

## **What to Do with the Informal Sector?**

*Arne Bigsten, Peter Kimuyu and Karl Lundvall\**

*Almost all informal firms in the Kenyan manufacturing sector are managed by Kenyans of African origin. Formal enterprises are run by Kenyans of both African and Asian origin. These three groups are distinct in terms of experience, productivity and access to finance. Asian formal firms are the most efficient, while there is no significant productivity difference between informal and formal African firms. There are thus weak incentives for African informal firms to become formal. At the same time, Kenya needs higher investments and larger exports to achieve economic take-off, and this can only be achieved through an efficient formal sector. Therefore policy should aim to integrate the sectors by improving infrastructure, capacity-building, credit delivery, and supporting networks.*

### **1 Introduction**

In his classic article on the dual economy model, Lewis (1954) treated the small-scale, traditional sector as a reservoir of surplus labour. The sector was expected to shrink and eventually to disappear as the modern sector absorbed the labour surplus. The ILO report (1972) on employment in Kenya argued, on the contrary, that the informal sector could provide a basis for employment creation and growth even in the longer term.

Three decades later we can conclude that the Kenyan informal sector<sup>1</sup> has grown rapidly, and the government estimates suggest that as many as two-thirds of urban employees worked in the informal sector in 2002 (Government of Kenya, 2003a, b).<sup>2</sup> The informal share in manufacturing employment is put even higher, at 83%. The growth of the informal sector in recent years (1998-2002) is estimated to have been 11% per year. This may be an exaggeration reflecting improved statistical coverage, but the informal manufacturing sector has certainly grown much faster than the formal manufacturing sector. The estimated growth rates of the two sectors are 10.5% versus 1.5% per year for 1998-2002.

The development of Kenya's formal sector has been hampered by low demand, poor infrastructure, lack of human capital, and generally poor governance. Since about 1980, Kenya's labour force has grown faster than its capital stock (Bigsten and Durevall, 2004). The lack of capital has necessitated a shift towards capital-saving, informal production. The industrial structure has remained dual, with a mass of very small firms

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\*Arne Bigsten (arne.bigsten@economics.gu.se) and Karl Lundvall are at the Department of Economics, Göteborg University, Box 100, 405 30 Göteborg, Sweden. Peter Kimuyu is at the Department of Economics, University of Nairobi.

1. The concept 'informal sector' was coined in the early 1970s (Hart, 1973).

2. In 1978 about 20% of urban labour was engaged in the informal sector according to an estimate presented by Crawford and Thorbecke (1978). The degree of comparability between this estimate and recent government estimates is unclear, however.

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working with very limited capital and using simple technologies, and a limited number of medium and large-scale firms. The bulk of the small firms are informal, thereby evading taxation and regulations. The majority of the urban labour force is employed in this sector. This dual industrial structure is typical of Africa, and there has been an extensive discussion about 'the missing middle'. The key question is why small firms tend to remain small, which leaves a gap in the size distributions of firms.<sup>3</sup>

An important debate concerns the character and role of the informal sector. Harriss (1990) suggested a classification of the various views on the sector along two dimensions. First, does the sector have a growth potential or not, and secondly, is it autonomous or integrated with the formal sector? For the pessimists, the sector is either marginalised or exploited. For the optimists, it is either dual or complementary to the formal sector. Ranis and Stewart (1999) extend this discussion and present a model where the informal sector is considered to be heterogeneous, so that firms can be either productive and dynamic or stagnant and traditional. They go on to analyse the factors that determine the growth of the informal sector, which would have to be based on the dynamic segment of the sector. A key factor is the degree of integration with the formal sector. The greater this is, the better the growth potential is assumed to be.

The sheer size of the informal sector makes it a fundamental development issue in Kenya as well as in every developing country where it has grown to these proportions. In a context of accelerating migration from rural to urban areas, population growth, congestion of cities, deteriorating health standards and so on, the character and potential of the sector, either as a poverty trap or as a seedbed for new enterprises, are paramount.

