

Chapter 10: The Manufacturing Sector

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1. Introduction

Kenya is a resource poor country with rapid population growth and, in terms of employment, a large agricultural sector. With limited access to fertile land, the agricultural sector may not be able to deliver sustained growth in per capita income in the future. As land is not an important factor for manufacturing production, this is much less of a constraint for manufacturing growth. Unless there is a high rate of growth in the formal manufacturing sector generating job opportunities for the rapidly growing Kenyan labour force, Kenya risks remaining a low-skill, low-capital economy with low incomes and increasing distributional tensions. At present the informal sector absorbs most of the newcomers to the labour market, but this sector offers low wages and contributes little to exports and technological progress in the country. For reasons to do with technology and costs, manufacturing may benefit from economies of scale, so that average production costs fall as firms grow. Policy makers in Kenya recognize the importance of the manufacturing sector for long-term economic development. Indeed, the growth targets for manufacturing stated by the government in its Vision 2030 document are ambitious and require rapidly increasing investment levels, eventually reaching levels above 30% of GDP (Kenya, 2007).

Against the backdrop of these ambitious plans of the government we discuss in this chapter the experiences and prospects of the Kenyan manufacturing sector. Our discussion consists of two main parts. The first, provided in Section 2, focuses on industrialization strategies. After a brief overview of the period between 1960 and 2000, we provide a detailed account of recent industrial policies in Kenya. We note that the current industrial policies are no longer rooted exclusively in ideas related to the Washington consensus, which revolved around stabilization, privatization, and liberalization. Instead, improving the investment climate more broadly is seen as the general means of achieving significant investment and growth in the industrial sector. We examine recent reforms of trade policy

that may impact on manufacturing firms' ability to export and benefit from technological spillovers, and discuss the government's far-reaching plans for improving the infrastructure. We also discuss the thorny issue of instability and political uncertainty and the implications for manufacturing performance. In this context, the damage caused by the clashes following the disputed presidential election results in December 2007 may be long-term. We end our policy discussion by noting some difficult choices for Kenya, to do with the potential trade-off between efficiency and equity in the context of implementing policies. The second part of our discussion, provided in Section 3, provides an overview of the performance of Kenya's manufacturing sector and a comparative study of the constraints to business. Drawing on firm-level data obtained from manufacturing surveys, and official aggregate data, we show how key outcome variables such as growth, productivity, investment and export have developed in the last few years, and discuss the leading business constraints. Our conclusions are provided in Section 4.

2. Strategies for Industrialization: Past and Present

The Sixties and Seventies: Import Substitution

Kenya pursued a strategy of import substitution following independence in 1963, similar to many other African countries at the time. Most of manufacturing investment in the 1960s went into heavily protected import-substituting industries, such as footwear, leather, rubber, petroleum, industrial chemicals, paints, soft drinks, cement and metal products. While import substitution ensured domestic availability of products previously imported, it distorted industrial development in Kenya by encouraging the creation of excess capacity, low technical efficiency and subsequent inability to penetrate external markets (Bigsten, 2001). At the beginning of the 1970s Kenya faced a foreign exchange crisis, and the government tightened administrative controls of the economy further by means of higher tariffs, stricter import licensing procedures and widespread price controls. These interventions reduced export incentives, and the share of manufacturing exports shrank from 40% of the value of manufacturing output in 1964 to about 10% in the mid-1980s. In spite of the poor export performance, manufacturing in Kenya increased its share of GDP during the 1970s. There was at the same time a rapid expansion of informal manufacturing production of mainly simple consumer goods and services for low-income households. Informality resulted from efforts to avoid high compliance costs and low opportunity costs for self employment due to a mismatch between high labour force growth rates and formal sector employment opportunities.

The Eighties and Nineties: Unstable transition

In the early 1980s there were growing concerns about the distortionary effects of the import-substitution policy, in the form of reduced competition, discrimination of export production, and low

capacity utilization. Several Structural Adjustment Programmes were implemented to deal with these structural problems as well as macroeconomic imbalances. This started an unstable transition towards a more open policy stance. During the 1980s and in the early 1990s the government introduced a series of reforms to support export production. These included export processing zones, manufacturing under bond, an export compensation scheme, and a duty/VAT drawback scheme. There were also a series of international agreements to increase regional trade and collaboration. In 1983 Kenya entered the Preferential Trade Area (PTA) of Eastern and Southern Africa, and in 1993 the Common Market for Eastern and Southern Africa (COMESA) was established. In 1993, most of the administrative controls purporting to protect local industry from competition and consumers from high prices were abolished, including import licensing and foreign exchange controls. The official and the interbank exchange rates were harmonized, and since then the foreign exchange market has been fully liberalized for commercial transactions. Import tariffs became the main trade policy instrument. Tariff structures were simplified gradually following the initial reforms in 1993.

The New Millennium: Beyond Liberalization

By the end of the 1990s the general policy discussion of the problems facing the private sector in poor countries had begun to shift. Two of the world's leading development economists, Joseph Stiglitz and Dani Rodrik, argued that the development policies implied by the Washington consensus were flawed, and the idea that stabilization, privatization, and liberalization were insufficient for growth and development became widespread.¹ Instead, the 'investment climate', which can be thought of as "the institutional, policy, and regulatory environment in which firms operate—factors that influence the link from sowing to reaping" (Dollar et al., 2005) -- was highlighted by many economists and policy makers as the key reason for the poor private sector performance in many developing countries (World Bank 2004). Three development blueprints capture the main thrusts of the policy reforms in Kenya since 2000: the Poverty Reduction Strategy Paper 2001-2004 (PRSP), the Economic Recovery Strategy for Wealth Creation and Employment 2003-2007 (ERS), and Kenya Vision 2030. These documents presented numerous policy proposals aimed at improving the productivity and performance of industry in Kenya. Some of the policy proposals address general concerns about governance and infrastructure, while others address problems specific to industry. Following the World Bank's recent Commission on Growth and Development (2008), our discussion of these proposed, and in some cases implemented, policies will revolve around five factors thought to underlie sustained growth: accumulation, innovation, stabilization, allocation and inclusion.

¹ Rodrik (2007) notes that successful countries have prioritized economic growth, followed market-friendly policies, and maintained economic stability, but the way these general principles are put into practice can vary and need to be context-specific.

