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Selection, Firm Turnover, and Productivity Growth: Do Emerging Cities Speed up the Process?

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Abstract

In this paper, we investigate the potential impact of selection mechanisms in raising plant-level productivity in Ethiopia. Specifically, we are interested in how firms' entry and exit contribute to the pace of factor reallocation and TFP growth within industries—and whether these processes are accelerated in larger cities. We carry out this analysis using data from the Ethiopian census on manufacturing firms which cover the period 2000 to 2010. Importantly, these data include both producer-level physical outputs and prices which allow us to distinguish between plant's TFPR (revenue generated per unit of input) and TFPQ (physical output produced per unit of input). Our analysis reveals that these two measures generate very different results, suggesting that physical productivity measures (TFPQ) are better suited to examining firm dynamics when local producers have some degree of market power. In addition, we find evidence that, in urban markets, less efficient (higher cost) firms are more likely to exit the market than their more efficient (lower cost) rivals—but only when we control for producers' transport costs.

Key words: Productivity, Pricing and Market Structure, Urbanization
JEL Codes: D24, L11, R11

I. Introduction

Africa is urbanizing fast. Currently, 472 million people live in urban areas across Africa and this number is expected to double in the next twenty-five years (United Nations, 2014). Africa's pattern of urbanization, however, is different from that which is currently underway in other developing regions. Elsewhere, increased urbanization has been accompanied by a rise in manufacturing activities. Globally, there is a strong correlation between urbanization and the expansion of manufacturing. For most countries, manufacturing (as a share of GDP) rises with urban shares until about 60% of the population lives in cities and manufacturing comprises about 15% of GDP. By contrast, the relationship between urbanization and manufacturing in Sub-Saharan Africa is relatively flat (Figure 1). Africa's unique pattern of growth has been described as "urbanization without industrialization" (Fay and Opal, 2000; Jedwab, 2013; Gollin et al, 2014).

The development literature has highlighted two different forms of structural change that countries can follow as they urbanize (Bairoch, 1975; Gollin et al, 2014; Jedwab, 2015). The first path involves the typical movement of workers out of agriculture and into manufacturing. This type of structural change results in the growth of "production" cities in which tradable goods are produced for both domestic and international markets. This is the path which has been taken by most countries in Europe, Latin America, and Asia (Bairoch, 1975).

The second path is meant to reflect the recent experience of several African countries which have large, natural resource endowments. In these countries, positive, productivity shocks to the resource sector shift workers out of the food and tradable sectors and into the resource sector. The surplus income generated from these productivity shocks causes a disproportionate rise in the demand for urban goods and services relative to food. This additional demand is met largely through imports except in the case of urban services which is provided by the local labor force. The net result is a rise in the level of urbanization and an increase in the share of employment in the urban, non-tradable sector. This type of urbanization is mostly driven by consumption rather than production and results in the growth of "consumption" cities (Gollin et al, 2016).

In this paper, we approach the link between urbanization and industrialization in Africa from a different perspective. Our focus is on competition-driven selection mechanisms. Specifically, we are interested in how firms' entry and exit contribute to the pace of factor reallocation and TFP growth—and whether these processes are accelerated in larger cities. We start with the following proposition: growing cities attract new businesses which toughen competition by reducing the physical distance between firms (a lá Salop, 1979). Closer producer spacing makes it harder for relatively less efficient (higher cost) producers to compete against their more efficient (lower cost) competitors, resulting in the least efficient firms exiting the market. This causes average productivity within the industry to rise for two reasons: 1) those plants remaining in the market are more productive than those exiting; and 2) new entrants are more productive than previous entrants because the productivity threshold needed to survive in the market has risen. Thus, competition-driven selection entry and exit are an important driver of factor reallocation—the shifting of resources to the most productive units within an industry.

If larger cities accelerate the pace of factor reallocation, Africa's urbanization process may have a direct effect on aggregate (industry) productivity, even in the absence of agglomeration economies. Such selection mechanisms have been found to explain a large proportion of the variation in manufacturing productivity in other countries. For example, 50% of the productivity growth in US manufacturing during the 1970s and 1980s can be attributed to factor reallocation (Bailey, Hulton, and Campbell, 1992). In fact, much of the variation in TFP growth across countries is explained by factor reallocation within narrowly (usually 4-digit ISIC) industries (see Haltiwanger, and Syverson, 2008; Syverson, 2011; and Bartlesman, Haltiwanger, and Scarpetta, 2013). Identifying the underlying determinants of TFP growth is therefore important not only for understanding firm dynamics but also because TFP differences are an important factor in explaining differences in per capita income across countries (Prescott, 1998; Hall and Jones, 1999; Restuccia and Rogerson, 2008, 2013).