Many aspects of informality have been highlighted in various academic disciplines during recent decades. In this study, we adopt an economic perspective and present empirical evidence from informal and formal small manufacturing firms in Kenya. The Regional Programme for Enterprise Development data set which is used has been analysed quite extensively. The formal-informal dimension was investigated in some of the papers included in the RPED-Kenya book (Bigsten and Kimuyu, 2001). In particular, Lundvall, Ochoro, and Hjalmarsson (2001) showed that informal firms are less technically efficient than formal ones in all the models applied. Apart from Kenya-specific applications, there has been a range of cross-country studies analysing several RPED country data sets. Since the other countries did not have a formal-informal distinction in their sampling frames, it was not possible in these studies to explore the implications of informality. The firms were therefore only analysed by size. It was shown, for example, that small firms have much less access to credit than larger firms (Bigsten et al., 2000). This article extends the earlier literature by comparing, specifically within the category of small firms, differences between formal and informal firms in characteristics such as productivity, and it also analyses the reasons for firms to choose informality rather than formality.

Our primary purpose is to outline the main differences between formal and informal firms predominantly in terms of inputs into production, access to finance and human capital. Given this snapshot, we continue by analysing the main drivers behind the decision to become either formal or informal at start-up. We finally discuss the content of an appropriate development policy aiming at unleashing the potential of the

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3. Fafchamps (1994) provides an interesting discussion of the question why so few small firms grow to become large firms.

sector. As donors and domestic policy-makers continue to organise support schemes and capacity-building efforts with the objective of improving growth and reducing poverty in the informal sector, the need for continued research and evaluation of these efforts has never been greater.

An important dimension in Kenya, as in many other countries in sub-Saharan Africa, is ethnicity. During the colonial period, a number of Indian labourers were recruited to build the railways from Mombasa to Lake Victoria. After completion of the railway, many stayed on in Kenya. Being subject to restrictions on land ownership, these migrants resorted to trade and manufacturing, many of them becoming successful entrepreneurs. We also take this into account in the analysis of differences.

## 2 The informal sector in Kenya

The Kenyan *jua kali*<sup>4</sup> sector is a mixture of small self-employment efforts and dynamic enterprises covering a wide variety of activities that concentrate mainly in urban but are also evident in rural areas. Part of this activity results from decreased demand for products by rural artisans, which forces the artisans to shift production from rural to urban areas. The sector is also an avenue through which unskilled persons who move from rural to urban areas acquire skills that enable them to survive in a more challenging urban environment. Urban informal employment also results from the limited employment opportunities in the formal sector and the presence of young graduates from vocational training institutions, whose curriculum is conventional and offers few specialised skills and therefore limited opportunity for penetrating the saturated formal labour market. The graduates end up picking up apprenticeships in the *jua kali* sector to develop specific skills necessary for direct employment in the sector.

The sector is also attractive for skilled persons who either lose formal sector jobs or are beginners in self-employment, taking advantage of the failures of the formal sector to offer some goods and services on competitive terms. But the sector is generally a second-best choice for those unable to find or keep positions in the formal sector. Detailed analysis of the garments sector revealed that, while making extensive use of casual workers, the *jua kali* sector employs skilled workers for direct deployment in production. Most *jua kali* firms require workers with skills that school leavers do not have, so that the sector is unlikely to solve Kenya's unemployment problem (Ongile and McCormick, 1996).

Most of the output from the *jua kali* sector satisfies demand for food and other basic needs from the low- and middle-income rural and urban Kenyans. Prices are lower than for modern sector products, but the quality is also often lower. Nevertheless, some of the high quality furniture sold in the formal sector is supplied by *jua kali* enterprises providing an important interface between the two sectors. Contracts with *jua kali* enterprises are often more flexible and customer relationships more personal than in the formal sector.

A significant part of the informal entrepreneurship results from straddling between formal sector jobs and informal activities. It is also the case that some of the informal entrepreneurs initially gathered their skills while working in the formal sector, although skills also flow in the opposite direction. In a few cases, formal retail and wholesale

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4. 'Jua Kali' is Swahili for 'Hot Sun'.

stores contract informal enterprises to make specified products, facilitated through prepayments to the informal workshops for the procurement of raw materials. Incidences of extension of supplier credit from formal to informal firms are evident, although this is limited to firms with established trading relationships.

