilitate the entry of new firms, which are likely to be more innovative and successful in meeting consumer demand and hasten the exit of less-productive firms”.

The efficiency of service industries is crucial partly due to the incremental contribution they can make to the growth and development of the economy because service sectors provide critical inputs in downstream manufacturing and agriculture production and processing activities. Thus, liberalization-related improvements in the service sector should be crucial in promoting productivity growth in manufacturing and agriculture. Electricity, road transport, and financial services, ICT, insurance and telecommunication are some of the service industries that provide inputs in manufacturing and agriculture. Empirical analysis conducted for studies along philosophy show that the effect of service liberalization on labor productivity in downstream manufacturing is strong and positive (Alam et al. 2007). This finding implies that manufacturing industries that rely more

heavily on inputs from more liberalized services sectors exhibit higher productivity than do other manufacturing industries. This is consistent with the findings of Arnold, Javorcik, and Mattoo (2007) on the Czech Republic. Overall, prospects for long-term productivity growth in manufacturing and other sectors are likely to depend on a large extent to efficient and more dynamic services.

The efficiency of service industries is also particularly important for agricultural productivity. Better performance in services as a result of liberalization may be crucial for productivity gains in agriculture. Although the use of service inputs in agriculture varies across service industries, electricity, transport, and financial services tend to be some of the key services inputs to agriculture. Empirical analysis shows that service liberalization exerts a strong positive effect on farm-productivity growth. The World Bank (2008) finds that the effect of liberalizing backbone services such as transport, telecommunications, electricity, water, and financial intermediation on labor productivity in agriculture is positive and significant, implying that agricultural sub-sectors that depend more on inputs of more liberalized services exhibit higher productivity than do other sub-sectors. A large literature also emphasizes the positive influence of the development of a country's financial sector on industrial and macroeconomic performance. Empirical analyses conducted for these studies attest to the link between financial deepening and productivity growth. Firms operating in industries with higher dependence on external financing exhibit higher productivity growth in countries where financial markets are more developed.

A consensus exists to the effect that in the estimation of the effect of reforms, there are three types of variables which are important: an initial condition or a country's starting point is likely to strongly effect subsequent developments at least in the short-run. This belief prompted economist to construct a series of potentially relevant *initial conditions*; second, most emerging countries initially experience hyper inflation and higher fiscal deficits such that a credible macroeconomic stabilization programme becomes essential for economic growth; third, it has been recognized that a range of reforms would be needed for sustainable growth, from early reforms such as price and trade liberalization and small-scale privatization to intensive institutional reforms like company restructuring, competition policy and financial sector development.

Indeed, earlier empirical work found that starting points (initial conditions) were important for economic performance, particularly in the short-run (Fischer and Sahay, (2000); de Melo *et al.*, (2001)). A positive correlation between a good starting point and overall growth in transition is evidenced by EBRD's study results of 2004). However, there is also general agreement that this kind of influence declines over time. Several studies show that the effect diminishes quite rapidly and countries with weak initial conditions can

only catch up after a delayed recovery (See Berg et al. (1999) and 'de Melo et al. (2001). However, the fact that a link still exists between the starting point and growth suggests that there may be important indirect effects from initial conditions, possibly through their impact on reforms.

In the early literature, economists agreed that sound macroeconomic policies are good for growth. The main macroeconomic variables captured in the literature are the annual inflation rate and the size of the fiscal balance relative to GDP. Most of the studies found that lower inflation rates and smaller budget deficits are associated with economic recovery and higher growth rates (Loungani and Sheets 1997). Other studies however, found a threshold inflation level in the region of 5-11 percent for developing countries below which any causal link from low inflation to growth appears to be small⁶.

Some earlier studies have argued that reforms are beneficial for growth. A common finding was that an increase in a reform indicator may initially deliver a negative effect on growth, but after a year has elapsed, a positive influence may emerge to outweigh the initial decline (see, for example, de Melo *et al.*, 2001). That said, there is no obvious unique way to measure reform. Some literature distinguish between initial-phase reforms such as price and trade liberalization and small-scale privatization, and second-phase reforms which address deeper institutional reforms such as corporate governance, competition policy and reform of financial institutions. Other papers have broadened the debate to focus on quality of institutions and factors affecting the business environment (see, for example, Havrylyshyn and van Rooden, 2003).

Other authors recognize the feedback effect of growth to reforms which they accounted for in their estimation procedure on the effect of reforms. These studies were mainly attributed to Heybey and Murrell (1999) and Wolf (1999) who used the feedback of growth to structural reforms. Berg *et al.* (1999) and Ghosh (1997) also recognized the potential endogeneity of stabilization and adopted an instrumental variables approach to control for endogeneity. De Melo *et al.* (2001) estimate the impact of initial conditions on growth in two stages; allowing for an indirect impact on reforms (see also Krueger and Ciolko, 1998).

In sum, a consensus seems to have emerged as follows: First, macroeconomic stabilization is essential for recovery and growth; second, while initial conditions do matter, their influence on growth often declines steadily over time; and third, the impact of structural reforms is usually strong and robust. However, given the benefit of new data, recent

⁶ Christoffersen and Doyle (2000) find evidence of an inflation-output threshold of 13 per cent in a sample of 22 transition countries between 1990 and 1997. Inflation above that level reduces growth, while it does not have a significant effect when it is below the threshold. Ghosh and Phillips (1998) find a much lower inflation threshold, which they estimate in the low single digits.

econometric research on the link between reforms and productivity growth developing countries and economies in transition, shows that a more careful interpretation of the findings may be required. Nevertheless, a broad agreement still remains on the notion that stabilization policies are important and that initial conditions matter in the early years, with a declining influence in later years.

But, the influence of reforms on growth has become more, rather than less, controversial. Increasing attention has been paid to the endogeneity of reforms, the multicollinearity among different measures of reforms, and the sensitivity of results to the exclusion of the early years of transition. For instance, Falcetti *et al.* (2002) focus on initial reforms to address these three issues and come to the following conclusions. First, there appears to be a significant feedback effect of growth on reforms. When this effect is controlled for, the coefficients on the reform variables change significantly and not necessarily in a consistent way. Therefore, simultaneous equation estimation may be a more practically useful approach to identifying the sources of interactions between reforms and growth. Second, the results tend to be quite sensitive to small changes in the panel data size, and specifically to the choice of the starting point of the data series. Third, and most important, there seems to be no clear evidence that the net effect of reforms on growth is necessarily positive. That is, initial-phase reforms often lower the growth rate contemporaneously but raise it one year after, which is consistent with de Melo *et al.*, 2001, discussed above; see also Merlevede, 2003). Falcetti *et al.* (2002) therefore, conclude that the positive effect of initial reforms is less robust than the earlier literature had suggested.

The sensitivity of results to the choice of time period is discussed in Fidrmuc (2003) and Lysenko (2002). Fidrmuc employs an innovative approach by using five-year moving averages and estimating separate cross-section regressions for each period. The most interesting result is that the liberalization index (an average of EBRD indicators), which is instrumented in the regressions, is positive and significant in the early period (1990-94, 1991- 95, etc.), but not in the last period (1996-2000). Lysenko adopts the Falcetti *et al.* (2002) specification but extends the econometric analysis in two ways. First, the panel is divided into two sub-periods, one for the first four years of transition, and the other for the second five years. Second, a dynamic specification with lagged growth on the right hand side of the equation is estimated. Interestingly, the form of the model used makes little difference, but the results change significantly between the first and second period. This may imply that initial phase reforms do influence growth significantly in the early years of the transition, but not necessarily in the later years.