The link between emerging cities and greater factor reallocation, however, is not automatic. As pointed out by Syverson (2004a, 2004b), high transport costs can weaken the effectiveness of selection mechanisms in weeding out less efficient firms. This is because transport costs affect consumers' willingness to substitute the output of one producer for another. When there is imperfect product substitutability, "more efficient (lower cost) plants cannot lure away all demand from their less efficient industry rivals simply with lower prices and lower productivity establishments area able to stay in business despite their cost disadvantage" (Syverson, 2004b, p. 534). In this paper, we posit that high transport costs in African cities weaken selection mechanisms.

We test this hypothesis using a 10-year panel of manufacturing firms from Ethiopia.[1] This panel contains annual production data for the period 2000 to 2010[2] and covers all manufacturing firms which employ 10+ employees. It is the most comprehensive census on manufacturing firms in Sub-Saharan Africa. Industries are classified at the 4-digit ISIC level and each producer is geo-referenced at the town level. Importantly, the Ethiopian data include both producers' physical outputs (the number of goods produced by each plant) and their prices. This allows us to distinguish between revenue-based measures of total factor productivity (TFPR) and those based on physical outputs (TFPQ). As is standard in the literature, we define TFPR as the value of revenue $(p_i q_i)$ per input unit (x_i) and TFPQ as the number of physical units produced per unit of output (q_i/x_i). Intuitively, TFPQ measures a plant's level of technical efficiency.

As discussed by Foster, Haltiwanger, and Foster (2008), hereafter FHS, it is important to distinguish between TRPR and TFPQ when estimating the impact of entry and exit on aggregate productivity. Theoretically, selection mechanisms should weed out those firms which are relatively less efficient (have lower TFPQ) compared to their competitors. However, plant survival could be linked to revenues (TFPR) rather than technical efficiency (TFPQ). If this is the case, high-revenue plants could survive in the long-run, even if they are less productive than their more efficient competitors. In such cases, empirical studies which measure establishment-level productivity using TFPR measures might overestimate the "true" link between productivity and the probability of survival.

Identification problems arise when within-industry price differentials reflect factors other than quality or production efficiency differences. Such price differentials might arise due to differences in idiosyncratic demand or when producers have some degree of market power. It is often argued that industries in African cities are comprised of quasi-independent, neighbourhood

[1] This panel is compiled from ten years of the Ethiopian Survey of Large and Medium Scale Manufacturing Industries which, despite its name, is a census of all manufacturing firms with 10+ employees.
[2] Data from 2005 are dropped because a survey was conducted during that year rather than a census.

markets. Firms in such a market structure are likely to price above marginal cost—and may pass on their higher urban costs to consumers by raising prices. Recent research reveals that retail prices for consumer goods in African cities are, on average, at least 25 percent higher than in other cities at comparable levels of economic development (World Bank, 2016, p.ii). African firms not only charge higher prices, they also pay higher nominal wages (at official exchange rates) than elsewhere in the developing world. See Figure 2. Higher urban wages may be an important factor in explaining why African firms find it hard to break into global markets (Venables, 2016).

To isolate the effects of spatial competition on firm turnover, we focus only on industries which produce homogeneous goods. This restriction is needed so that we can be confident that the price differentials that we observe reflect horizontal product differentiation (consumer preferences over products driven by supplier locations) rather than vertical product differentiation (consumer preferences over products driven by quality differences). We examine the following 4-digit industries: non-rice flour (ISIC=1531), white pan bread (ISIC=1541), and cinder blocks (ISIC=2695). To the best of our judgement, these products represent homogeneous goods. In total, our pooled sample covers more than 2,500 plant-year observations.

Our analysis reveals that, in Ethiopia, low-productivity plants (in terms of TFPQ) are more likely to exit the market than their more productive rivals—but only when we control for producers' transport costs. This result is consistent with the argument that competition-driven selection mechanisms weed out less efficient producers. Given this finding, the natural question which arises is: "If selection is based on productivity, why aren't there more high productivity firms?" We argue that selection mechanisms are being weakened in Ethiopia by high transport costs which give local producers (even those which produce homogeneous goods) some degree of market power. Our finding is consistent with Syverson's (2004a) model which shows how high transport costs can lower spatial product substitutability, making it easier for inefficient plants to survive, even in the long-run. Finally, we find weak evidence that selection mechanisms in Ethiopia's primate city, Addis Ababa, are stronger than those in secondary cities.