### **3 What are the main differences between formal and informal firms?**

Much effort has been devoted to the demanding task of providing a clear-cut definition of the informal sector over the years. Normally one or more of three criteria have been used (Morrisson, 1995). The first one is size, where the concept of informal is restricted to self-employed and micro-enterprises with less than 10-20 employees. The second criterion concerns legal informality, that is, informal enterprises are not registered and do not comply with legal obligations concerning safety, taxes, labour laws, etc. The third criterion indicates that the firms should have limited physical and human capital per worker. Sometimes the sector is referred to as a low wage sector. The common factor of these definitions is that there is a dual structure in the economy, with a formal sector and an informal sector. Fortin, Marceau and Savard (1997) emphasise the three aspects mentioned above and refer to them as scale, evasion, and wage dualism.

The resulting confusion, across disciplines, has made some researchers reluctant to use the concept altogether, which we believe is unfortunate. Certainly, in a country like Kenya, there is a visible difference between firms that are in official registers and pay tax, and firms which operate under more obscure conditions, closely together, and under fierce competition. The potential of the latter firms has inspired a number of authors to advocate various solutions to take advantage of the often observed ingenuity and efficiency of the entrepreneurs, who frequently manage to realise a business idea with very limited means.

However, apart from the obvious feeling of informality that anyone who has visited the informal sector is bound to have experienced, what are the characteristics of informality in terms of observable variables? The data employed to illustrate these formal-informal differences are drawn from the Regional Programme for Enterprise Development survey, which was conducted in three consecutive years (1993-5). The survey comprised both informal and formal firms in four manufacturing sectors: the food, wood, textile, and metal industries. The sampling for formal firms was done on the basis of information from the government's Register of Companies. The sampling of informal firms was made with the help of the Central Bureau of Statistics, which listed all informal firms in the major informal sector areas of Nairobi, Mombasa, Nakuru, and Eldoret. From these lists we randomly selected firms, in proportion to the shares of the respective sub-sectors and towns in informal employment (see Bigsten and Kimuyu, 2001, for details).

We solved the complicated task of defining informality simply by using a legal criterion – a firm was considered informal if it was not in the official Register of Companies, which is administered by the Central Bureau of Statistics. Our definition is different from that of other studies that have often used definitions based on various characteristics of production and management, such as the stock of capital, contractual relationships, whether taxes are paid, and so on. As we shall see, however, these

definitions capture more or less the same group of enterprises. This is so, we argue below, because informal production has to be organised in a way that is consistent with the characteristics used in the definitions adopted by other studies.

The analysis includes all firms in the two lowest size-strata of the survey, i.e. firms with a maximum of 20 employees. All surveyed firms in this size category were included; the results are thus conditional on firms being in this size category.<sup>5</sup> Our unbalanced panel contains 73 informal and 69 formal firms. This is by no means representative of the population of firms, since the survey was strongly stratified, giving much larger weight to formal than to informal firms.<sup>6</sup> It would have been preferable to restrict the sample to owner-managed firms, but we were not able to identify these. In any case, almost all firms in our size-range are owner-managed firms.

We distinguish between informal and formal small firms, and between firms managed by Kenyans of African origin and those of Asian origin. As we shall see later, ethnic origin plays a crucial role in explaining observed differences.

Only two informal firms in our sample were run by Asians, compared with 71 managed by Africans. The 69 formal firms are more equally distributed, as can be seen in Table 1. Hence, in the analyses that follow, we shall restrict our attention to only three categories, excluding the two Asian-managed informal firms.

**Table 1: Sample distribution of formal and informal firms by ethnicity**

	Formal	Informal	All
Asian	42	2	44
African	27	71	98
All	69	73	142

Table 2 shows the characteristics of the entrepreneurs by formality status and ethnic origin. Owner/managers of formal firms were better educated and older, both at start-up and on the occasion of the interview, than were those of the informal firms. The informal entrepreneurs more often had a rural background and fewer years in town, which usually means a history of migrating from a smaller town or the countryside to the main city. It was much more common for Asian than for African managers to have fathers with a manufacturing background. The start-up capital comes mainly from own savings for all firms, irrespective of the proprietor's ethnicity.<sup>7</sup>

The differences in production structures are even more pronounced. Table 3 reveals that Asian formal firms are about 30% more capital-intensive on average than African formal firms, and more than 4 times as capital-intensive as African informal firms. Median differences were even higher. As a consequence, Asian firms exhibited

5. The number refers to the mean number of workers per firm during the sample period 1993-5, rounded down to the nearest integer.

6. Within the sample, formal Asian-managed firms had on average 7.6 workers, compared with 6.0 for African-managed formal firms, and 4.2 for African-owned informal establishments.