3. REFORMS IN THE SERVICES SECTOR

3.1. Broad reforms

Although in the past, trade in services was not given much attention in trade policy formulation in Uganda, the sector is now recognized as one of the potential sources and drivers of economic growth. Numerous sectoral policies have already been undertaken both at the national level by the government and at regional and multilateral levels to enhance the performance of the services sector. Uganda has undertaken broad reforms such as the privatization of key services, the concessioning of utilities, and deregulation. Most of these broad reforms, as distinct from specific domestic deregulations, were autonomous in nature. However, they left behind weak regulatory bodies and institutions.

At the national level in particular, several reforms in legal, financial, construction, and business and professional services reforms have been undertaken. Profound among them are reforms to the financial sector, particularly depository financial institutions. Significant reforms have also been implemented within the telephone, postal, transportation, hotel and restaurants services as well. These reform measures have already started to bear fruit. Better quality products and innovations have emerged owing to increased competition that has resulted from free entry of both domestic and foreign firms and exit of inefficient ones, partly fuelled by divestiture of government interests in those firms. However, one remaining constraints to the efficient provision of services in Uganda relates to the issue of quality of services. Ugandan services providers have tended to compete, at least at the regional level, on price and not necessarily quality of services. Intra-regional services trade in the East Africa region is currently dominated by Kenya and Uganda is only a price competitor in that regard. This of course has implications for Uganda's capacity to export beyond the region and for domestic services suppliers to be able to offer high quality and high productivity services to the wider economy.

At present, as the impact of the broad economic reform measures are being consolidated, the government has strategically shifted efforts towards improvements of infrastructural services such as roads, railways, shipping, and hydroelectricity generation. Reforms of the financial sector including banking, insurance, micro-finance, and other services such as information, communication and technology, education and health are ongoing. In this regard, requisite interventions have been made through funding, modernization of standing laws, strengthening of relevant institutions and implementation programs.

At the same time, political and macroeconomic stability provided an enabling environment, which in turn made Uganda a fairly reasonable destination for foreign direct investments in services, manufacturing and agriculture although according to the World Bank's Doing Business Indicators of 2008, Uganda fell about eight places and was identified as a difficult

destination to do business. Nevertheless, along with key macroeconomic reforms undertaken, there was also increased liberalization of trade and marketing regimes. This reform was characterized by liberalized domestic production practices, decontrolling prices and the establishment of institutions to promote export diversification and growth. The reforms were, in part, expected to minimize costs and risks to producers and consumers of goods and services.

At the backdrop of the potential that services can contribute to poverty reduction, employment generation, economic growth and export diversification, the government has undertaken numerous reforms of trade in services. The government reformed the commercial law to bring on board all trade related laws and regulations in line with WTO requirements. Efforts have also been made to improve the government's trade related capacity by mainstreaming trade issues in the overall National Planning Strategy. With the support of donor agencies, the reforms have focused on areas that provide new frontiers of opportunities, of which services trade is one.

In addition, the country made specific commitments under the GATS in communication, and tourism (travel) related services and later expanded its commitments on basic telecommunications under the extended negotiations of the Uruguay Round. It has also submitted several requests on services during the ongoing Doha Round of trade negotiations, including assessing the participation of developing countries in international trade in services, increasing participation of developing countries in trade in services, and special and differential treatment for least-developed countries. Uganda's main focus in the multilateral trading agenda has been on the need for the endorsing a waiver for least developing countries' (LDCs) proposal that these countries are under no obligations to undertake new services commitments.

3.2.1 Professional and business services

The professional accounting services sector is fully liberalized. Cross border accounting practice is acceptable, which has prompted new entry of foreign practitioners into the domestic market. In this regard The Accountants Act, Cap 266, S.49 contains a Schedule of Recognized Institutes, which lists the recognized institutes, including foreign ones whose members meet the Institute of Certified Public Accountants of Uganda (ICPAU) membership eligibility requirements. Currently, there are 144 licensed audit firms in Uganda of which 6 are foreign firms.

The Accountants Act, Cap 266, mandates the ICPAU with the authority to regulate accounting services in the country. At its inception, the ICPAU was set up to operate under a liberalized dispensation. And unlike its older partners in the region, it has not had to deal

with extreme liberalization adjustment challenges. Despite its predisposition to foreign practice, the Accountants Act however, is not fully compliant with the EAC Common Market full liberalization requirements. The draft EAC Common Market Protocol will make business services, which include accounting and book keeping, one of the seven sectors to have full freedom of movement of services upon the implementation of the EAC Common Market in January 2010.

Notably, Uganda has no limitations on market access to foreign entrants in providing accounting services, but there are still some remaining challenges. One, the accounting regulatory body in the country has no full control over all accountants in the market. It however can only monitor those accounting firms that are registered with it. The law governing accounting practices, as written currently written and applied, does not give the body substantial oversight powers, but it is hoped that this will change shortly. Two, and in the context of the East African Community Common (EAC) Market, accountants can come freely to work in Uganda, but there is currently no basis for the reciprocity for in the neighbouring countries. This implies that under the spirit of EAC Common Market, there are still challenges with the mutual recognition of qualifications among the relevant professional fraternities of the EAC countries, which is yet to be discussed.

3.2.2 Legal services

In general, Uganda's legal services are liberalized and cross border practice to eligible foreign practitioners subject to a residence requirement is allowed. The Advocates Act, Cap 266, S. 8: 5 (a) ii and (b) permits Advocates who hold foreign Law qualifications to be enrolled as advocates in Uganda provided they meet the requirements set by the Law Council. In addition, the Advocates Act, Cap 266, in S.13, allows the Chief Justice of Uganda to grant Special Practicing Certificates (SPCs) to eligible foreign law practitioners provided they collaborate with an enrolled certified Ugandan advocate. This liberalization does not however apply to domestic law since there are still national treatment and market access limitations on the practice of domestic law.

Despite its openness, Uganda's legal services have been found to be inconsistent with the EAC Common Market full liberalization requirements. The EAC report on the state of trade in services liberalization note that "while non-Ugandans were not excluded from practicing law in Uganda, the recognized legal qualifications as stated in *The Fifth Schedule of the Advocates (Enrollment & Certification) Regulations* were short of full compliance, and obviously discriminatory". The Schedule completely excludes Burundi and Rwanda's Law Degrees from being recognized in Uganda. In addition, the Schedule was noted for being oblivious to the other universities with accredited law programmes in both Kenya and Tanzania. By explicitly recognizing law degrees from the University of Zambia, the Schedule

has the effect of giving better treatment to third parties than to Partner States of the EAC. As part of their liberalization commitments in the Common Market Protocol, the EAC Partner States will need to agree on whether they will adopt a common legal system before free movement of legal services across the region.

The Advocates (Amendment) Act, 2002 was amended following a recommendation for the need of the Law Council to regulate legal education and provide for continuing legal education for practicing advocates. The legal council committee keeps lawyers abreast with contemporary legal issues so as to improve the quality of legal services they render to their clients. In addition, in the efforts to improve access to justice, the Law Council made explicit provisions on “Pro bono” by making it mandatory for every advocate in Uganda to give legal aid to at least four indigent persons in a year. Further, The Advocates (Council Fees) Regulations, 2004 specifies the fees that should be paid for the services offered by the Law Council. The fees are collected by the URA on Council’s behalf as non tax revenue for the Government.

3.2.3 Construction and engineering services

The construction and engineering services have been liberalized allowing a substantial foreign participation in all activities under construction and engineering. The Draft National Construction Industry Policy notes that “construction industry heavily relies on the services of foreign firms, even for repair and maintenance work that could otherwise be handled by local firms” (MoW&T, 2008). This draft policy has been on the table now for many years and needs to be updated urgently and implemented. All laws in the construction and engineering sector do not restrict foreign participation in the sector. For instance, the Engineers and Architects Registration Acts facilitate foreigners to register and practice as engineers and architects in Uganda respectively. The construction and engineering sub-sector comprises planning, interior design and architecture, civil works and construction, mechanical, electrical, and tele-engineering services. In general, this is one of the key sectors in need of regulation and the related umbrella bodies have already been agitating for the adoption of the draft policy. In this case, there is currently a clear conflict between the interests of liberalization and the need for effective regulation of construction and engineering services in Uganda.