II. Estimation Strategy & Results

In emerging cities, competition-driven selection mechanisms generate productivity growth by weeding out the least efficient plants from the market. Theoretically, a plant's efficiency is measured by its physical productivity (TFPQ) which is defined as:

$$TFPQ_i = \frac{q_i}{x_i} = \frac{\omega_i x_i}{x_i} = \omega_i \quad (1)$$

where q_i is the physical quantity of goods products by plant i, x_i is the value of inputs used to produce q_i, and ω_i represents the plant's "true" level of technical efficiency.

Empirical support for such models, however, is usually founded on revenue-based measures of productivity, such as TFPR, as researchers rarely have datasets which report plants' physical output and prices. In these studies, TFPR is defined as

$$TFPR_i = \frac{p_i q_i}{x_i} = p_i \omega_i \quad (2)$$

where p_i is the price charge for its product by firm i. While these two measures are highly correlated, they are not identical as a plant's technical efficiency, ω, is only one factor that determines its profitability.

Measurement issues arise when producers within the same industry charge different prices due to variation in idiosyncratic demand or market power. There are two likely sources of within-industry price dispersion. First, demand variation across local markets might arise due to transport costs. In such markets, plants may gain market power due to horizontal price differentiation and high demand producers will be more likely to survive (and set higher prices), even if they are less efficient than their low-demand rivals. Second, long-run supplier-buyer ties might exist between established plants and their consumers. In this case, consumers do not view all suppliers as identical, even if they produce goods that are physically identical. This case is identical to spatial demand variation as long as such relationships are based on horizontal rather than vertical product differentiation. In both cases, "high" productivity firms (in terms of TFPR) may not be technically efficient (in terms of TFPQ).

To confound matters, the two measures of productivity are inversely correlated with price (FHS, 2008). TFPR is positively correlated with price while TFPQ is negatively correlated. In our sample, we observe these correlations. We estimate the correlation between ln(TFPR) and ln(Price) to be 0.03 while that for ln(TFPQ) and ln(Price) is -0.60. To untangle these effects, we construct measures of TFPR and TFPQ for all plants which produce the homogeneous goods that we have selected for our sample. As a reminder, these goods are flour, white pan bread, and cinder blocks. Two criteria were used to choose these products. First, consumers are likely to view each product as identical in terms of its physical attributes. For example, if two trucks showed up at a location with a flatbed full of cinder blocks, consumers would be indifferent as to which supplier they used. Second, we only chose industries where the number of plants producing each product was large enough to be statistically meaningful. To generate consistent measures of quantities across different industries, all products are measured in terms of their weight in kilograms.

Table 1 presents the descriptive statistics of these industries. As can be seen in the table, large productivity dispersion exists within each industry. For example, a plant at the 90^{th} percentile (in terms of TFPR) of its industry distribution produces between 1.9 and 2.8 times more than a plant at the 10^{th} percentile *with the same level of inputs*. These estimates are well within the range of those estimated for other countries. Syverson (2011), for example, estimates the ratio of 90^{th} to 10^{th} percentiles of TFPR at 1.92 for 4-digit industries in the United States. Similar to other studies, we find that the estimated within-industry productivity dispersion is larger when it is estimated by TFPQ rather than TFPR.

Finally, Table 1 reports the average (annual) entry rates and exit rates for each industry. We define a plant's entry date as the year when it was established (as reported by its owner or manager). On average, entry rates vary between 2% and 9% per year. Similarly, we define a plant's exit date as the last year that it was observed in the census. On average, exit rates vary between 15% and 21%. We should point out that we devoted substantial effort to ensure that our exit variable reflects a "true" exit from the market rather than a situation in which a plant was not interviewed during a given year. In the panel, there are cases when some firms are not interviewed in one or two years and then reappear in later years. These firms are not included in our estimated exit rates. To insure that this is the case, we drop the last two years of the census (2010 and 2011) in order to check that firms which exited in 2009 do not reappear in either 2010 or 2011. In our sample, there are no cases where a firm is not observed for more than two years and then reappears. Our estimated exit rates are similar to those which have been reported for other manufacturing industries in Africa.