7. One should be cautious when interpreting 'own savings', which might sometimes include transfers or grants from relatives or friends received some time prior to start-up but saved for the purpose.

higher rates of labour productivity than did both formal and informal African firms, and higher capital productivity than African formal firms. Asian enterprises were more capital-productive than African formal firms, suggesting a major overall productivity difference between Asian and African formal establishments.

**Table 2: The background of the owner/manager**

Category ( <i>N</i> )	Formal		Informal
	Asian (42)	African (27)	African (71)
Owner/manager's highest education level:			
Secondary school	49% (37)	40% (25)	37% (68)
Professional diploma	25% (37)	42%* (25)	19% (68)
University diploma	26% <sup>a</sup> (37)	16% (25)	3% <sup>a</sup> (68)
Owner's age in years	45 (37)	50 <sup>a</sup> (25)	38 <sup>a</sup> (59)
Owner's age in years at start-up	31 (15)	34 (19)	30 (51)
Owner's years-in-town at start-up	31 <sup>a</sup> (12)	26 (18)	18 <sup>a</sup> (62)
Owner's father had a manufacturing firm	68% <sup>a</sup> (37)	20% (25)	19% <sup>a</sup> (68)
Owner's father had a trading firm	11% (37)	28% (25)	7% (68)
Owner's father was a farmer	14% <sup>a</sup> (37)	28% (25)	33% (68)
% of start-up capital financed by:			
Own savings	82% (30)	58% <sup>a</sup> (23)	77% (59)
Borrowings from relatives and friends	3% (30)	8% (22)	7% (59)

Notes: Number of observations with non-missing entries (*N*) in parentheses. Note that *N* varies between variables because of missing values, which is usually due to non-responses. The statistics were computed using mean values for the periods in which the firm was observed. T-tests were conducted. a) indicates that category's mean is significantly different from the rest of the sample at the 5% level.

Unskilled wages do not differ significantly among categories. However, Asian formal firms pay significantly higher skilled wages and African informal firms significantly less than African formal enterprises. The higher skilled wages in Asian formal firms can then mainly be explained by higher labour productivity.<sup>8</sup>

The incidence of regular tax payments also differs. More than half of Asian and African formal firms pay tax, while VAT is paid by more than half of the Asian formal

8. Since formal firms are somewhat larger than informal ones in our sample, there is also an independent size-effect behind this result – larger firms usually pay higher wages. Holding size constant, however, the data reveal that the main reason behind higher wages in Asian formal firms is higher labour productivity.

firms, and by about a third of the African formal firms. As expected, African informal firms pay virtually no taxes.

**Table 3: Production and financial variables**

		Formal		Informal
		Asian (42)	African(27)	African (71)
Capital/labour: <sup>b</sup>	mean	168 <sup>a</sup>	131 <sup>a</sup>	41 <sup>a</sup>
	median	153 (35)	83 (22)	18 (69)
Value added/labour, L-productivity: <sup>b</sup>	mean	173 <sup>a</sup>	55 <sup>a</sup>	72 <sup>a</sup>
	median	121 (40)	50 (25)	43 (67)
Value added/capital, K-productivity: <sup>b</sup>	mean	2.6	0.7 <sup>a</sup>	5.0 <sup>a</sup>
	median	0.7 (39)	0.5 (25)	2.4 (64)
Skilled annual wage: <sup>b</sup>	mean	52 <sup>a</sup>	40	29 <sup>a</sup>
	median	36 (37)	34 (21)	27 (54)
Unskilled annual wage: <sup>b</sup>	mean	30	30	27
	median	29 (36)	24 (22)	22 (43)
Firm age		27 <sup>a</sup> (38)	16 (25)	10 <sup>a</sup> (62)
Pays company tax		69% <sup>a</sup> (31)	52% <sup>a</sup> (24)	2% <sup>a</sup> (63)
Pays VAT		52% <sup>a</sup> (32)	30% (25)	4% <sup>a</sup> (63)
Has overdraft facility at a bank		59% <sup>a</sup> (42)	48% <sup>a</sup> (27)	8% <sup>a</sup> (71)
Rates lack of credit as the no 1 problem		11% <sup>a</sup> (42)	32% (27)	42% <sup>a</sup> (71)
Owes money to suppliers		50% (35)	35% (24)	12% <sup>a</sup> (65)
Latest major investment financed by:				
Company retained earnings		64% (26)	69% (23)	46% <sup>a</sup> (55)
Personal savings		2% <sup>a</sup> (26)	11% (22)	33% <sup>a</sup> (55)
Bank loans		20% (26)	16% (23)	6% <sup>a</sup> (55)

Notes: Number of observations are in the parentheses. The statistics were computed using mean values for the periods in which the firm was observed. T-tests were conducted. a) indicates that category's mean is significantly different from the rest of the sample at the 5% level; b) in thousands of 1992 Kenyan Shillings.