Accumulation and Innovation

Private and public investment in Kenya has long been too low to enable the manufacturing sector to take off. Private investment is essential for firms to upgrade their technology and become efficient producers. Public investment, notably in infrastructure, is important to reduce transaction costs. Without significant progress in these areas, Kenyan firms will not be able to compete internationally on a significant scale. This seems to be recognized politically. A major increase in private sector investment is a key goal in Vision 2030, for example. Proposed policy interventions include strengthening SMEs to improve their productivity and innovativeness, boosting science, technology and innovation in manufacturing by increasing R&D investment, increasing key infrastructure namely ports, rail and major roads, and energy distribution systems; and carrying out efficiency-improving institutional reforms. The financial service strategy has focused on improving access to funds for investment through better management of specialised agencies, promotion of access to finance through different capital markets' segments, enactment of a micro-finance bill, and maintaining low interest rates (Kenya, 2008b).

Technological progress is driven by research and development (R&D). While the government wishes to increase R&D in Kenya, this is a very costly activity and requires a solid basis of skills in the country. Realistically, the main source of technological progress in Kenya will be foreign R&D, which will benefit Kenya through spillover effects. Importantly, empirical evidence (based on data from developed countries) indicates that technological spillovers are geographically limited in scope. Countries located far away from the centre of technological advances benefit much less from those than countries close to the centre (Keller, 200x; UK). In this regard, Kenyan firms are clearly at a disadvantage, due to the long distance between Kenya and the technologically most advanced countries. Research also shows, however, that the distance effect has weakened over time, a result attributable to globalisation. This suggests trade is an important conduit of technological spillovers. Indeed, the Commission on Growth and Development argues that increasing trade is a good way of spurring technological progress (World Bank, 2008).

Trade Policy

Access to a larger market and exposure to new technology are two fundamental reasons as to why Kenya's manufacturing sector would benefit from becoming more trade oriented. The core of Kenya's trade policy consists of the agreements with the other members of the East African Community (EAC), the EU and the U.S. There have been significant developments with regards to these relationships in the last decade. In 2005 the EAC introduced a Common External Tariff (CET), which resulted in a reduction in the average applied tariff rate from 16.8% to 13.2%. This is positive. Other

developments are less favourable, however. The CET has implied an increase in tariff dispersion, and it has preserved a pattern of tariff escalation, so that tariffs increase with the stage of processing.² This is intended to protect final stage producers, but this path towards vertical integration is hardly appropriate. Instead Kenya should seek to become involved in global production chains, since it is this type of trade that is growing the fastest. Protecting producers of final goods is no longer a viable strategy to support manufacturing. Kenya should instead seek out its comparative advantages in the new structures of production along the whole production chain.

The three-band CET is generally relatively simple and transparent, but it has an extensive exception regime. There are problems with the phasing in of rules of origin within the EAC customs union, since it implies temporary barriers to imports from Kenya of certain imports. We may also note that several new tariffs were introduced or increased on specific items, while they were reduced on other selected items (Kenya 2008a, p. 24). The tariff policy is still used selectively to support specific industries.

As is well known, non-negligible tariffs on imports results in an anti-export bias as firms find it profitable to focus on the domestic market. To counter this, Kenya has used a range of incentive schemes for exporters in an attempt to rectify the implied bias by the tariffs. Arguably lowering tariffs would be a more direct way of eliminating this bias (World Bank, 2007a, p. 52). Another important effect of trade restrictions on manufacturing performance may be through food prices and wages. Specifically, if the wages of factory workers are based on the cost of obtaining food, they will be higher if food prices are kept high because of import restrictions. Thus, if tariffs imply high food prices the tariffs are effectively undermining Kenyan firms' ability to compete internationally. Real wages in Kenya have been on an upward trend since 1993 without a corresponding increase in productivity. For manufacturing this may seriously reduce its competitiveness.

The EAC, including Kenya, has entered into an interim agreement about commodity trade with the EU, while the negotiations for a full Economic Partnership Agreement (EPA) continue. Since January 2008 the EAC including Kenya has tariff and quota free access to the EU market for all commodities except for temporary restrictions on sugar and rice. This agreement holds for the interim agreement and will also hold for the full EPA. The agreement offers chances to advance areas that are important for Kenya's trade agenda, such as rules of origin, standards recognition, aid for trade, trade diversion, and worker migration. Reductions of Kenyan import tariffs will probably take place during the latter part of the transition period, that is 2015-2023. The EU currently has rather strict rules of origin. Collier and (2007) argue that more liberal rules of origin would be beneficial for the ability of African firms to

² Measures were taken to reduce import duties on raw materials and capital equipment in order to low production costs and enhance competitiveness.

export. Rules of origin are more favourable under the African Growth and Opportunity Act (AGOA), initiated in the U.S. in 2000. AGOA meant that all restrictions on imports in the U.S. were dropped for a range of industrial products, including apparel. Frazer and van Biesebroeck (2008) show that this has had a positive effect on exports from the African countries who were involved. With regard to apparel there was a large and robust impact on imports to the U.S., and the impact on exports was the largest in Kenya. According to the World Bank, AGOA has led to the creation of new jobs and exports in Kenya (World Bank, 2007a, p.61).

Policies for Better Infrastructure

It is often argued that the poor investment climate in Africa results in high transaction costs and particularly disadvantages the manufacturing sector and its ability to export, because manufacturers are intensive users of investment climate services (Collier, 2000). This is problematic, because exporting may present a promising route to growth and development. In Kenya, improving the infrastructure is high on the political agenda. Recent policy actions in transport and communications have included privatization of Telkom Kenya, contracting-out management and operations of Kenya Railways, strengthening management of ports, modernising container terminals, port equipment and facilities, and privatising selected operations of Kenya Ports Authority. The ERS contained proposals for updating road designs and specification, make roads and other civil engineering works more cost effective, deepen the control of the quality of roads during construction, maintenance and rehabilitation, duelling the Mombasa-Malaba highway, use an East African Road Network Project to develop internal roads, improve the quality of rural access roads by implementing the Roads 2000 programme and construct by-passes to decongest traffic in the cities of Nairobi and Mombasa. Policies to improve rail transport have included privatising Kenya Railways. In order to improve air transport, the government under the ERS sought to upgrade smaller airports to make them capable of accommodating medium range jets, privatise commercial and non-regulatory airport services and modernize the management of air traffic. On marine transport, the port of Mombasa was to be converted to a land lord port and complemented with a range of new facilities.