A well-known empirical finding is that firms in larger cities are more productive than those in smaller cities (see Combes and Gobillon, 2015 for a recent survey of this literature). While this "stylized fact" is based almost entirely on data from rich countries, it is likely that many of the same mechanisms which generate higher productivity in larger cities (e.g., agglomeration economies and competition-driven selection) operate in a low-income setting as well. To date, however, few empirical studies examine these mechanisms for developing countries. This study is the first to our knowledge which measures the productivity gap (in terms of either TFPR or TFPQ) between plants which are located in the primate city of an African country and those located in secondary cities. As can be seen in Figure 3, there is no evidence that the TFPR distribution for plants in Addis Ababa (Ethiopia's primate city) lies to the right of the TFPR distribution for plants in Ethiopia's secondary cities. However, the right-hand tail of the TFPR distribution in Addis Ababa is much longer than that in secondary cities, indicating that Addis contains a higher proportion of the country's most productive plants (in terms of productivity).

To investigate the potential impact of selection mechanisms on aggregate (industry) productivity, we begin by estimating a set of demand equations for each product. At the plant-level, differences in price and demand within a market reflect the strength of producers' horizontal demand differentials. To measure these effects, we estimate the following demand equation:

$$lnq_i = \alpha + \beta lnp_i + \sum \delta_i Year_i + \lambda Income_{mt} + \eta_{it} \quad (3)$$

where q_i is the physical output of plant i in year t, p_i is the price of plant i in year t, $Income_{mt}$ is the average income (proxied by the luminosity of night lights) in plant's local market m, and η_i is a plant-year specific disturbance term. Estimating equation (3) using OLS could lead to biased estimates of the price elasticity β because plants respond to demand shocks in η_{it} by raising prices. Following the identification strategy proposed by FHS (2008), we use plant-level TFPQ as an instrument for producers' prices. Given that our measure of TFPQ reflects producers' idiosyncratic technologies (ω_i), it should be correlated with prices but orthogonal to idiosyncratic demand. Indeed, plant-level TFPQ explains 58% of the variation in producers' prices, after controlling for plant and year fixed effects.

Table 2 reports the results from estimating the demand isoelastic curves separately for each product are presented. As expected, the IV estimates are more elastic than the OLS estimates which suggests the presence of simultaneity bias in the OLS estimates and TFPQ is an appropriate instrument for price. All (IV) estimated price elasticities exceed one in absolute value. This result is consistent with the hypothesis that producers have market power and are operating on the elastic portion of their demand curve which is what we would expect in markets characterized by horizontal product differentiation. In addition, we use the results from the IV demand equation to estimate idiosyncratic demand shocks. To do this, we continue to follow FHS (2008) by using the plant-level residual from the IV demand equation which we then add it to the level of local income (as measured in our study by the luminosity of night lights).

Next, we examine how the characteristics of entering and exiting firms differ in terms of our four key variables: TFPR, TFPQ, price, and idiosyncratic demand shocks. These differences are computed by regressing each these variables on the entry and exit dummies as well as product-year fixed effects. We estimate both unweighted and weighted OLS regressions where the weights are producer-level revenues. The results of this exercise are reported in Table 3. Let's focus only on the results from the weighted regression analysis. It is clear from Table 3 that exiting firms have both lower TFPR and prices compared to incumbent firms. While the difference in mean TFPQ between firms is negative (as expected), it is not significant. Interestingly, we find that entrants charge significantly higher prices than incumbents and are subject to fewer idiosyncratic demand shocks. These results contradict those found for the US by FHS (2008) where entrants charge lower prices and, as a result, are an important driver of aggregate (industry) productivity growth.

To investigate whether entry and exit patterns vary by city size, we re-estimate the weighted OLS regressions but now split the sample by location—that is, we examine the difference in means separately for plants which are located in Addis Ababa and those located in secondary cities. Table 4 reports these results. Similar to the full sample, exiting plants in Addis Ababa have lower TFPR and prices than incumbent firms. This pattern does not hold for plants located in secondary cities. While the coefficients on TFPR and TFPQ for exiting firms are negative, they are not significant. Exiting plants, however, in both Addis Ababa and secondary cities have lower prices than incumbent firms. These patterns are not repeated for entrants. In Addis Ababa, the difference in means between entrants and incumbents are not significantly different for any of our four, key variables. Entrants in secondary cities enter the market with higher prices than incumbents and are subject to fewer idiosyncratic demand shocks. These results provide some evidence that selection mechanisms are stronger in Addis Ababa than in secondary cities.