Financial facilities differ a great deal across categories: African informal companies seldom have an overdraft facility. Fewer African informal firms also owe money to suppliers, indicating that access to trade credit is not helping to relax the credit constraints.<sup>9</sup> When it comes to investment, company retained earnings plus own savings are the major sources of finance for all categories. Informal firms make much less use of regular bank loans.

As a final comparison, we estimate a simple production function in order to evaluate how they perform vis-à-vis each other in terms of technical efficiency. We are not concerned here with allocative efficiency, but only with the efficiency of the actual transformation process that takes place within the firm in which inputs are converted into outputs. Table 4 displays results from a stochastic frontier model, which is a special case of the model proposed by Battese and Coelli (1992).<sup>10</sup> The production model is assumed to be approximated by the Cobb-Douglas functional form where capital and labour are transformed into value-added (output less intermediate inputs). This model predicts technical efficiencies (TE) for each of the sample firms, defined as  $TE_i = \exp(-u_i)$ , where  $u_i$  is a non-negative error term associated with inefficiency for the  $i$ 'th firm. The model is estimated using maximum likelihood. These predictions belong to the (0,1) interval in which the right end corresponds to full technical efficiency (TE = 1.0). If TE equals 0.5, actual output is about half compared with its potential, given full technical efficiency.

The results indicate that production exhibits roughly constant returns to scale<sup>11</sup> and that the elasticity of output with respect to labour is significantly higher compared with that of capital. There are no significant differences between the sectors and the different years of the survey. The error variables,  $\sigma^2$  and  $\gamma$ , indicate that the firms exhibit substantial inefficiencies; the null hypothesis that there are no inefficiency effects is rejected at all plausible probability levels (see Lundvall and Battese (2000) for a detailed description of the model).

The estimated production model defines a production frontier, which maps the highest attainable output, given inputs. Thus, deviations from the frontier for each observation can be calculated. These predicted firm-level technical efficiencies show, for instance, how efficiency varies with both ethnicity and formality status. The results are presented in Table 5. Overall efficiency levels are surprisingly low, and suggest that, on average, the firms can expand output twofold, given the same level of labour and capital inputs. However, although output certainly can expand, one should interpret the magnitude with caution due to noise in the data, especially concerning the capital variable. More reliable is probably the comparison between categories of firms. Interestingly, African-managed formal firms not only perform worse than Asian-managed formal firms, but also worse than African-managed informal firms.

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9. Using RPED data from five African countries, Kenya being one, Fisman (2001) shows that access to trade credit is productivity-enhancing since firms having access to trade credit are less likely to face inventory shortages leading to lower capacity utilisation.

10. The model estimated is identical to the Battese and Coelli (1992) model, with both the efficiency time trend parameter ( $\eta$ ) and the parameter for the mean of the truncated distribution of the error term ( $\mu$ ), which is associated with technical inefficiency in production, restricted to zero; see also Coelli (1994) for details. The model was estimated using FRONTIER 4.1b. For an application of this approach to the full data set, see Lundvall and Battese (2000).

11. Returns to scale equal approximately 1.03, which is not different from zero according to the conventional t-tests.

Alternative models such as OLS with and without fixed effects and DEA (Data Envelopment Analysis) produce the same qualitative results.