3.2.4 Banking services

At the backdrop of bad institutions in the late 1980s, the financial sector necessitated reforms to enhance its efficiency and to improve resource mobilization and allocation. The foundation of reforms was the 1993 Financial Institutions Act which, among others mandated the Bank of Uganda (BOU) to regulate and supervise the banking system. The

reform measures invigorated the public's confidence in the banking system, which in turn led to improvements in financial intermediation.

Subsequently, the banking sector expanded considerably, buoyed by the privatization of Uganda Commercial Bank (UCB), the closure of distressed banks, and a strengthened supervision. The cleanup of some weak banks and improvements in banking supervision, especially the introduction of risk-based supervision under the new Financial Institutions Act, 2004, helped to make the banking system well capitalized, profitable, and resilient.

In order to reduce costs and improve capitalization, under the provisions of the new regulation, a process of mergers and acquisitions of banks was instituted, which reduced the number of weak and under-capitalized banks, increasing potential gains from economies of scale. Following reforms, the industry has been strengthened in many aspects and is now vibrant albeit underdeveloped compared to other developing countries. Financial deepening has shown a positive trend and in part, this has been achieved through effective supervision and enforcement of prudential regulations in the banking system, increased frequency of on-site inspections and surveillance. In addition, improvements in supervision methodology and the prudent management of monetary and exchange rate policy by the Bank of Uganda have contributed to strengthening the financial sector.

3.2.5 Insurance services

The country has fully liberalized the insurance market. This has enabled free entry of both domestic and foreign firms and exit of inefficient firms. The government has also divested its major stake in insurance business, allowing the insurance sector to be fully run by the private sector. Like business services, the draft EAC Common Market Protocol grants similar treatment to the financial services – insurance inclusive – making it one of the seven sectors which will benefit from the freedom of movement of persons across the EAC borders upon full implementation of the EAC Common Market.

The Insurance Act (Cap 213) Laws of Uganda, 2000 established the Uganda Insurance Commission as the regulator of the insurance market. Reporting to the Ministry of Finance, Planning and Economic Development, the Uganda Insurance Commission was set up to ensure effective administration, regulation and control of Uganda's Insurance industry. In addition, the Act requires the Uganda Insurance Commission to put in place prudential and industry conduct measures to ensure a competitive Insurance Market for Uganda.

The Uganda Insurance Commission has since implemented specific measures in a bid to fully liberalize the insurance sub-sector. The Commission has removed all measures that were discriminatory against foreign insurance firms. All insurance companies (foreign or

local) must meet the requirements for incorporation, registration and licensing under the Insurance and Company Acts, including Capital requirement. The Uganda Insurance Commission requires all insurance agents in the country to pass and possess the Certificate of Proficiency as a minimum qualification. This regulation is geared at increasing the professionalism of insurance services and to make the insurance workforce able to offer quality services to their client.

3.2.6 Basic telecommunications

The basic telecommunications sub-sector is one of the services sub-sectors that Uganda has made commitments on at the WTO, mainly in respect of market access, non-tariff, and other related commitments. Some limitations to market access however still exist. The process of liberalization of telecommunications services in Uganda began in earnest in 1996 when the government decided to implement broad utility sector reforms, including the telecommunications services sub-sector, beginning first with the separation of postal services and telecommunications and then divesting away part of its original 100% total ownership (to 49% government ownership and 51% majority share owned by a private company). The Uganda Communications Commission (UCC) was also established as an independent regulator in 1998 for the sub-sector, while playing the advisory role to government on communication policy. Following these combined reform and liberalization measures, numerous other telecommunications services providers began to be licensed and therefore opening opportunities for extensive investments in this service area. Subsequently, Celtel was the first mobile telecommunication company operating almost as a monopoly before Mobile Telecommunication Network (MTN) entered the market. Uganda now has five mobile telecommunication services providers spread almost throughout the country. As a result, mobile phone services have grown significantly, offering services across the East African region and in rural areas at reasonably competitive prices.

Nevertheless, telecommunications needs as a whole in Uganda ought to be viewed beyond the scope of mobile telephony, to include data transmission and other channels that are required. Ideally, telecommunications services regulations should include the need for e-commerce legislation to cover internet security and the data and content layers as well. Parameters like data protection, identify protection, electronic signatures etc would need to be covered in such legislation if Uganda can be able to use telecommunications in a bid to promote services exports as a key backbone service. In terms of internet costs, penetration is limited mainly only to the capital city Kampala and the costs of which are astronomically high given that 80% of all businesses in the country are largely SME's and therefore they cannot afford commercial rates for their internet services. It also means that the use of internet in homes is very limited except for the higher income section of the population. That weakness has an adverse impact on: integration into the global services

economy and the capacity of small market entrants to take advantage of low internet costs to offer goods and services using electronic means.

3.2.7 Tourism and travel services

The country has made WTO commitments in tourism and travel services sector particularly in hotel and restaurant services, and travel agencies and tour operators. Government approval and regulation is still required for market access of foreign firms in respect of hotel and restaurant services in accordance with the investment code. These services are unbound except for technical personnel where Ugandans may become available. Further, the entry and temporary stay of foreign suppliers is also subjected to compliance with laws, regulations and guidelines in force in Uganda.

With regard to travel agencies and tour operators, market access limitations apply to modes 3 and 4 sources of supply and government approval is required through the Uganda Investment Authority (UIA). These services remain unbound except for market access conditions relating to technical personnel. There has also been private management of game reserves through concessions.

3.2.8 Education services

Within the listing of the schedule of measures that affect trade in services, the provision of educational services can be broken down into two main categories namely the provision of teaching services and the establishment of private schools. With respect to teaching services, market access commitments are provided for mode 3 supply where there are conditions for the registration and licensing of teachers, and mode 4 supply where no limitation may apply except when local technical expertise is available (as stipulated within the Investment and Immigration Laws).

Regarding to the establishment of private schools, limitation on market access again requires that certain measures leading to the establishment of private schools must be fulfilled. As to licensing, registration and operation of private schools and institutions in Uganda, both private and government aided schools are governed by the Education Act, and therefore follow the same syllabi prepared by the Ministry of Education and evaluated by the Uganda National Examinations Board. However, an additional commitment concerning guidelines on licensing, registration and operation of private schools and institutions in Uganda exists, where the licensing and registration is free of charge. Other internationally recognized syllabi are allowed such as the Cambridge Certificate, including the licensing of international schools.

3.2.9 Health and other social services

General limitations on market access and national treatment (NT) in respect of health services apply to mode 3 supply requirements in respect of Non-Governmental Organizations' (NGOs). The respective limitations concern conditions for the registration of NGOs. The terms of the registration and certification of the NGOs operations require that no organization shall operate in Uganda unless it has been duly registered with the Board established under the appropriate Act. Upon registration, a certificate is issued to the organization subject to such conditions or directions generally as may be fit but particularly relating to the operations of the organization. The other market access limitation concerns mode 4 supply, given that local technical expertise is abundantly available. The relevant NT limitations relate to local NGO's having to pay Shillings 15,000= (US Dollars 8) as registration fees, while the foreign NGO pays United States Dollars 75 both under mode 3 supply, and mode supply requirements where foreigners working with NGOs should present photocopies of their classifications, immigration status in the country, a letter from his home government that he or she has no criminal record.

Under the health and related services sector, pharmacist services also attract specific limitations on market access. These limitations apply to mode 3 supply, where there are provisions for licensing and qualifications of Uganda pharmacists and dispensing chemists by the National Drug Authority. As to pharmacies and drugs, the law imposes certain specific restrictions on the use of the words pharmacy and pharmacists. The National drug Policy and Authority requires, subject to the provisions of this law, to allow no person to mix, compound, prepare, supply or dispense any restricted drug unless the person is a registered pharmacist, medical practitioner, dentist, veterinary surgeon or a licensed person. The law also provides for limitations on the qualifications of licensed persons. No limitations on NT are applied in this regard.