Finally, we get to main issue of the paper: whether selection mechanism in African cities are driven by productivity (TFPQ) or profitability (TFPR). We do this in two ways. First we estimate probit regressions where the dependent variable takes the value of one if the firm exits the market in that year. The explanatory variables in this model are our four key variables: TFPR, TFPQ, price, and idiosyncratic demand. The results of this regression analysis are reported in Table 5. We then estimate another specification of this model where we include as additional controls the plants' age, capital stock, transportation costs, location, and level of local competition in the market where it operates. Location is defined as a dummy variable which take the value of one if the plant is located in Addis Ababa. Local competition is defined as producer density—the number of producers per kilometer in the market where the plant is located. A plant's market is defined as the urban agglomeration (as defined by night lights) where it is located. The results of these regressions are reported in Table 6.

When we estimate the parsimonious model (Table 5), we find similar results to those reported in Table 3. Firms with lower TFPR are more likely to exit the market than those with higher TFPR while the coefficient on TFPQ is negative but not significant. These results, however, are reversed when we add the additional controls (Table 6). In the full specification, TFPQ is both negative and significant, indicating that less efficient (higher cost) firms are more likely to exit the market than more efficient (lower cost) firms. This finding is consistent with the view that selection mechanisms in urban areas are associated with increased factor reallocation within industries. Interestingly, the coefficient on TFPQ becomes significant only when we include producers' transport costs in the specification. Notice that the coefficient on transport costs is negative, indicating that firms with lower transport costs are more likely to exit the market. One interpretation of this result is that firms that with higher transport costs operate in markets where there is less spatial product substitutability. This interpretation holds as long as producers' transport costs are proportional to those faced by consumers. Only future research can validate whether this is an accurate interpretation of our findings.

III. Concluding Remarks

In this paper, we investigate the potential impact of selection mechanisms in raising plant-level productivity in Ethiopia. Specifically, we are interested in how firms' entry and exit contribute to the pace of factor reallocation and TFP growth within industries—and whether these processes are accelerated in larger cities. We carry out this analysis using data from the Ethiopian census on manufacturing firms which cover the period 2000 to 2010. Importantly, these data include both producer-level physical outputs and prices which allow us to distinguish between plant's TFPR (revenue generated per unit of input) and TFPQ (physical output produced per unit of input). Our analysis reveals that these two measures generate very different results, suggesting that physical productivity measures (TFPQ) are better suited to examining firm dynamics when local producers have some degree of market power. In addition, we find evidence that, in urban markets, less efficient (higher cost) firms are more likely to exit the market than their more efficient (lower cost) rivals—but only when we control for producers' transport costs.