**Table 4: Parameter estimates of a stochastic frontier production function model**

Dependent variable	ln(value added)
Constant	10.69 <sup>a</sup> (0.71)
log(Capital)	0.195 <sup>a</sup> (0.045)
log(Workers)	0.83 <sup>a</sup> (0.12)
Wood sector	-0.43 (0.33)
Textile sector	-0.42 (0.33)
Metal sector	-0.27 (0.32)
Wave 2	0.05 (0.17)
Wave 3	-0.17 (0.17)
$\sigma^2$	1.79 <sup>a</sup> (0.26)
$\gamma$	0.302 <sup>a</sup> (0.094)
$\mu$	1.51 <sup>a</sup> (0.46)
Number of firms	130
Number of observations	292
R-square	
Log likelihood	-486.8
Likelihood ratio test for inefficiency effects <sup>b</sup>	16.97 <sup>a</sup>

Notes: a) denotes significant at the 5% level; b) this is the test for the inefficiency effects in the Battese and Coelli (1992) model, which has an approximately missed chi-square distribution; for critical values see Kodde and Palme (1986).

**Table 5: Mean predicted technical efficiencies**

	Formal	Informal	All
Asian	0.34	-	0.33
African	0.23	0.26	0.25
All	0.30	0.26	0.28

In sum, this section has identified a number of marked differences between formal Asian, formal African and informal African firms. All three categories are distinct and ethnicity plays a greater role than formality status. Compared to his formal competitor, the informal African entrepreneur is generally less experienced and less educated, and runs the business with less capital, which obviously is a result of poor access to credit. The African formal entrepreneur is at a general disadvantage compared with his Asian formal competitor. He is older and does not have a family tradition of doing business in the sector. He has more training, but operates less physical capital, and his output is meagre, given the amount of inputs employed.

The low productivity of African formal firms is a crucial result. This means that for African entrepreneurs there are no productivity gains in becoming formal. Instead, there will be cost increases. It is therefore rational for the African entrepreneurs to choose to start or remain informal.

#### **4 Why are some firms informal?**

To address this question, let us consider the costs and benefits of informality for firms.

In Kenya, informal enterprises are concentrated in specific parts of the cities, where services are available and markets are nearby. Some operate from fixed locations, others from transitory ones, to escape government harassment. The majority of informal sector entrepreneurs are tenants, a few are landlords, while others are squatters who neither rent nor own the space they use. Informal food-processing, woodworking, and metal-fabricating enterprises typically operate from makeshift shacks. Due to the temporary nature of the premises, infrastructure services such as water and electricity are difficult to access, limiting the technological choices available to the enterprises. Most output from the sector satisfies low- and middle-income demand for basic needs. Entry barriers are low, and competition is fierce.

Such an environment offers several benefits. For instance, management requirements are less demanding. Government policies and regulations, such as labour laws concerning minimum wages and workers' safety, can be circumvented by operating informally. Informal firms need not adhere to working hour regulations and informal entrepreneurs may find it easier to control labour. Informal firms can avoid taxes and fees as well as various urban planning regulations. There are also other regulations such as price controls, licensing, and laws pertaining to property rights that informal firms can avoid. When there are fluctuations in demand, an informal firm finds it easier to adjust because of its simple and flexible technology, and hence it can avoid some of the costs associated with idle capacity. The ease with which an informal firm can vary its employment level can save on wage costs.

These advantages must be weighted against the costs and risks associated with operating outside the rule of law. Informal firms risk being detected and punished for operating 'illegally'. They also receive fewer services from the state, most notably from institutions providing jurisdictional services such as protection against burglars and other policing, as well as contract enforcement. The informal firms may be unable to use formal channels of dispute resolution due to their uncertain legal status, and this also means that it is hard to get access to financial, banking, and other commercial services. Informal entrepreneurs cannot get access to trade fairs or use membership in umbrella organisations to their benefit. Small Kenyan firms also tend to have few assets

that can be foreclosed in the event of breaches of contract, and their transactions are so small that the monetary and time costs associated with court actions would not be justified in any case. Thus, small firms in Kenya seldom go to court (Kimuyu, 1997, Bigsten et al., 2000). Entrepreneurs instead choose trading practices that minimise the risk of contract breaches. The most common information-sharing mechanism is the referral system, where a customer or supplier approaches an economic agent with a recommendation from a joint acquaintance (Fafchamps, 1999).

Further, like in some other East African countries, ethnicity exerts a strong influence on these benefits and costs. In particular, Africans are less likely to attract official attention when they avoid such registration, whereas Asians are more prone to harassment from the authorities. Since the political leadership in Kenya is predominantly African, violations of the law by African entrepreneurs are likely to be more tolerated than those by their Asian counterparts. Therefore, even if the choice of informality were desirable from a cost-benefit point of view, it might be more difficult for Asians to operate informally. Kenyan entrepreneurs of Asian origin hardly ever run informal firms, which may be due to the fact that Asian informal firms would be more likely to be harassed by the authorities. We have shown that informal African firms are, on average, less efficient than Asian-managed formal firms. Nevertheless, they are at least as efficient as formal African firms.