On health professionals, limitations apply to modes 3 and 4 supply under market access considerations where a private practitioner must satisfy specified minimum requirements relating to hygiene, ventilation, and so on, while medical ethics prohibits advertisement of medical services. As to mode 4 supply limitations, the Allied Health professionals requires that a person should hold certain qualifications awarded by any of the training institutions recognized under section 20 of the relevant Act in order to qualify for registration. NT limitations also apply to a person holding appropriate qualifications from recognized institutions before being eligible for registration in the appropriate disciplines.

3.2.10 Transport services

Transport services attract mainly limitations to market access with regard to mode 3 supply. The inland water transport sector provides limitations relevant to mode 3 supply,

which stipulates that no person shall convey by means of any ship upon the inland waters of Uganda any goods or any person for hire or any goods for or in connection with any trade or business carried on by him. Any person applying for a licence for carriage of passengers or goods by ship therefore shall submit to the board certain particulars. With regard to vessel registration, every vessel employed in navigation in any waters of Uganda must be registered and numbered.

The regulation in the sector is not streamlined as in the other sectors with a single regulator. Shipping companies are governed by regulations from the Ministry of Transport and Communication, the Uganda Revenue Authority and the Inter Governmental Standing Committee on Shipping comprising of Kenya, Uganda, Tanzania and Zambia. The coming of big shipping companies like Maersk Sealand, P & O Nedloyd, MSC and PIL after 1999 has led to the formation of a shipping association which has not had an impact on the regulation as yet.

Railways transportation also attracts limitations on market access. In this regard, subject to the right of government, the Uganda Railways Corporation provides and operates transport services. However, no rail transport services shall be provided and no rail shall be constructed for carriage on it of passengers or goods for reward within Uganda by any person other than the corporation except on industrial estates for industrial purposes only. There has been a 25 years exclusive concession given to the Rift Valley Railways. The absence of a railway has made the transport of goods within the EAC region cumbersome, slow and expensive. Obviously, the development of an efficient railways network in the country and the region is extremely important particularly given Uganda's land locked status.

On motor vehicle transportation, a licensing officer shall, prior to the registration of a motor vehicle, trailer or engineering plant, verify the particulars in applications for registration and where a person is convicted of an offence, the courts shall, in addition to any penalty imposed, order the forfeiture of any registration plate. More limitations of a specific nature also apply to various categories of motor vehicles depending on their use.

3.2.11 Labor services and related remittances

Overall labour policies in Uganda have remained decisively weak over the years dating as far back as the 1970s despite recent movements in international trading and labour laws and conditions. However, of recent, the export of labour through temporary movement of natural persons has increasingly gained recognition.

Uganda is certainly one typical African country that has registered steady growth in labour remittances since the 1990s and therefore has substantially benefitted the economy and its people's welfare. A specific type of labour service that has observed rapid emergence and growth in Uganda is the export of labour services. This category of labour services is locally known by its tag name as "*Kyeyo*", and it is in fact the sub-sector of labour services that reflects the provision of both professional and unskilled services by Ugandans abroad. It has also grown dramatically to become a major source of foreign exchange earnings as reflected in Uganda's balance of payments. That is why Uganda has for long attached significant importance to this category of labour services, which, to a good degree, has influenced its current stance in the evolving multilateral and regional negotiations of the need of the recognition of the 'temporary or free movement of natural persons' as a necessary statute of international and regional trading rules.

3.2.12 Informal sector services

In many ways, the informal sector is closely associated with the provision of labour services in a more substantial sense. In many developing countries, informal activities are perhaps even more dominating in economic activity, if not well entrenched. It is believed that informal activities in developing countries represent an important component of their economies largely characterized by significant informal labour services and employment in informal production (see Abdalla, 2009), characterized by small-scale, unskilled, labour intensive and self-financed activities of production and services provision.

Indeed, the informal sector in Uganda has over the years grown rapidly and therefore attracted the attention of policy makers, economic managers, academics and researchers alike. In terms of the size of the sector and its pace of growth, it is estimated that the sector has well over 800,000 informal enterprises in Uganda, which together provide employment opportunities to an estimated 1.5 million people. This number represents about 90 percent of total non-farm private sector workers alone, while it is also estimated to grow at the rate of 20 to 25 percent per annum, employing about 20 percent of the working age population in Uganda of which 60 percent depend on their informal businesses for at least half of their income. In these respects, a range of services provisions by the informal services sector in urban areas have grown and become evermore resilient, dominated mostly by unskilled activities and women (accounting for 92 percent of all informal economic activities together).

3.3. Services and manufacturing performance

3.3.1 Overall services sector

The services sector has become one of the main contributors to economic growth in general and poverty eradication through employment generation, remittances inflows from abroad and by forward and backward linkages with other sectors of the economy. Over the last 15 years, services have seen the highest growth potential than any other sector in Uganda. The sector has been growing at 6.8 percent per annum, ahead of the agricultural sector which still employs over 80 percent of the population, albeit with a declining contribution to GDP at 15.7 percent in 2007/08 to 15.1 percent in 2008/09. In 2008/09 the services sector grew by 9.4 percent compared to 7.2 percent for industry and 2.6 percent for agriculture (Figure 2). The aggregate contribution of services to GDP in 2008/09 was 51.2 percent, fairly comparable with the year before when its contribution was equivalent to the two other sectors combined (24.5 percent for industry and 26 percent for agriculture). This emphasizes the importance of the sector as a key driver of economic growth for Uganda in the medium to long term (Ministry of Finance, 2008) ⁷.

Table 2: Services growth rates

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Services	7.90	6.20	12.20	8.00	10.20	9.40
Wholesale & retail trade; repairs	6.30	7.20	12.30	10.40	14.70	7.60
Hotels & restaurants	9.50	6.50	8.70	11.30	10.70	7.90
Transport & communications	15.80	9.80	17.10	17.70	21.30	20.00
Road, rail & water transport	8.90	6.70	12.80	9.50	20.80	12.40
Air transport and support services	13.80	19.70	6.90	13.80	17.80	1.30
Posts and telecommunication	28.60	11.80	26.20	29.10	22.60	32.20
Financial services	0.00	13.00	31.70	-11.90	24.10	21.10
Real estate activities	5.50	5.50	5.60	5.60	5.60	5.70
Other business services	7.00	9.20	12.50	10.60	14.30	8.80
Public administration and defense	7.70	-5.40	15.80	-6.30	13.30	4.70
Education	9.10	4.40	9.40	10.60	-6.50	4.80
Health	0.90	5.60	12.90	2.70	-4.80	8.10
Other personal and community services	16.10	15.00	14.10	13.40	12.80	12.30