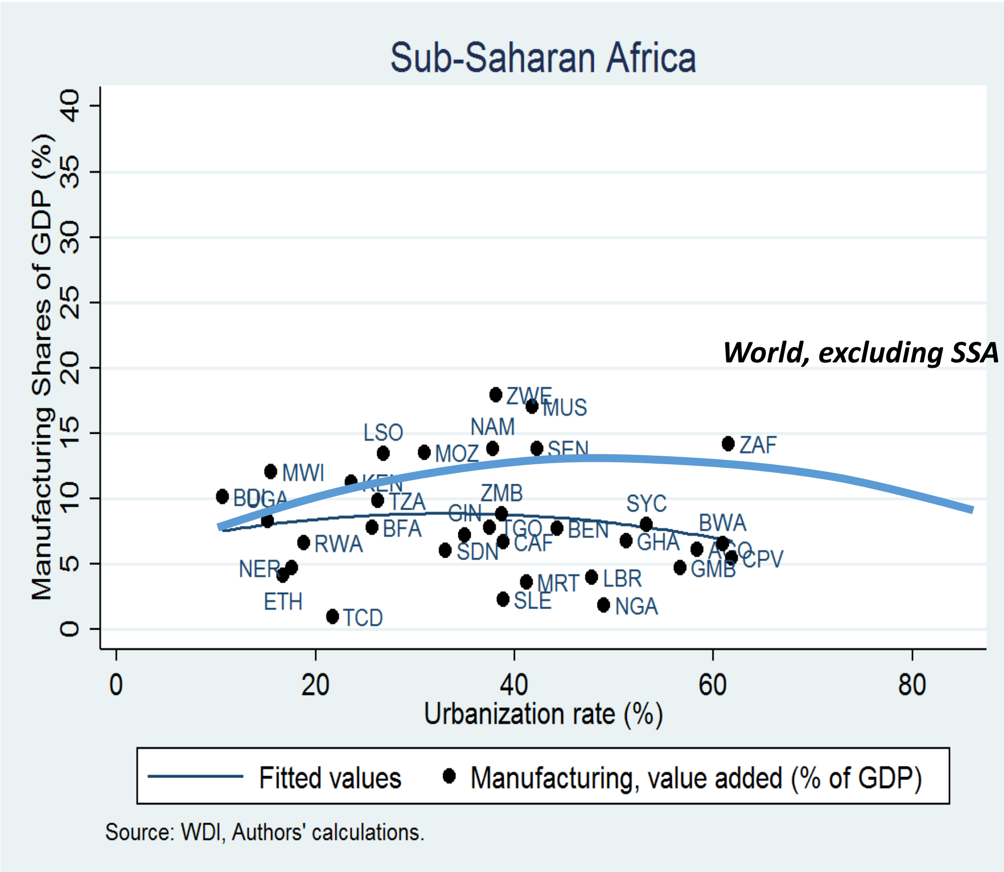

Figure 1: Urbanization and Economic Development
Source: Authors' calculations based World Bank Economic Surveys, 2015.