On energy, the main recent policy step has been to strengthen of the Rural Electrification Programme, and increasing private sector participation in generation, transmission and distribution. Kenya was also to expedite implementation of planned generation plants and explore alternative sources of power. Policy proposals targeting telecommunications included the restructuring of Telkom Kenya to improve performance prior to privatisation, licensing of four additional internet gateway service providers and a third mobile operator (in addition to Safaricom and Celtel) and liberalise use of VSAT services. A whole range of reforms were instituted to improve the water and sanitation services, including the encouragement of private sector participation in financing and management of water and sanitation services.

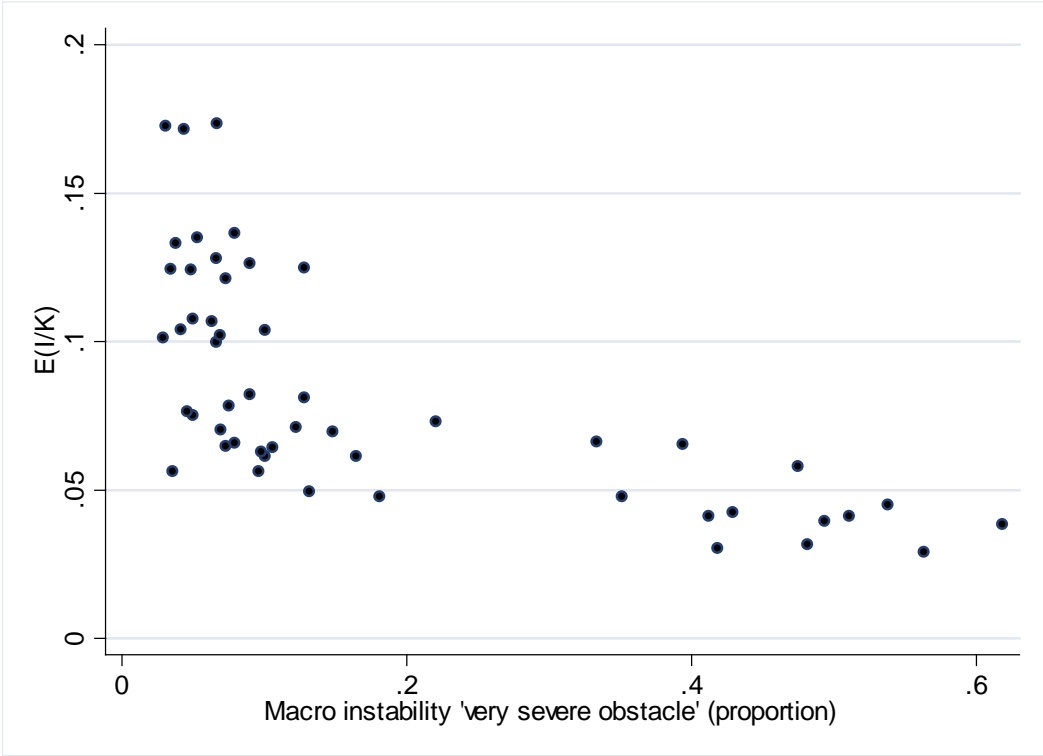
Improved infrastructure is thus a major policy objective, but so far the results have been modest. A recent budget strategy paper (Kenya, 2008b) reports that there has been considerable progress in the development of roads and other infrastructure, but that very much remains to be done, not least when it comes to maintenance of existing infrastructure.

Stabilization and Political Uncertainty

Most economists agree that a stable macroeconomic framework is important for private sector growth. This is especially true for the manufacturing sector, where irreversible investments combined with high uncertainty may result in firms postponing their investments until confidence in future profitability is restored (Dixit and Pindyck, 1994). Impressionistic evidence on the association between investment and instability is provided in Figure 1. This graph, based on firm-level data for Kenya's manufacturing sector from 2007, shows how average investment rates and perceived macroeconomic instability across regions, categories of firm size, and manufacturing sub-sectors are correlated. There is a clear negative relationship between investment and perceived macroeconomic instability.

Figure 1.

**Investment and Perceived Macroeconomic Instability:
Impressionistic Evidence from Kenyan Survey Data, 2007**



Note: The data were collected as part of the World Bank's Investment Climate Survey in Kenya in 2007. Each data point in the graph represents an average across firms in a particular location, size category and manufacturing industry. The vertical axis shows average investment rates, i.e. investment expenditures divided by the value of the capital stock. The horizontal axis shows the proportion of firms in a particular location-size-sector cell that rate macroeconomic instability as a "very severe obstacle".

Even though reforms with regard to monetary and budget policy have improved the Kenyan setting, lack of stability remains a significant problem in the country. There are both external and internal reasons for this. Most significant at present is likely the uncertainty over how and when the developed world is to emerge from the current financial crisis, which means future demand for exports is difficult to predict. Of course there is only so much a poor African country can do to manage instability caused by global events. Traditional stabilization policies, focussing on inflation and exchange rates, do play their part, but in the context of the global financial crises these instruments help little to reduce uncertainty. That is true, of course, for most countries. For Kenya, however, stability is further rocked by the home-grown political problems, recently evidenced by the turmoil and clashes in January 2008 and beyond, following the Presidential elections. These events will have caused significant damage to investor confidence. Real options models of investment predict that the response of investment to demand growth is weak if uncertainty is high (see e.g. Bond, Bloom and Van Reenen, 2006). This suggests that when the global business cycle recovers and exports markets start to grow again, firms in Kenya will be slower to respond than firms in more politically stable countries.

If the political uncertainty persists, it is hard to see how Kenya will be able to achieve the ambitious growth rates set out in the policy documents discussed above. Some measures aimed at tackling a range of governance problems hindering industrial development have been implemented. In May 2003 the Parliament passed the Anti-Corruption and Economic Crimes Act that led to the creation of the Kenya Anti-corruption Commission charged with the responsibility of dealing with economic crimes and corruption. A second legislation was the Public Offices Ethics Act that spelt out codes of conduct for public servants. Other governance-related administrative and policy reforms with a bearing on industry include establishment of a taskforce to review contracts for government jobs for which payment were still pending, programming of legislation of governance-related bills including Public Procurement and Disposal of Public Assets and Financial Management and Accountability Bill.³ The ERS suggested measures to facilitate the creation of alternative dispute resolution mechanisms (such as arbitration) and ensuring that these are entrenched in the law and establish regional commercial courts for expeditious determination of commercial disputes. The government also undertook to review industrial and labour relations frameworks to support dispute resolutions, encourage productivity and new investment, and prepare an export development strategy to address the necessary measures for diversification of export markets and reduce the likelihood of unilateral decisions.

³ The establishment of a commission to investigate and report on the Goldenberg scandal to pave the way for prosecution and recovery of public funds was also part of the raft of proposals for dealing with governance challenges.