Note: May not add exactly due to rounding

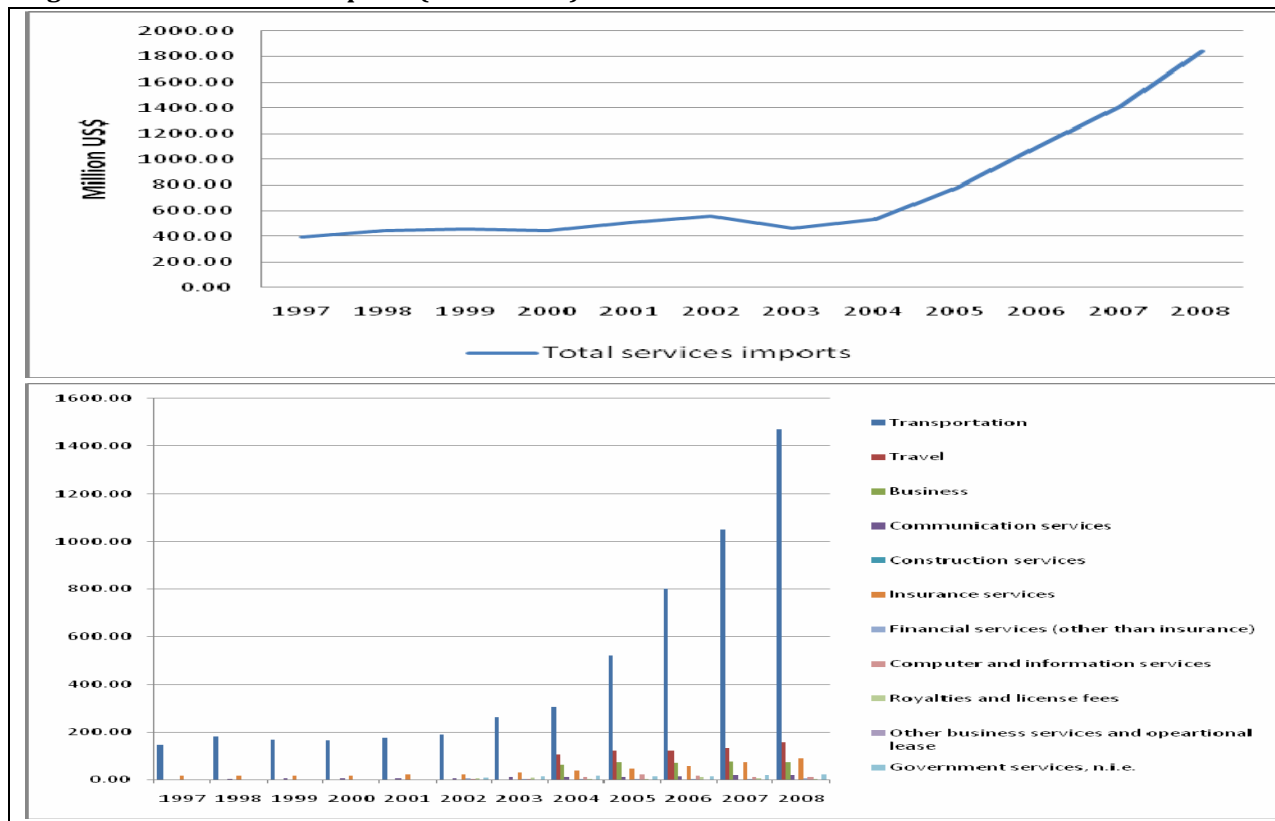
Source: Background to the Budget FY 2009/10, June 2008, p.12

Services imports have continued to expand considerably since 2003 (Figure 1). The expansion in services imports has been largely driven by transportation and travel (tourism) and insurance sub-sectors as indicated in the lower panel of Figure 1. Indeed, it is not surprising for transportation to drive growth in services imports given that the country

⁷ Background to the Budget 2008/09 Fiscal Year, Ministry of Finance Planning & Economic Development (2008),

is landlocked, making it highly dependent on transportation for most of its transaction with the rest of the world.

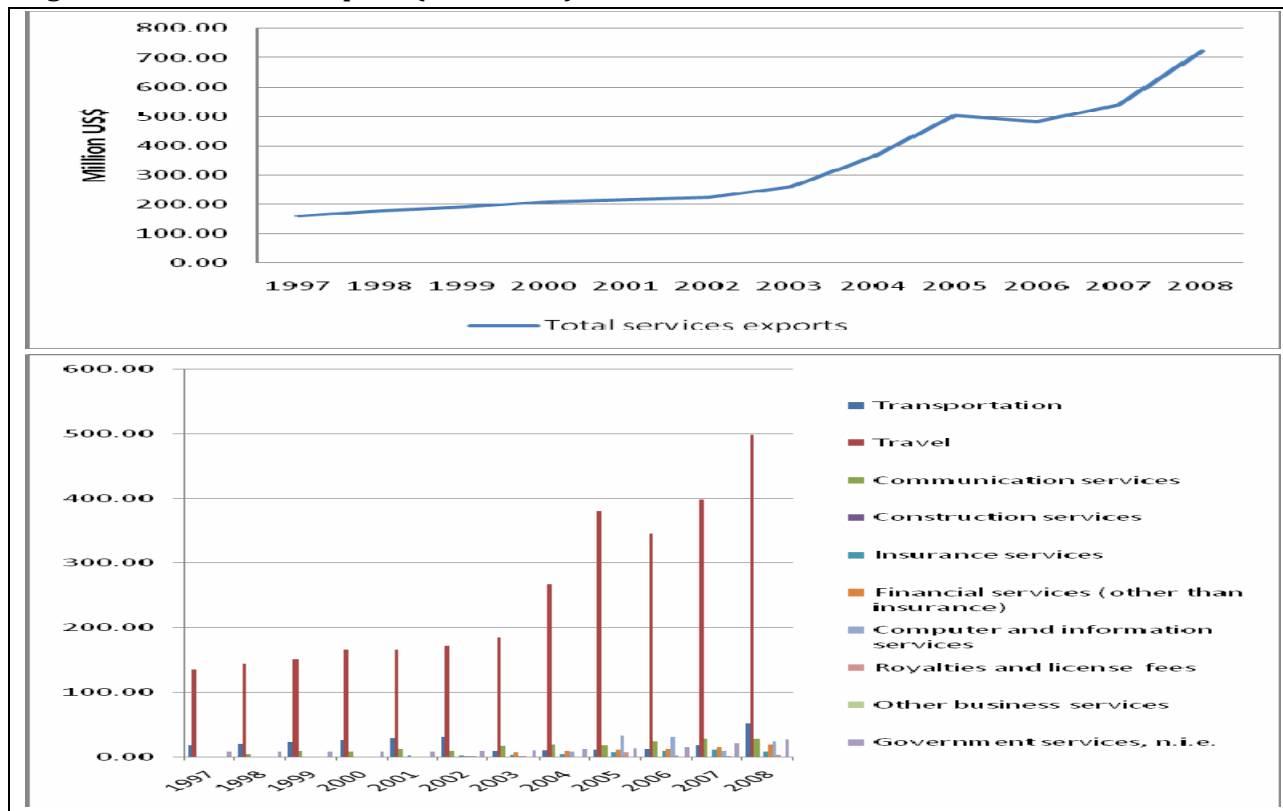
Figure 1: Total services imports (million US\$)



Source: Bank of Uganda, Balance of Payments database

Similarly, export of services continued to expand since 1997 although it marginally dropped in 2005. However, export of services remained below services imports in nominal terms (Figure 2). The major drivers of services exports have been travel (tourism), communication (especially telecommunication), transportation, insurance, banking, computer and information services and to some extent government services (which apparently is outside the scope of GATS- see GATS Article 1 Para. 3 (b)). Since 2002/3, the communications sector has been the fastest growing sector in Uganda. Also, total revenue generated in the ICT sector experienced a 20 fold growth in the five years between 2001 and 2006, (ITC& USAID, 2006).

Figure 2: Total services exports (Million US\$)



Source: Bank of Uganda, Balance of Payments database

The EAC is the primary export market for most firms in the ICT and Telecoms sectors. Uganda’s Services Capacity Report (ITC& USAID, 2006) indicates that all the respondents quoted at least one of the EAC countries as being among their top three principal export markets. The report further reveals that all respondents also indicated that at least one EU country was among their primary export destinations.

3.3.2 Performance of manufacturing

Uganda’s share of the manufacturing sector in total GDP is still relatively low although the growth rates have been impressive, averaging about 7 percent per year since 2003/04. Whereas the manufacturing sector in Uganda is diverse in composition, it is nevertheless characterized by mainly the processing of agricultural commodities and the production of consumer goods for the domestic market. Capital goods production and exports is minimal in the country. With regard to utilization in the manufacturing sector, the majority of firms still operate below 50 percent of their installed capacities, meaning that the low capacity utilization has resulted partly due to low domestic demand for local products and perhaps due to heightened competition among the manufacturers themselves.