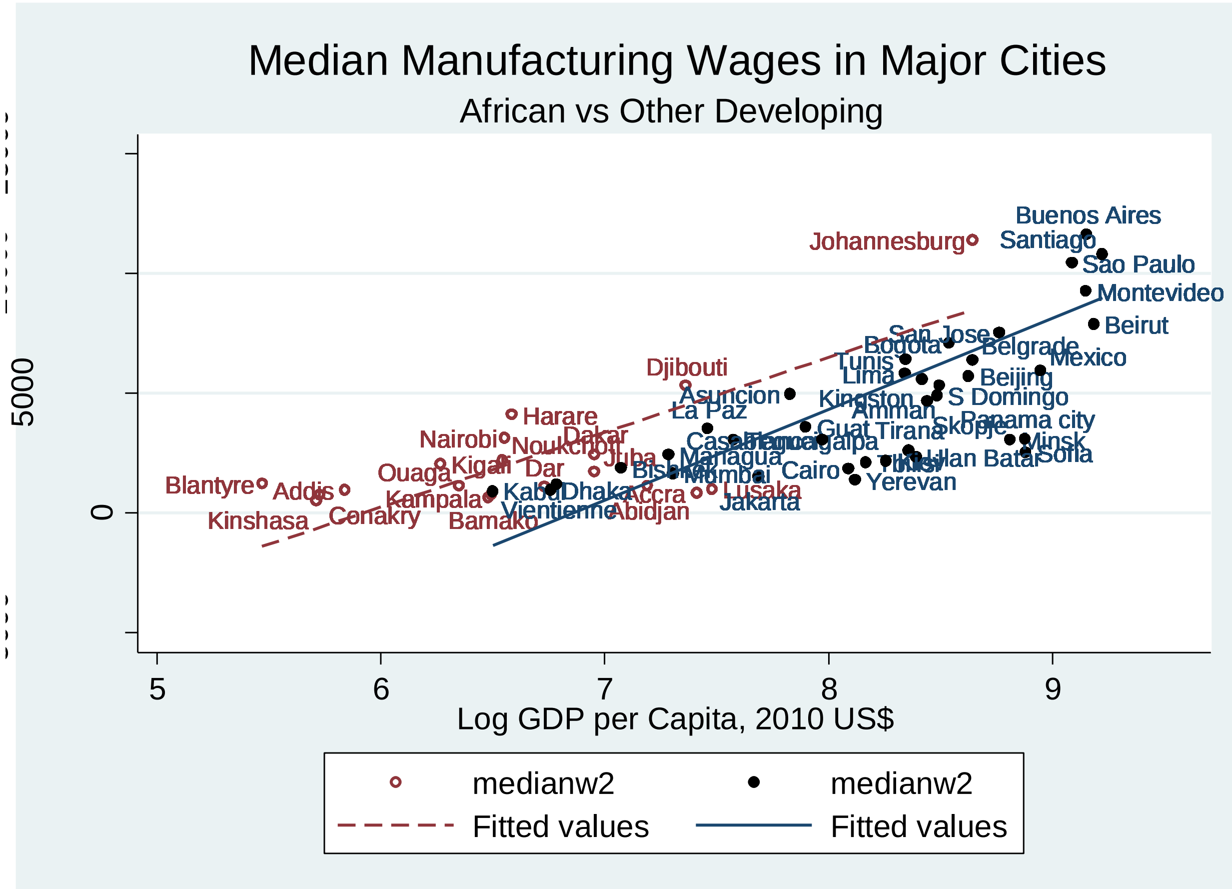

Figure 2: Manufacturing Wages in African Cities vs Other Cities

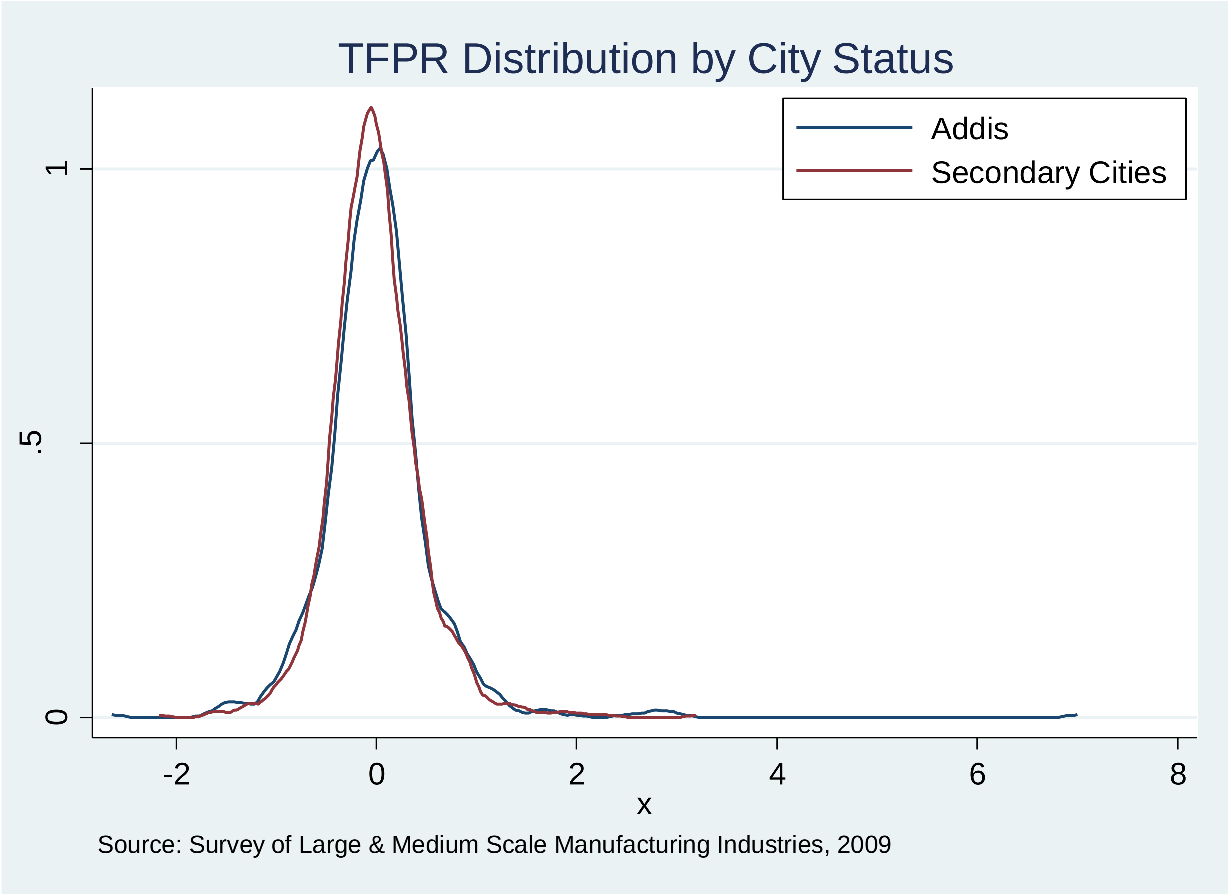

Figure 3: The Distribution of TFPR by 4-Digit Industry in Ethiopia

Table 1: Summary Statistics			
	Flour	**Pan Bread**	**Cinder blocks**
Entry	0.09 [0.46] (855)	0.02 [0.34] (786)	0.09 [0.49] (1,380)
Exit	0.15 [0.36] (855)	0.21 [0.41] (794)	0.28 [0.48] (1,362)
Firm size	44.39 [81.62] (858)	44.88 [293.18] (777)	21.42 [52.21] (1,258)
Ln(Capital)	12.93 [1.46] (810)	10.28 [2.71] (774)	13.04 [1.64] (1,246)
Ln(Transport Costs)	10.38 [1.96] (727)	9.04 [2.07] (582)	8.15 [2.11] (903)
Addis Ababa	0.24 [0.43] (860)	0.52 [0.50] (794)	0.27 [0.45] (1,362)
90^{th}-10^{th} percentile in TFPR	1.88 (803)	2.22 (757)	2.83 (1,144)
90^{th}-10^{th} percentile in TFPQ	2.73 (805)	22.92 (760)	3.42 (1,154)
90^{th}-10^{th} percentile in Ln(Price)	2.58 (853)	3.83 (793)	3.75 (1,353)

Notes: Standard deviations reported in brackets; number of observations reported in parentheses.

Table 2: Estimated Price Elasticities by Product				
	IV Estimates		OLS Estimates	
	Price coefficient (β)	Income Coefficient (λ)	Price coefficient (β)	Income Coefficient (λ)
Flour	-2.250***	0.411*	-0.734***	0.316*
	(0.35)	(0.22)	(0.09)	(0.19)
	[615]	[615]	[656]	[656]
Bread	-1.872***	0.313	-0.751***	0.130
	(0.17)	(0.35)	(0.06)	(0.25)
	[666]	[666]	[693]	[693]
Cinder blocks	-1.715***	-0.267	-0.827***	-0.061
	(0.23)	(0.17)	(0.06)	(0.14)
	[900]	[900]	[1,078]	[1,078]

Notes: Results from estimating demand isoelastic curves separately for each product. Standard errors clustered by plant are shown in parentheses. Average income is proxied by average luminosity of night lights in the urban agglomeration where the plant is located. *** significance at 1% level, ** significance at 5% level, * significance at 10* level.