Implementation of Policies: A Trade-Off between Efficiency and Equity?

We end this section with a brief discussion of some potentially difficult policy choices for Kenya. To improve the investment climate and reduce transaction costs facing manufacturers, large public investments are required. However not everything can be done at once. What are the policy options and the priorities? A common argument in the current policy discussion is that targeted and intensive policy measures may be more effective than spreading out reforms thinly across a wide range of activities. This argument was widely discarded in the 1990s on the grounds that you can't "pick winners", but appears to be back in vogue now. In Kenya, there is for example talk of supporting the development of niche products in which the country has a global competitive advantage, such as the agro-based industries. In the medium term the government wishes to promote the establishment of special economic clusters, as well as small and medium sized industrial parks, to support manufacturing (Kenya 2008b, p. 14). There is clearly a potential tension between these types of steps which are motivated by efficiency arguments and equity concerns. For example, there is an obvious conflict between attempts to decentralize and the clustering strategies, especially in the short term. It may therefore be politically very difficult to implement policies that, while raising incomes in certain sectors or areas, are seen to increase inequality. In Kenya, the rural-urban aspect of development has long been a contentious issue, and given the clashes following the December 2007 elections, the importance of regional equity and inclusiveness is clearer than ever. Moreover, most of the poor live in rural areas and so if manufacturing growth is to impact on poverty, the sector needs a stronger presence in rural areas than presently. Some policy steps have recently been taken to facilitate this. For example, the government has introduced tax incentives for investors locating outside the major cities to increase employment opportunities in rural Kenya. The government also plans to improve infrastructure in rural areas to attract local and foreign investors. The policy proposals designed under the PRSP included decentralization of justice and the creation of commercial courts away from Nairobi. This would make it easier for manufacturing firms outside Nairobi to enforce contracts and resolve other types of conflicts with suppliers or buyers, thus reducing transaction costs in such areas.⁴ Overall, however, the policy maker is walking a fine line here. Measures designed to stimulate the production of a wide range of manufacturing goods in many parts of the country may enhance equity but result in low efficiency; narrow policy steps may have the opposite effects.

⁴ Survey data on Kenyan manufacturers indicate that entrepreneurs have a hard time dealing efficiently with business disputes. There is little reliance on more formal dispute resolution avenues such as lawyers and courts of law. Court cases are protracted and outcomes are uncertain even when the evidence is compelling. As a result, when faced with business disputes, most manufacturers either use negotiators or arbitrators.

3. Performance and Constraints to Business

In this section we draw on official aggregate data and firm-level survey data in order to review the performance of the Kenyan Manufacturing sector, and to identify the main constraints to business.

Macro Data on Growth, Employment and Capital Formation

After a long period of virtual stagnation the Kenyan economy went through a strong phase over the period 2003-2007, as the rate of economic growth accelerated up to 7 per cent (see Table 1). During the same period TFP in manufacturing increased by as much as 20% (World Bank 2007b). Aggregate capital formation increased up to 19.5 per cent, which is high by Kenyan standards, but of course pales in comparison with those of its Asian competitors. And it is a long way away from the long-term target of investments of 30% of GDP. The positive development was (temporarily) halted by the post-election conflicts in 2008. Manufacturing growth followed more or less the same pattern as GDP, which meant that its share of GDP remained at slightly below 10 per cent of GDP. There has thus not been any major take-off for manufacturing production in Kenya.

Table 1: Economic indicators 2000-2007

	2000	2001	2002	2003	2004	2005	2006	2007
GDP growth (at constant 2001 prices) (%)	0.5	4.5	0.5	2.9	5.1	5.8	6.4	7.0
Gross fixed capital formation share of GDP (%)	16.8	18.2	17.4	15.8	16.3	18.7	19.1	19.5
Manufacturing growth (%)	1.0	1.6	0.1	6.0	4.5	4.7	6.3	6.2
Manufacturing share of GDP (%) (current prices)	10.1	9.9	9.7	9.7	10.9	10.5	10.3	9.7
Wage employment formal ('000)	1678.4	1677.1	1699.7	1,727.3	1,763.7	1,808.7	1,859.7	1,907.3
Informal employment ('000)	4,150.9	4,624.4	5,086.4	5,717.4	6,168.2	6,628.3	7,048.7	7,475.6
Manufacturing quantum index	281.4	283.6	287	290.6	310	334.1	353.5	381.5
Manufacturing employment ('000)	218.7	216.6	229.7	239.7	242	248.7	254.9	261.3
Index manufacturing outp/empl (year 2000=1)	1	1.018	0.971	0.928	1.057	1.0487	1.032	1.053

Sources: Economic Survey (Kenya, 2003; Kenya, 2008), Statistical Abstract (Kenya, 2003; Kenya, 2008), Central Bank of Kenya Annual Report (Kenya, 2008), Central Bureau of Statistics homepage. Kenya National Bureau of Statistics Gross Domestic Product 2nd quarter 2008.

The growth of overall formal employment has been very slow, while there has been an explosion in (estimated) informal employment. This shows that the formal sector is not able to absorb the increase in the labour force and the outflow of labour from the agricultural sector. The share of formal manufacturing employment in total formal employment increased over the 7 years from 13.0 per cent to only 13.7 per cent. We may note, though, that the number of manufacturing workers in the informal sector is several times larger than the number of people in formal jobs. Still, to get some indication of the development of labour productivity in manufacturing we compute a measure of output (the quantum index) per formal sector employment (Table 1). These estimates suggest that the productivity increased by only 5.3% over the period. This is an extremely modest level compared Asian emerging markets, but it is poor also compared to South-Africa, which had a labour productivity growth of 4 percent per year between 1988 and 2003 (Harding and Rattsö, 2009).

The growth of the sub-sectors in manufacturing since 2003 is shown in Appendix A. For the textiles and clothing sectors AGOA meant that there was a rapid expansion of exports to the US, but there was a concern that the preference obtained would be eroded with the abolition of the MFA in 2004. It is noteworthy, though, that at least clothing production has continued to increase after 2004, so the concerns for the case of Kenya seems to have been exaggerated.