Table 3: Manufacturing sector's growth rates (%) as extracted from the GDP sector's growth

	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Industry	8.00	11.60	14.70	9.90	9.10	3.80
Mining & quarrying	1.70	27.20	6.10	19.40	3.00	9.20
Manufacturing	6.30	9.50	7.30	4.30	7.60	7.20
Formal	8.30	11.80	7.80	4.00	9.20	8.30
Informal	1.70	3.60	6.00	5.20	3.30	4.00
Electricity supply	7.70	2.10	-6.50	-4.00	5.40	4.20
Water supply	4.20	3.90	2.40	3.50	3.80	4.10
Construction	10.00	14.90	23.20	13.20	10.80	2.20

Note: May not add exactly due to rounding

Source: Background to the Budget FY 2009/10, June 2008, p.12

4. METHODOLOGY

4.1 The model

Based on the approach by Arnold et al. (2006a) and, to some extent complemented by innovations similar to Fernandez (2007), we examine the effect of reforms in services on productivity in downstream manufacturing. This paper adopts a panel estimation technique on firm level data during 2000–2006 to examine the effect of services reforms on downstream manufacturing. The dependent variable in our model is real productivity in manufacturing, generated using an augmented Cobb-Douglas production function. The independent variables, *ceteris paribus*, include a lagged value of a measure of services reforms proxied by an index of progress in services reforms and augmented by other explanatory factors. The use of lagged independent variables allows time for the effects of liberalization in services sub-sectors to materialize.

In order to obtain meaningful quantitative impact of reforms in services on manufacturing, the paper constructs an aggregate reform index for the overall services sector. We first construct composite indexes of reforms for the different services sub-sectors based on a working template similar to that developed by the European Bank for Reconstruction and Development (EBRD) for countries in Central and Eastern Europe and reported in the Transition Report 2004. The details of the contents of the templates used in deriving the composite indexes of reforms needed for the analysis are shown in the appendix. One of the convenient features of this approach is that it starts from a general template of requirements necessary to achieve a given level of policy reform, which is then adapted to the specific situation of each sector.

In the model, for each services sector k , the relevant services reform index- $reform_{kit}$ - ranges from 0 to 5. An index value of 0 represents a state of high limited scope for market forces. The government remains either the sole provider of services or has extremely a

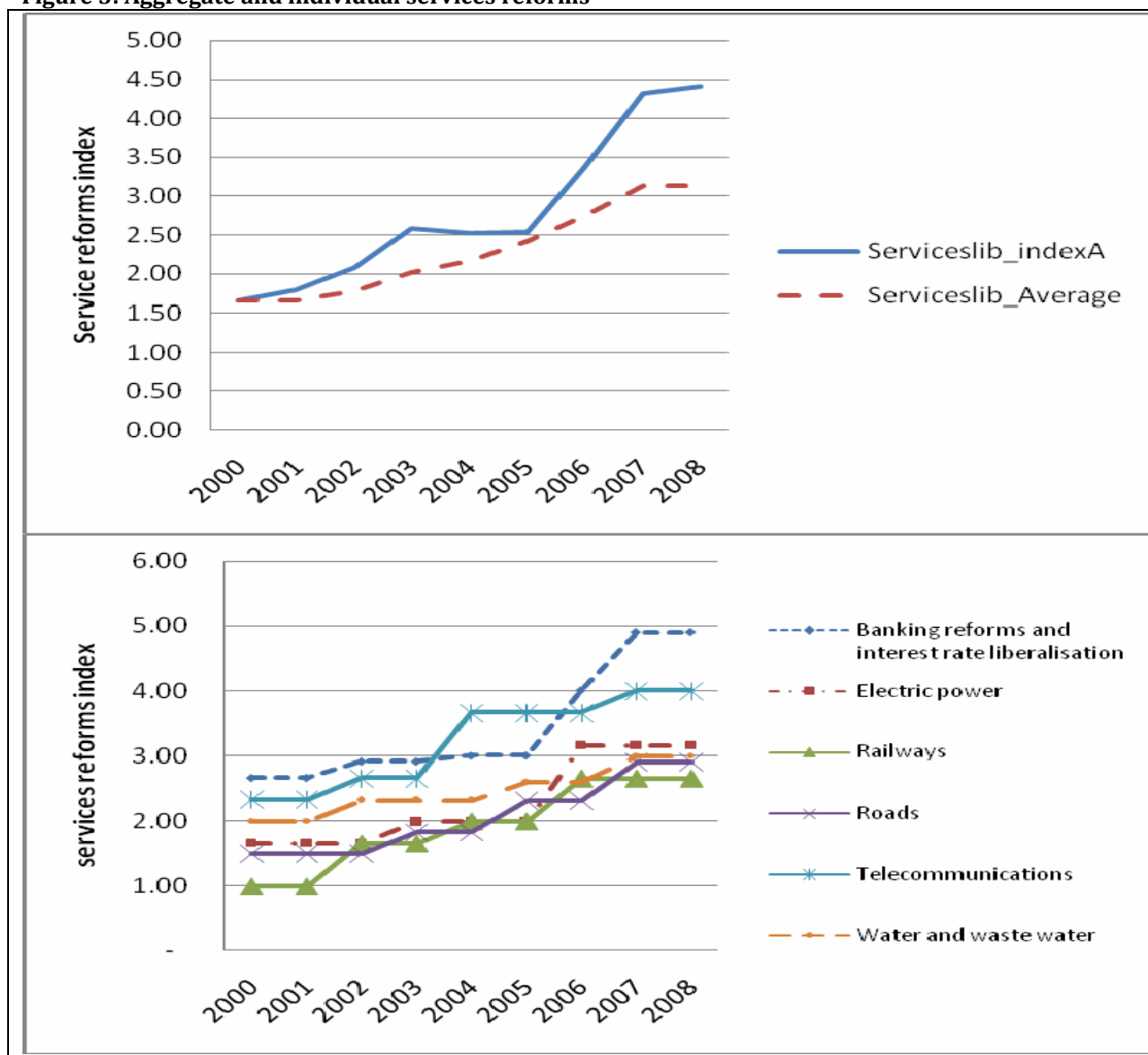
strong say on the private sector. An index value of 1 shows some scope for private sector participation and some reforms in operations, combined with very limited scope for foreign participation. An index value of 2 indicates a limited degree of operational decisions by government, extensive price reforms and clear scope for foreign participation as minority participations. An index value of 3 implies significant scope for private providers, including foreign ones, a high level of competitive pressure from new entrants and explicit promises for foreign equity participation. An index value of 4 is equivalent to little public intervention, the possibility of majority foreign ownership, and the dominance of private sector entities. Lastly, an index value of 5 reflects equal treatment of foreign and domestic providers, a full adoption of regulation with international standards and unrestricted entry. The template is presented in Appendix 1.

Some services are likely to be more vital for manufacturing than others. The dependence of manufacturing on services may also vary across different industries. Therefore, utilizing an un-weighted average of services reform indices is likely to be inappropriate to the approximation of the impact of upstream services reforms on the performance of manufacturing firms. To aggregate the sector-specific indices into a single index of services reform for Uganda, we obtain information on the intensity with which the services inputs are used in the production of a given manufacturing sector, based on the national Social Accounting Matrix (SAM) for 2002. In particular, we weight each of the reform indices for the major services sectors (banking, telecommunication, roads, railway, electricity and water and sewerage) by the proportion α_{jk} of inputs sourced by the manufacturing sector j from the services sector k to create the index of services reform, thus:

$$Serviceslib_index_{jt} = \sum \alpha_{jk} reforms_{kt} \quad (1)$$

Where, α_{jk} is based on the SAM. Figure 3 graphs the variation contained in the services reform indices.