Given these costs and benefits, and the ethnic factor, we make an attempt at testing these attributes on the decision at start-up for a manager to choose either formal or informal status. The assumption we make is that, once this decision is made and the firm is born, there is a fairly low probability that the enterprise will change status, which is also observed in the data. The choice of formality status was analysed using binary choice models and the results are summarised in Table 6. The dependent variable indicates whether the firm is informal (IS=1) or formal (IS=0). The explanatory variables describe the experience and background of the entrepreneur, as well as the manufacturing sector in which his company operates. Since the likelihood of choosing informality may be affected by the time in which the enterprise was formed, we include variables reflecting firm age (log firms' age in levels and squared). The parameter estimates reflect the marginal effects, i.e. the change in probability arising from a discrete shift in a dummy variable from 0 to 1, or a percentage change in the underlying explanatory variable.

The results indicate that ethnicity, as expected, has a strong influence on the choice of formality status. The parameter estimate for African ownership is positive and significant. Being African increases the probability of choosing informal status by around 70%, depending on model and given the mean of the other explanatory variables. The age of the entrepreneur at start-up was statistically significant with a negative effect, while the father's background had no discernible influence on the formality decision. Professional degree holders more seldom choose to become informal entrepreneurs. Firm age was significant in both models, when log age and log age squared were tested jointly. The marginal effect of firms' age was negative for most data points. The older the firm, the more likely it was to be formal, reflecting the fact that informal firms appear to die more often than do formal firms. It may also reflect an increase in informal firm start-ups relative to formal firm start-ups. In any case, the inclusion of firm age does not knock out other effects.

**Table 6: Probit estimates of the choice of formality status (marginal effects)**

Variable	Model 1		Model 2	
	DF/dx	S. E.	DF/dx	S. E.
Wood sector <sup>a</sup>	0.41 <sup>b</sup>	0.18	0.30 <sup>c</sup>	0.15
Textile sector <sup>a</sup>	0.28	0.19	0.19	0.18
Metal sector <sup>a</sup>	0.072	0.19	0.03	0.20
African owner <sup>a</sup>	0.66 <sup>b</sup>	0.068	0.77 <sup>a</sup>	0.071
Owner holds a professional degree <sup>a</sup>	0.32 <sup>b</sup>	0.093	0.34 <sup>b</sup>	0.13
Owner holds a university degree <sup>a</sup>	-0.21	0.17	-0.26	0.28
Owner's father had manufacturing firm <sup>a</sup>	-0.04	0.16	-0.06	0.22
Owner's father was a farmer <sup>a</sup>	-0.03	0.14	-0.01	0.15
Log (firm age in years)	0.27	0.35	0.09	0.36
Log (firm age in years) <sup>2</sup>	-0.140 <sup>b</sup>	0.083	-0.099	0.085
Log(owner's age at start-up)			-0.58 <sup>b</sup>	0.25
T-test: no firm age effect	Rejected		Rejected	
No of observations	119		86	
Log Likelihood	-40.0		-31.8	
Pseudo R-square	0.51		0.45	

Notes: The dependent variable is given by IS=1 for informal and IS=0 for formal firms. Robust standard errors (S. E.) reported in parentheses. a) indicates dummy variables for which the marginal effects refer to a discrete change from 0 to 1. b) and c) denote if the effects are significant at the 5% and 10% levels respectively.

These results provide some support to our story above on the reason behind choosing informality. The costs and benefits of informal status are simply very different for African- compared with Asian-run businesses. The latter, having a large and relatively wealthy supportive family/business network, which provides better access to credit and finance, can afford the costs associated with formal status. In any case, the costs of being informal would be even higher. The more efficient production provides the necessary funding for expenses such as tax, VAT, insurance and higher skilled wages. Africans, on the other side, with weaker economic networks, lacking the necessary experience and financing channels, and hampered by less efficient production, cannot meet the costs of formality. Since the costs of *informality* are smaller compared with their Asian competitor, they frequently end up in the informal sector. This suggests that it can be rational for African entrepreneurs to stay informal, since it reduces their costs without having a detrimental effect on productivity. Some African firms are nevertheless in the formal sector, operating a larger capital stock and with better trained managers in terms of professional diplomas, but are still not successful in terms of productivity. Given this situation, it will be hard for the government to bring about the increased formalisation of the economy that is required to achieve an economic take-off in Kenya.