Investment peaked at 25.1% of GDP in 1978, but then followed a long period of lower investment. Bigsten and Durevall (2008) have measured the availability of three factors of production in Kenya between 1980 and 2000 and show that over this period capital investments in Kenya were not large enough even to maintain the capital/labour-ratio. It was thus even harder at the end of the period to achieve a shift out of labour intensive sectors (including informal manufacturing) toward more capital intensive formal manufacturing. This also explains why the labour that has been pushed from the land has had to be absorbed by the low-capital informal sector. There was a recovery from 2003 onwards, making the investment rate go up to close to 20% of GDP in 2007. Still, by international comparison, Kenya is not a high investment economy. The growth in investment in recent years has been strong in transport equipment and machinery and equipment, which seems to indicate increased investment in manufacturing as well.

The government has the ambition to try to attract more foreign direct investment, but so far it has not been very successful. There was a huge increase in FDI in 2007 with inward FDI equivalent to 13.1% of GDP, while the normal inflow before that was less than one per cent of GDP. The big increase was mainly due to a telecom privatisation and investments in railways (UNCTAD, 2008), while not much has happened in terms of manufacturing FDI.⁵

Large Firms are More Productive than Small Ones Because of Higher Capital Intensity

Using firm-level data we can investigate how firm performance varies across firms within the manufacturing sector. Table 2 shows sample averages of value-added per employee and capital per employee, both in natural logarithms, for 2000 and 2003.⁶ To highlight the role of firm size we distinguish between three size categories: small (10-49 employees); medium (50-99 employees); and large (100+ employees). It is clear from these data that labor productivity increases with firm size, a rather general finding for African manufacturing (see e.g. Lundvall, 1999, for evidence on Kenya 1992-94; Söderbom and Teal, 2004, for evidence on Ghana). One frequently cited reason for this result is that large firms are much more capital-intensive than small firms, so that each worker in large

⁵ The FDI inward stock in 2007 stood at 1892 million USD, up from 668 million USD in 1990 and 931 in 2000.

⁶ Value-added is defined as the value of output minus the value of inputs excluding labor and capital. All financial variables are expressed in constant USD 2002.

firms has access to more machinery than do workers in small firms. The data in Table 2 are clearly consistent with this explanation. The figures for 2002, for instance, imply that the capital-labor ratio among large firms is about 80 per cent higher than among small ones.⁷ Investing in equipment is therefore crucial in increasing the productivity of labour. Further statistical analysis of the firm-level data indicates that returns to scale in the sector are either constant or mildly increasing.⁸ Productivity tends to be higher in Nairobi than in other areas, and in the food sector compared to other manufacturing sub-sectors. Other firm characteristics, such as foreign ownership and firm age, are typically not associated with large productivity differences.

Table 2: Firm Size, Labor Productivity and Capital Intensity

	log Value-Added per Employee		log Physical Capital per Employee	
	2003	2000	2003	2000
Small - 10-49 Emp.	8.13 [49]	8.12 [56]	8.94 [49]	8.97 [56]
Medium - 50-99 Emp.	8.58 [27]	8.62 [22]	9.20 [27]	9.58 [22]
Large 100+ Emp.	8.90 [60]	8.79 [53]	9.54 [60]	9.90 [53]
All Categories	8.56 [136]	8.47 [131]	9.26 [136]	9.45 [131]

Note: The table reports sample means of log value-added per employee and log physical capital per employee. The figures in [] show the numbers of observations.

Source: Authors' calculations based on firm-level survey data.

Which Types of Firms Invest in New Machinery and Technology?

Firm-level data reveal big differences in investment patterns across firms. Table 3 is based on data collected in 2007 as part of the World Bank's Investment Climate Analysis (World Bank, 2007b). The table shows mean values of a range of firm-level characteristics, distinguishing between firms that have made at least some new investment in the last year and firms that have not (column 1), and between firms that have recently introduced new technology and those that have not. It is clear that exporting, having ISO certification, and being part of a global production network are much more common activities amongst investing firms. These numbers indicate a strong positive association between operating in the international market and investing. We see exactly the same pattern when we look at introduction of new technology. Unsurprisingly, the more dynamic class of firms (with more

⁷ Calculation: $\exp(9.54-8.94) - 1 = 0.82$.

⁸ This result is obtained by estimating a production function using ordinary least squares.

investment, exports, and international operations) tends to contain larger enterprises than the comparison group. More surprisingly, however, there is no evidence that firms with foreign ownership invest or innovate more than domestically owned firms.

Table 3. How investors and non-investors differ

	1. Bought fixed asset?		2. Introduced new technology?	
	No	Yes	No	Yes
Proportion exporters	0.31	0.39	0.32	0.45
Proportion with ISO certif.	0.05	0.15	0.08	0.28
Proportion part of global production network	0.05	0.10	0.03	0.12
log Employees	2.27	2.54	3.49	4.35
Employees	25.62	50.48	65.81	183.95
Firm age (years)	12.85	19.99	23.90	22.45
Proportion foreign ownership	0.06	0.06	0.18	0.17
Nairobi	0.51	0.62	0.76	0.82
Mombasa	0.21	0.22	0.10	0.12
Kisumu	0.12	0.09	0.02	0.05
Nakuru	0.16	0.07	0.11	0.01
Observations	171	225	171	225

Source: Authors' calculations based on firm-level survey data.

Kenya and the World Economy

Kenya's share of world exports had fallen from 0.085 per cent in 1980 to 0.035 per cent by the year 2000, thus Kenya became increasingly marginalised in the world market during this period (Table 4). Over the same period its share of world GDP fell at a slightly slower rate from 0.066 per cent to 0.040 per cent. However, Kenya's share in world export has increased since 2000 as did its share in the world export of manufactures. In fact, export of goods and services was the fastest growing component of final demand during 2001-2005. The World Bank (2007b, p. 12) finds that Kenya gained in competitiveness 2002-2005. Although there has been some diversification in terms of export destinations, there has not been any significant diversification of Kenya exports in terms of products.

Table 4: Percentage shares of Kenya in world trade and of export in GDP

	2000	2001	2002	2003	2004	2005	2006
Export share of GDP (%)	26.55	26.54	23.87	23.87	26.40	27.95	27.20
Share of Kenya in world exports of goods and services (current US\$) (%)	0.034	0.039	0.040	0.038	0.037	0.041	0.040
Share of Kenya in world GDP (current US\$) (%)	0.040	0.041	0.040	0.041	0.039	0.043	0.047
Share of Kenya in world export of manufactures (%)	0.023	0.023	0.023	0.023	0.023	0.026	

Source: Central Bank of Kenya Annual Report (2008), Economic Survey (2003), World Development Indicators 2008 (World Bank, 2008).