Figure 3: Aggregate and individual services reforms



Source: Authors' computation

We estimate an augmented Cobb-Douglas production function for these industries combined, by regressing real firm output on real inputs of capital and labour. The augmentation of the production function brings in measures of services reform and other control variables. The statistical estimation equation defined and used takes the form of a log-linear equation:

$$y_{it} = \alpha_i + \beta_{1j}K_{it} + \beta_{2j}L_{it} + \beta_3.serviceslib_index_{jt-1} + \beta_4.FDI_{t-1} + \eta_t + \varepsilon_{it} \quad (2)$$

Where, y_{it} is the output of firm i in year t , K_{it} for capital and L_{it} for labour. The measure of services reform, $serviceslib_index_{jt-1}$ is computed as in equation (1) and lagged by one period to allow for the assessment of the effect of reforms at least over one year later, FDI_{t-1}

is foreign direct investment. Foreign direct investment inflows bring with them improved technology and expertise which should trickle down to other firms. We include firm cross section effects- η_i - to capture individual firms' peculiarities or idiosyncratic characteristics and ε_{it} is the error term.

4.2 Data characteristics

To obtain an indicator of productivity of manufacturing firms, the paper uses annual set of firm level data obtained from the Private Capital Survey database maintained by Bank of Uganda, Statistics Department. The Private Capital Survey is conducted every year and the related data available started in the year 2000. However, because of data attrition and the need to maintain consistency in the cross section data, annual data of 18 manufacturing firms ranging from the year 2000 to 2006 were selected. The selection of the statistics was based on the National Industry Classification System (NICS) for Uganda and attuned to selected categories of firms such as Chemicals and Petroleum, Food and Beverages, Other forms manufacturing, Machinery, Motors & Equipment, and Agro-industry.

Data on macroeconomic control indicators were obtained from the International Financial Statistics database. It is important to note that Uganda intensively implemented reforms in the numerous service industries since the 1987 albeit with varying degrees. Therefore, there were no fundamental regime changes that would have profoundly affected the data series for the analysis period. Summary statistics for all the variables are presented in Table 4. The Foreign variable- η_i - is a dummy variable, which defines a firm as follows: if a firm's shareholder is a non-resident and owns 10% and above of the total shares, then the said firm is defined as foreign (thus coded as foreign=1); and f=0 otherwise. The dummies are introduced to measure the effect of reforms on foreign firms relative to domestic ownership.

Table 4: Summary statistics

	LOG(TURNOVER)	LOG(CAPITAL)	LOG(LABOUR)	LOG(SERVICES_INDEXA)	LOG(FDI)	FOREIGN
Mean	15.44	14.93	12.76	0.84	13.03	0.67
Median	15.52	14.93	12.79	0.93	12.89	1.00
Maximum	19.17	18.21	16.26	1.21	13.98	1.00
Minimum	11.42	6.76	8.89	0.51	12.48	0.00
Std. Dev.	1.61	1.88	1.50	0.22	0.51	0.47
Skewness	0.00	-1.08	-0.25	0.00	0.66	-0.71
Kurtosis	2.55	6.06	3.43	1.92	2.26	1.50
Jarque-Bera	1.06	73.54	2.28	6.13	12.03	22.31
Probability	0.59	0.00	0.32	0.05	0.00	0.00

Sum	1945.55	1881.22	1608.05	105.38	1641.16	84.00
Sum Sq. Dev.	325.21	442.42	282.90	6.20	32.27	28.00
Observations	126.00	126.00	126.00	126.00	126.00	126.00

Note: Labour is measured using compensation of employees and other staff costs.

4.3.1 Impact of services reforms

The point estimates for the augmented production function are presented in Table 5. It can be noted that the coefficients have the correct signs and reasonable values. The average coefficient of returns to scale due to capital and labour is less than constant (0.6251). The respective coefficients for capital and labour are 0.1420 and 0.4831 as shown in Table 5.

Table 5: Productivity Effects of Services Liberalization (Dependent variable = Turnover)

	Coefficient	Std. Error	t-Statistic	Prob.
C	4.6055	0.9170	5.0223	0.0000
LOG(CAPITAL)	0.1420	0.0213	6.6770	0.0000
LOG(LABOUR)	0.4831	0.0446	10.8389	0.0000
LOG(SERVICELIB_INDEXA(-1))	0.8021	0.1476	5.4354	0.0000
LOG(FDI(-1))	0.3686	0.0682	5.4058	0.0000
Effects Specification				
			S.D.	Rho
Cross-section random			0.5391	0.6996
Idiosyncratic random			0.3533	0.3004
Weighted Statistics				
R-squared	0.7014	Mean dependent var		4.0192
Adjusted R-squared	0.6898	S.D. dependent var		0.7293
S.E. of regression	0.4062	Sum squared residual		16.9957
F-statistic	60.4752	Durbin-Watson stat		1.0798
Prob(F-statistic)	0.0000			
Unweighted Statistics				
R-squared	0.6795	Mean dependent var		15.5510
Sum squared residual	87.7329	Durbin-Watson stat		0.2092

The coefficient on the aggregate services reform index is positive and statistically significant at the 5% level, suggesting a strong role for services liberalization in explaining manufacturing turnover in Uganda. By its indication, a one percent increase in the

aggregate services reform index improves productivity of manufacturing firms by 0.8 percent on average. The coefficient of determination is also relatively high at 0.69 percent, thus meaning that 69 percent of the variation in firms' productivity in manufacturing can be substantially explained by capital, labour, the aggregate services reforms index, foreign direct investment and the foreign-dummy variable as specified.

When we enter the individual service sectors reform indices into the regression on a one by one basis, the regressions results suggest that all the services sub-sectors reforms have strong and significant impacts on firms' productivity. As shown in Table 6, the effects of liberalization are positive for reforms in all, but water and sewerage sub-sectors. A one percent increase in liberalization of the water and sewage industry yields a reduction in productivity of manufacturing. Banking reforms have a 0.28 percent increase in manufacturing firms' productivity, although the estimate is statistically insignificant. The reforms to the electricity industry increase manufacturing productivity by 2.3 percent. This result is statistically significant at 5% level. Almost all the manufacturing firms in Uganda rely on electricity power for production. Reforms in the railways, roads and telecommunication all have positive effects on productivity in manufacturing, but they are not statistically significant. These findings suggest that liberalization of services sectors contribute to the improvements in productivity of manufacturing firms in Uganda.

Table 6: Productivity Effects of Services Liberalization (Dependent variable = Turnover)

	Banking	Electricity	Railways	Roads	telecom	Water
	0.282029 (2.262291)	2.259885*** (0.204958)	0.055344 (0.397098)	1.141939 (0.757330)	0.072551 (0.725548)	-0.257947 (1.262724)
R-squared	0.687877	0.712457	0.687713	0.696116	0.687616	0.687860
Adjusted R2	0.672577	0.712457	0.675585	0.681220	0.675485	0.675738
Durbin Watson	1.45	1.495	1.555	1.769501	1.637840	1.650116
Number of firms	18	18	18	18	18	18
Observations	108	108	108	108	108	108

Note: Standard errors in parenthesis *** significant at the 1 level, ** significance at 5% level and * significant at 10 percent level

6. POLICY IMPLICATIONS AND CONCLUSION

We find that liberalization in backbone services sectors have had profound positive and significant effects on manufacturing in Uganda. In particular, reforms in finance and infrastructure have had a positive and significant effect on downstream manufacturing. This result suggests that services provide a potential avenue for assisting economic growth and development. Policy makers in Uganda ought to therefore pursue objectives that should promote and sustain the impetus for productivity growth in the services sectors. If appropriate relevant measures are implemented, productivity growth in manufacturing can be sufficiently boosted to deliver competitive, high quality products for the markets. The necessary related policies should aim at the following:

- Ensuring the further liberalization measures are undertaken by removing barriers to product innovations, while encouraging and promoting competition in the various services sector activities;
- Creating an enabling environment to attract sustained FDI inflows through the maintenance of macroeconomic stability, increasing the impetus of fundamental reforms in various important institutions (legal and regulatory frameworks);
- Inducing further penetration of information, communication and technology (ICT) and avoiding measures that may undermine new and additive innovations and investments for fostering further penetration of telecommunication network services, even well into the rural areas.