## **5 What is an appropriate development policy?**

We argue that for Kenya to take off it must achieve much higher investment rates and increased exports. This can only be realised by the formal sector. Investments in informal firms are generally modest, and the sector hardly exports at all. Also, for the economy to grow faster, publicly provided goods and services such as infrastructure, education, and law and order must be delivered. This can only be done if the government is able to increase tax revenues. And these can only be collected from the formal sector. Therefore we argue that the policy must aim to make informal firms get absorbed into the formal sector.<sup>12</sup> A complete merger between the sectors is, of course, the long-term goal as envisaged already by Lewis in his analysis of the development of the dual economy.

Given this picture, what should the government do? First, on the macro level there is a need to bring about a shift to a policy that is credible to domestic as well as foreign investors. Kenya has been characterised by poor governance, and this has led to low credibility, low levels of investment, and poor economic growth. The new Kenyan government has set out to change policies and implement new structures, but it is too early to judge the results of its efforts.

We have made the point that there is a negative externality of firms being in the informal sector. The government needs to make a conscious effort to deal with this. It also needs to appreciate that informal firms surpass formal firms in terms of employment. This means that the assets of the informal firms are crucially important for welfare in the short term, at the same time as the shift of those firms or their labour into the formal sector is crucial for economic take-off in the longer term. Policy towards the informal sector should therefore be mainstreamed in the government's development policy. Informal sector policy can no longer be an 'extra' that is done on the side.

Formal firms in Kenya have been confronted with all kinds of problems in dealing with authorities. These troubles relate to regulatory red tape, corruption, and lack of security. Thus, part of a policy to bring about a shift of firms to the formal sector must be to clean up the way the government deals with formal sector firms in order to reduce the incentives for firms to take shelter in the informal sector.

To bring about informal sector growth and absorption into the formal sector the government needs to design its general policies so that they are relevant also for informal firms, and design specific programmes targeting informal firms. The skill level and policy environment of the latter need to be improved to make it possible for them to graduate to the formal sector. Since a large part of the population will continue to depend on the informal firms for their sustenance for a long time to come, it is important that these firms are helped to become more productive, quite apart from helping them to graduate to the formal sector. Informal sector projects by donors and governments in Africa have so far focused on the important issue of immediate poverty reduction. We believe this strategy needs to be complemented by supporting the informal firms to graduate into the formal sector.

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12. There are, of course, other long-term advantages with formal sector production. Labour rights can be protected more effectively, and consumers can challenge enterprises in court if they do not deliver as promised.

Capacity-building efforts have so far largely neglected the needs of informal firms, while formal firms have been the primary beneficiary of policies in areas such as vocational training. However, we have demonstrated that, among African-owned small firms, those that are informal were at least as efficient as the formal ones. There is thus no economic reason why informal firms should not be covered by various training programmes. We think curriculum as well as targeting should be thoroughly evaluated.

The Kenya infrastructure such as roads, electricity, and water supply is in bad shape, and in its efforts to improve it the government should also take into account the needs of the small informal firms. Our productivity estimates suggest that the immediate economic return from investments supporting the informal African firms may be as high as that from supporting small formal African firms.

We have noted that informal firms have a hard time accessing the formal credit market. This is due to their uncertain legal status and lack of proper accounts, and lack of credit-rating procedures relevant to informal firms. The small size of the loans required by these small firms also means that alternative procedures for the provision of credit to such firms are desirable. There are some modest Grameen Bank-type attempts, but further scope for economically viable programmes certainly exists.

The government should also try to link up informal firms with the formal economy through, for example, government contracts, which could be used as an incentive for informal firms to formalise operations. Measures to stimulate demand for informal sector goods and services from the private sector could also be considered. One should also try to stimulate the formation of supporting networks among informal African entrepreneurs themselves, as well as between them and formal sector organisations and informal networks. Since the ultimate aim of the policy is to absorb the informal firms into the formal sector, there is need to work on several fronts that have potential for bridging the gap between the sectors.

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