While Kenya has been quite successful in terms of increasing its export of textiles and clothing in the last decade, overall agricultural commodities still dominate Kenyan exports. The government is seeking to support the diversification of exports into labour-intensive manufacturing through its National Export Strategy initiated in 2004. There are also attempts to develop the EAC and to increase trade within the region. Kenya's regional export of manufactured goods consists of rather simple products, where its comparative advantage is mainly that it is an international communications-hub with better transport and communication networks than its partners.

Why Further Expansion of Manufactured Exports May be Challenging

The main constraints to trade expansion in Kenya identified by the World Bank (2007a, p. xii) are "Kenya's commercial and investment climate, i.e. the cost of doing business, the weakness of the legal framework, licensing, complex rules and regulations for exports, and the poor quality and high cost of business services in Kenya". It is also noted that the state of infrastructure and utility services hampers exports, e.g. the high costs of telecommunications services, power, transport plus poor trade logistics and standard compliance. The inefficiency of the Port of Mombasa, including the slow pace of custom clearance, is a problem. The government has initiated a Private Sector Development Strategy and an Investment Climate Action Plan, and a Regulatory Reform to deal with these challenges. The latter has led to the removal of many licences that have found to be unnecessary and inefficient.

Much of the growth of world trade in recent years has been in the form of international production sharing, but here Kenya and most of Africa is lagging behind. There has been some expansion of this type of trade between Kenya and South Africa, though. Kenya has recently become Africa's third largest importer of components, so there are signs of improvement in this area (World Bank, 2007a, p. 22). We may also note that Kenya's export of machinery and transport equipment had by 2007 increased to 4.5 per cent of its exports (UN, 2008), more than doubling its share in 4 years. Still, Kenya's export profile continues to be concentrated to commodities and raw materials, and it is thus not yet developing along lines similar to those of the emerging economies in Asia. Kenya still has a

low level of intra-industry trade, which means that the country as yet is not well integrated into outsourcing operations. We note that the escalating tariffs in Kenya – favouring vertical integration rather than outsourcing - are likely counterproductive if the country wants to move towards participation in the new international division of tasks.

One reason it is hard for Kenyan firms to become a reliable supplier of inputs in international production chains is that the domestic supply chains are inefficient and uncertain. This manifests itself for example in the sizeable inventories held by Kenyan firms. On average, manufacturing enterprises hold on average 47 days of production in stock of their most important inputs (World Bank, 2007b, p. 46). The time to clear customs has gone down significantly in recent years, but the 12 days it now takes on average is still high by international standards. This is not only a time cost, but predictability is also a concern. If firms are to be able to be part of a supply chain, where timely deliveries are crucial, they must know how fast they can receive inputs and deliver outputs.

The Labour Market: Informal Employment Continues to Grow

Total employment has increased fast, but most of it has been in the informal sector (Table 1). Formal employment has only increased slowly. The lion’s share of the manufacturing work force is in the informal sector. There are some drawbacks with being an informal producer, e.g. getting access to finance and land can be difficult. On the other hand it reduces the burden of taxation, inspections and licensing. Obviously many entrepreneurs feel that on balance the benefits of informality outweigh the costs.

Table 5: Real average wage earnings per employee (2003-2007)

(Thousands of KSh per annum)	2003	2004	2005	2006	2007
Manufacturing	83.5	90.2	90.5	89.3	86.0
Private sector	159.7	177.7	186.7	191.3	190.2
Public sector	144.2	154.4	149.1	145.7	143.3

Source: Economic Survey (2008), p. 75.

Real wages began to increase in the mid-1990s and their increase continued, longer in the private than the public sector (Table 5). We note that manufacturing real wages peaked in 2005 and then declined, and we also note that they are substantially lower than in the whole of the private (and public) sector.⁹ This may suggest that manufacturing labour is relatively cheap in Kenya, but we must note that we are not controlling for skill composition here. Still, there are estimates of unskilled labour costs which

⁹ Real wages in agriculture and mining are lower than those in manufacturing, but wages in utilities and services are much higher.

have been found to be relatively low in Kenya compared to for example China. However, the World Bank (2007a, p. 4) believes that the costs of unskilled labour in Kenya are not matched by labour productivity to make Kenyan firms competitive with those in Asia. Interestingly, few firms in Kenya report that they are concerned with the access to skills. Only 8.9% are concerned in Kenya, compared with for example 30.7% in China and 35.5% in South Africa (World Bank, 2007b, p.78). This could be due to good access to high quality labour, but it can also be due to the fact that firms have chosen to adjust their input-mix of product choice away from activities requiring high skill labour. In any case, the main constraints to competitiveness in Kenya appear related to transaction costs rather than to lack of skills.

Transaction Costs and Constraints to Business

The indirect costs of doing business in Kenya have been reduced in the last few years, but they still are in the range 13-20% of total sales, which is quite high. The level of indirect costs computed for Kenya in 2006 was 20.1% of sales, which can be compared with those of China at 6.2% and South Africa's 3.6%. Kenya's costs are higher than those of neighbouring Tanzania and Uganda (World Bank, 2007b, Table 2.6). In Kenya this was made up of 7.1% for electricity,¹⁰ 3.6% for bribes, 2.6% for production lost in transit, 3.9% for theft robbery or arson, and finally 2.9% for security costs. The World Bank (2007a, p. 32) further notes that "as a result of dilapidated infrastructure and complicated procedures, especially at Mombasa port, trade facilitation indicators for Kenya are poor." The country was also ranked as the least logistically friendly of 70 countries in the 2004 Logistics Perception Survey (World Bank 2007a, p. 33). Air logistics are good, though, and the road transport and forwarding industries are among the best organized in Africa (World Bank, 2007a, p. 36). In face-to-face interviews with entrepreneurs and company owners, tax rates, access to finance and corruption are rated as the top three problems.

Taxes

Firms in Kenya pay more than half of their corporate income in taxes, with a profit tax rate of 32.5%. Taxes have been reduced in recent years, but it is still estimated that firms in Kenya are required to pay 50.9% of corporate income in taxes (World Bank, 2007b, p. 32). This is high by international standards. Despite the fact that the number of tax payments has been reduced in recent years, firms feel they pay a lot and describe the procedures involved as cumbersome and time consuming. On the positive side they find that VAT refunds function fairly smoothly.