Remaining weaknesses in the existing laws, institutions and regulatory arrangements concerned with the provision of services need to be tackled as a matter of necessity in to inject some effectiveness of these bodies and laws for purposes of developing domestic services capacities and quality of services products. These measures should continue to be complemented by ongoing strategic reforms consistent with acceptable international trade rules.

With respect to market access opportunities for services products, a definable strategy for Uganda should include taking advantage of emerging market access opportunities, firstly, via its wider regional market opening under the East African Community (EAC) and COMESA, and secondly, under the impending trade preferences due to be offered under an Economic Partnership Agreement, wherein a specific Aid for Trade component should be used to develop useful capacities for improving the quality and standards of services products of the country.

In view of all the foregoing, it is perhaps quite necessary at this juncture for the nation to undertake a holistic review of its overall trade policies to include a serious consideration for a deliberate policy aimed at transforming the some activities of the informal sector. In such a strategy, emphasis should be devoted towards the formalization and development of informal labour or employment related services that are often inextricably linked to informal credit and financial services.

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Appendix: Template for constructing services reforms indexes

1. Banking reforms and interest rate liberalization

Little progress beyond establishment of a two tier system

Significant liberalization of interest rates and credit allocation; limited use of directed credit or interest rate ceilings

substantial progress in establishing banks' solvency and of a framework for prudential supervision and regulation; full interest rate liberalization with preferential access to cheap financing; significant lending to private enterprises and significant presences of foreign banks

significant movement of banking laws and regulations towards BIS standards; well functioning banking competition and effective prudential supervision; significant term lending to private enterprises; substantial financial deepening

Standards and performance norms of advanced industrial economies: full convergence of banking laws and regulations with BIS standards; provision of full set of competitive banking services

2. Electric power

Power sector operates as government department with few commercial freedoms or pressures. Average prices well below costs, with extensive cross subsidies. Monolithic structure, with no separation of different parts of the business.

Power company distanced from government, but there is still political interference. Some attempts to harden budget constraints, but effective tariffs are low. Weak management incentives for efficient performance. Little institutional reform and minimal if any private sector involvement

Law passed providing for full scale restructuring of industry, including vertical unbundling through account separation and set-up of regulator. Some tariff reform and improvements in revenue collection. Some private sector involvement.

separation of generation, transmission and distribution. Independent regulator set-up. Rules for cost reflective tariff setting formulated and implemented. Substantial private sector involvement in distribution and/or generation. Some degree of liberation

Tariff cost reflective and provide adequate incentives for efficient improvements. Large scale private sector involvement in the unbundled and well regulated sector. Fully liberalized sector with well functioning arrangements for network access and full competition in generation.

3. Railways

Monolithic structure operated as government department, with few commercial freedoms. No private sector involvement and extensive cross subsidization.

Rail operations distanced from state, but weak commercial objectives. Some business planning, but targets are general and tentative.

No budgetary funding of public service obligations. Ancillary business separated, but little divestment. Minimal private sector involvement.

Commercial orientations in rail operations. Freight and passenger services separated and some auxiliary businesses divested.

Some budgetary compensation available for passenger services. Improved business planning with clear investment and rehabilitation targets, but funding unsecured. Some private sector involvement in rehabilitation and maintenance

Railways fully commercialized, with separate internal profit centers for passenger and freight. Extensive market freedoms to set tariffs and investments. Implementation of medium term business plans. Ancillary businesses divested. Private sector participation in freight operation, ancillary services and tract maintenance.

Separation of infrastructure from operations and freight from passenger operations. Full divestment and transfer of asset ownership implemented or planned, including infrastructure and rolling stock. Rail regulator established and access pricing implemented

4. Roads

Minimal degree of decentralization and no commercialization. All regulatory, road management and resource allocation functions centralized at ministerial level. New investments and road maintenance financing dependent on central budget allocations. Road user charges not based on the cost of road use.

Road construction and maintenance undertaken by public contraction units. No public consultation in the preparation of road projects

Moderate degree of decentralization and initial steps in commercialization. Road/highway agency created. Improvements in resource allocation and public procurement. Road user charges based on vehicle and fuel taxes, but not linked to road use.

Road fund established, but dependent on central budget. Road construction and maintenance undertaken primarily by corporatized public entities, with some private sector participation. Minimal public consultation/participation on road projects.

Fair degree of decentralization and commercialization. Regulation and resource allocation functions separated from road maintenance and operations. Level of vehicle and fuel taxes

related to road use. Private companies able to provide and operate roads under negotiated commercial contracts. Private sector participation in road maintenance and/or through Concessions to finance, operate and maintain parts of highway network. Limited public consultation/participation and accountability on road projects

Large degree of decentralization. Transparent methodology used to allocate road expenditures. Track record in competitive procurement for road design, construction, maintenance and operations. Large-scale private sector participation in construction, operations and maintenance directly and through public-private partnerships. Substantial public consultation/ participation and accountability on road projects.

Fully decentralized road administration. Commercialized road maintenance operations competitively awarded to private companies. Road user charges reflect the full costs of road use and associated factors, such as congestion, accidents and pollution.

Widespread private sector participation in all aspects of road provision. Full public consultation on new road projects.

5. Telecommunications

In management decisions. Low tariffs, with extensive cross subsidization. Liberalization not envisaged, even for mobile telephony and value-added services.

Modest progress in commercialization. Corporatization of dominant operator and some separation from public sector governance, but tariffs are still politically set.

Substantial progress in commercialization and regulation. Telecommunications and postal services fully separated, and cross-subsidies reduced. Considerable liberalization in the mobile segment and in value-added services.

Complete commercialization, including privatization of the dominant operator, and comprehensive regulatory and institutional reforms. Extensive liberalization of entry.

Effective regulation through an independent entity. Coherent regulatory and institutional framework to deal with tariffs, interconnection rules, licensing, concession fees and spectrum allocation. Consumer ombudsman function.

6. Water and waste water

Minimal degree of decentralization; no commercialization. Services operated as vertically integrated natural monopolies. by a government ministry or municipal departments. No financial autonomy and/or management capacity at municipal level. Low tariffs, low cash collection rates and high cross-subsidies.

Moderate degree of decentralization; initial steps towards commercialization. Services provided by municipally owned companies. Partial cost recovery through tariffs, and initial steps to reduce cross-subsidies. General public guidelines exist regarding tariff-setting and

service quality but both under ministerial control. Some private sector participation through service or management contracts, or competition to provide ancillary services.

Fair degree of decentralization and commercialization. Water utilities operate with managerial and accounting independence from municipalities, using international accounting standards and management information systems. Operating costs recovered through tariffs, with a minimum level of cross-subsidies. More detailed rules drawn up in contract documents, specifying tariff review formulae and performance standards. Private sector participation through the full concession of a major service in at least one city.

Large degree of decentralization and commercialization. Water utilities managerially independent, with cash flows – net of municipal budget transfers – that ensure financial viability. No cross-subsidies. Semi-autonomous regulatory agency has power to advise and enforce tariffs and service quality. Substantial private sector participation through build-operator-transfer concessions, management contacts or asset sales in several cities.

Water utilities fully decentralized and commercialized. Fully autonomous regulator exists with complete authority to review and enforce tariff levels and quality standards. Widespread private sector participation via service/ management/lease contracts.

High-powered incentives, full concessions and/or divestiture of water and waste-water services in major urban area.