¹⁰ Kenya's electricity prices are among the highest in the region (World Bank, 2007a, p. 46). Estimates of productivity determinants show that electricity losses have the largest impact. (World Bank, 2007b, p.101)

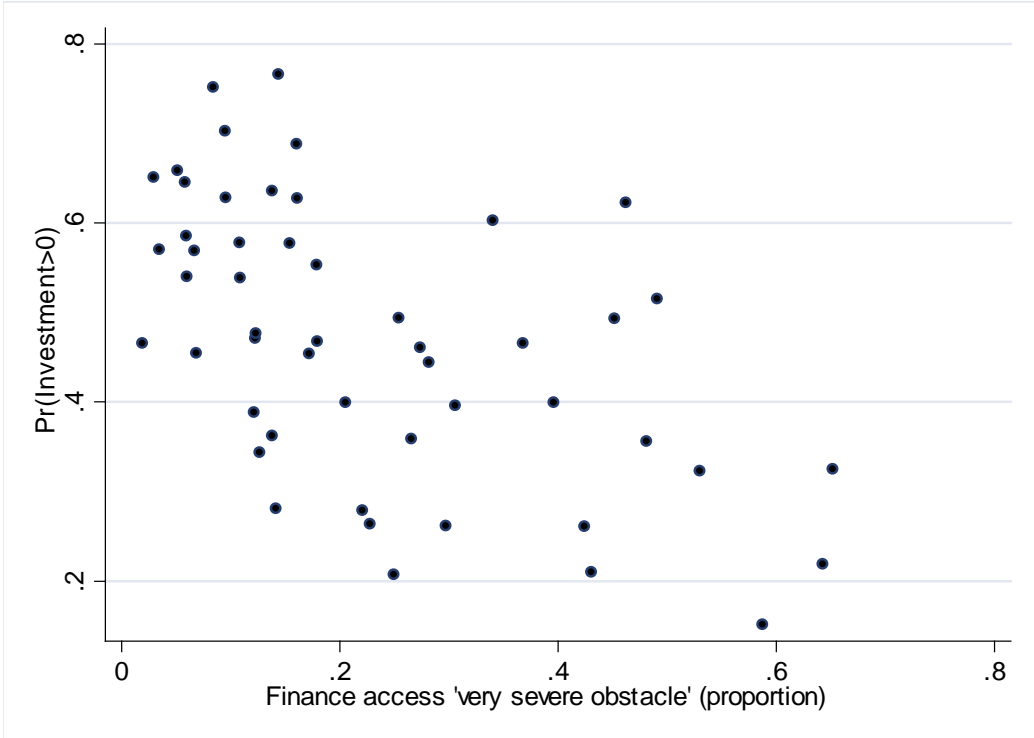
Finance

Costly and inaccessible external financing is often argued to be a key constraint for the growth and competitiveness of enterprises in developing countries. The Africa Competitiveness Report 2007 (World Economic Forum, 2007), for example, argues that access to finance remains a “critical constraint”, and that “improvements in the regulatory environment (...) represent a necessary step for unleashing the potential impact of finance on firm competitiveness in Africa.” (World Economic Forum, p.xi). Indeed, data based on interviews with entrepreneurs, senior managers and CEOs in African companies suggest that finance is a severe and widespread constraint: across all 34 African countries surveyed, 50% of the respondents indicate that finance is a “major or very severe” constraint; and in Kenya, more than 70% said so (World Economic Forum, 2007).

In recent years, the lending regime in Kenya has improved, resulting in lower direct costs of credit and with many firms having good information available. This is reflected in the survey data, which indicate that the proportion of firms feeling financially constrained has recently fallen. Still, many firms still rate finance as a serious obstacle, and firm size remains an important determinant of access to finance. Small firms in particular have a hard time accessing credit for start-up and expansion. Of microenterprises only 31% of loans obtained were from private commercial banks, while the corresponding number for the remainder of firms was 82. Still, Kenya firms finance about 51% of working capital and 59% of new investment with retained earnings.

Using the Kenyan survey data collected by the World Bank (2007b), we can assess whether there is any evidence that investment is lower amongst firms that operate in environments where credit appears particularly problematic. We begin by estimating the proportion of firms, belonging to a certain sector, size group and location, for which a given constraint is “very severe”. We then investigate how this variable – referred to as quality of finance - correlates with observed average investment across locations, size groups and sectors. Figure 2 illustrates the relationship between average investment in different sector-size-location cells (on the vertical axis), and our quality of finance variable (horizontal axis). There is a very clear negative relationship between location-sector-size investment and access to finance in the data: sector-size-location cells with relatively *high* proportions of firms indicating financing is a very severe obstacle have relatively *low* proportions of firms recording positive investments.

Figure 2. Investment and Access to Finance



Note: The data were collected as part of the World Bank’s Investment Climate Survey in Kenya in 2007. Each data point in the graph represents an average across firms in a particular location, size category and manufacturing industry. The vertical axis shows the proportion of firms with positive investments. The horizontal axis shows the proportion of firms in a particular location-size-sector cell that rate finance access as a "very severe obstacle".

Corruption

Corruption remains a fact of life in Kenyan manufacturing. The survey data collected by the World Bank (2007b) indicate that about 75% of firms have made informal payments to “get things done”. A similar survey in 2003 reported that manufacturing firms spent 7.5% of the total value of their annual sales on unofficial payments. Those who succeeded in getting government contracts paid 14.2% of the contract value as kick-backs. Licenses and utilities were all subject to these unofficial payments. In total, these firms lost more than 14% of their total annual sales to corruption, theft and arson. See Kimuyu (2007) for further details.

Regulation and Red Tape

In an effort to cut red tape, a process of reform of the licensing system was started in 2006. As a result, the number of licenses has fallen. While this has started to reduce the burden of licensing, corruption in obtaining licenses is still high in Kenya and partly accounts for the continued existence of some of the unnecessary licences. Kenya is now the best performer among the countries that the World Bank (2007b, p. 59) compares, in terms of the number of procedures, time and cost to deal with new

licenses. Still, even if Kenya has seen some improvements, much remains to be done to make the environment attractive for investors. We may also note that several new tariffs have been introduced recently, and some existing ones have been increased, while others have been reduced (Kenya 2008a, p. 24). Tariff policy is clearly still used selectively to support specific industries.

4. Policy lessons

The world economy has become more and more integrated, and many developing countries have been able to benefit from this and break into the export market. So far, outsourcing has largely bypassed Kenya, however. Kenya has certainly liberalized its foreign trade regime, but the export response as far as manufacturing is concerned has been limited (there has been some success with regard to, for example, horticulture and flowers, though). Still, it is hard to know what the counterfactual scenarios without liberalisation would have been. Maybe the reforms at least set in motion a process of restructuring, preparing the ground for future export expansion. The slow growth of the sector may hide the replacement of firms set up behind high tariff walls with firms that are viable in an open environment. Since there is evidence that there are learning externalities in African manufacturing (Bigsten et al., 2004) it is particularly important that this sector grows.

To break into export markets Kenyan firms can benefit from market advantages provided by richer countries. For example, AGOA has provided one form of advantage that has been very beneficial for Kenyan apparel production. Trade agreements with the EU have not been as effective as presumed, since it has tough and complicated rules of origin. The EU had the idea that one should seek to stimulate the production of complete products, but the situation has changed in recent decades. Competition in international markets is less and less in terms of products and more and more in terms of tasks. Therefore the rules of origin become particularly critical. It is important that this is taken into account in the (slow) ongoing negotiations about an EPA with the EU.

To speed up growth in Kenya's manufacturing sector, substantive investment is required. Why has investment been so low in Kenya, for so long? Insufficient credit may be part of the story (especially for small firms), but is, we think, unlikely to be the whole answer. Evidence based on survey data, for example, indicates that the share of profits invested is very low in African manufacturing firms (Bigsten et al., 1999). If external financing were so expensive, why then don't the firms invest more once they have access to internal capital? Another possible explanation is the comparative advantage story, suggesting that Kenya is a resource abundant country that does not have its natural comparative advantage in manufacturing. There may be some validity in this argument and the expansion of horticultural and flowers export is consistent with this argument. But comparative advantages are not given once and for all. Leamer (1987) argues that countries change their pattern of specialization as

their factor abundance changes. The normal pattern identified in the paper is one of capital deepening, which leads to a change in the product mix towards more capital intensive goods. So Kenya would be able to shift towards manufacturing if it manages to have high enough investments.

So again, a key question is why investors (domestic and foreign) don't invest in Kenya to any large extent. We think it is fair to say that the explanation is essentially internal. Export markets for Kenyan manufacturing are quite open, even if there are technical issues with regard to import content of products and the like. Still, we think that the main limitations are first the perception of the environment for investors as risky and second the rather high costs (relative to productivity) of doing business in Kenya. One explanation as to why manufacturing investment has not been forthcoming is that much of foreign investment and international trade now is related to outsourcing, and when that is the case timely delivery is absolutely essential. This is an issue in Kenya. The modern system requires goods to arrive when they are need as an input in a product or as goods to go into a marketing campaign that starts a certain date. If African countries cannot set up their systems so that this is possible, they will have a hard to enter a large share of the modern production structure. To get into international value chains firms in Kenya need to be able to meet international standards. Programmes to strengthen competence in this area would seem important.

It should also be possible to design policies that would enable Kenyan firms to better take advantage of externalities. Bigsten et al. (2008) report empirical results suggesting that agglomeration economies matter for manufacturing in the case of Ethiopia. Locating close to other firms tends to have a positive effect on productivity and competitiveness. Similar mechanisms may hold for Kenya (although we are not aware of any empirical work on this). This may suggest that for example export processing zones can have a positive effect. For EPZs to work well, however, they need good management, good infrastructure and efficient supporting institutions. Kenya has pursued an EPZ policy to cluster firms and to make export production easier. It has established 43 EPZs, but since they only contain about 72 firms there is only 1.5 firms per cluster on average. And this is hardly enough to create cluster economies. Location policy may matter as we suggested. Building of modern industrial areas may make sense, for example.

Overall, Kenya needs to address both cost and risk issues if it is to become an attractive arena for international investor in manufacturing. It seems reasonable to hypothesize that money is available if the country can offer stability, good institutions, as well as efficient and cheap export infrastructure. One may ask whether manufacturing production should receive extra subsidies. It seems reasonable at least to argue that it would make sense to provide extra support for attempts to break into the export markets, since there is evidence that firms improve productivity and competitiveness as a result of exporting ('learning-by-exporting'; Bigsten et al., 2004). In the medium and long term, it may also

make sense to support the supply of technical and other relevant skills (inducing R&D) in specific areas. This could be done within firms or in external institutions. Whether Africa will manage to break into the world markets will ultimately depend on the cost productivity trade-off. As costs go up in Asia, Africa may become a relatively more attractive location for investors, if it can keep costs under control.

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Appendix A: Quantum index of manufacturing production (1976=100)

INDUSTRY	2003	2004	2005	2006	2007
Meat and Dairy Products	89.8	104.8	118.7	125.3	153.4
Canned Vegetables, Fruits, Fish, Oils and Fats	405.3	466.7	469.2	556	680.5
Grain Mills Products	177.7	193.3	231.2	253.6	246.9
Bakery Products	284.3	185.1	202.6	212.8	204.6
Sugar and Confectionery	218.9	250.9	237.7	232.4	251.3
Miscellaneous Foods	250.8	269.1	271.1	257.6	295.4
Food Manufacturing	211.1	233.5	235.6	239	268.9
Beverages	176	200.6	232.6	259.5	314.7
Tobacco	126.7	142.6	195.2	273.5	324.8
Beverages and Tobacco	170.3	193.8	229.2	263.8	319
Textiles	106	89.3	97.1	102.3	104.1
Clothing	188.1	187.3	269.4	379.1	396.6
Leather and Footwear	80.4	75.2	116.6	124.4	124.1
Wood and Cork Products	51.2	40.5	39.2	39.2	39.5
Furniture and Fixtures	55.1	56.9	57.6	58.1	58.7
Paper and Paper Products	362.7	336.3	427.5	414.2	403.4
Printing and Publishing	428	422.4	419.8	286.8	295.1
Basic Industrial Chemicals	145.8	150.1	123.1	108.8	78.2
Petroleum and Other Chemicals	865.7	982.7	947.6	1027	1237.3
Rubber Products	712.8	707.3	760.3	682.3	895.3
Plastic Products	969.3	972.9	1270.5	1656.3	1674.8
Clay and Glass Products	1142.7	1172.9	1472.8	1836.1	1791.9
Non-Metallic Mineral Products	190	166.9	187.5	222.2	237
Metallic Products	238.2	246.8	257.9	282.1	314.5
Non-Electrical Machinery	87.1	87.1	87.9	90	83
Electrical Equipment	216.8	259	268.8	245.5	180.2
Transport Equipment	483.5	1109.6	975.7	1281.7	1309.9
Miscellaneous Manufactures	1148.2	1052	1058.6	1442.6	1412.7
TOTAL MANUFACTURING	290.6	310	334.1	353.5	381.5

Source: Economic Survey 2008 (Kenya, 2008).