Table 3: Evolution of Key Variables				
Full Sample	Unweighted Regression		Weighted Regression	
	Exit	Entry	Exit	Entry
TFPR	-0.0928*** (0.028)	-0.0294 (0.026)	**-0.0831*** (0.028)**	-0.0400 (0.026)
TFPQ	-0.130** (0.066)	-0.0228 (0.061)	-0.0959 (0.067)	-0.0164 (0.065)
Price	-0.1520*** (0.041)	0.1420*** (0.043)	**-0.1510*** (0.043)**	**0.1310*** (0.046)**
Idiosyncratic demand shocks	0.1190 (0.108)	-0.3290*** (0.085)	0.119 (0.112)	**-0.321*** (0.089)**

Note: This table presents the difference in means between entering & exiting plants. These differences are computed by regressing each of our four key variables (lntfpr, lntfpq, price, and idiosyncratic demand) on entry and exit dummies as well as product-year fixed effects. Standard errors clustered at the plant level are shown in parentheses. Our pooled sample has between 2,200 and 2,400 observations depending upon the specification. Weighted regressions are weighted by producer-level revenues. *** and ** indicate significance at 1% and 5% level, respectively.

Table 4: Evolution of Key Variables by City Type

By City Type:	Addis Ababa		Secondary Cities	
	Exit	Entry	Exit	Entry
TFPR	**-0.1430****	-0.0151	-0.0429	-0.0553
	(0.057)	(0.048)	(0.030)	(0.032)
TFPQ	-0.0580	0.1710	-0.1030	-0.0647
	(0.136)	(0.125)	(0.076)	(0.075)
Price	**-0.2690*****	-0.0996	**-0.104****	**0.208*****
	(0.086)	(0.101)	**(0.048)**	**(0.047)**
Idiosyncratic demand shocks	0.1690	0.1980	0.100	**-0.382*****
	(0.219)	(0.185)	(0.128)	**(0.101)**

Note: This table presents the difference in means between entering & exiting plants. These differences are computed by regressing each of our four key variables (lntfpr, lntfpq, price, and idiosyncratic demand) on entry and exit dummies as well as product-year fixed effects. Standard errors clustered at the plant level are shown in parentheses. Our pooled sample has between 2,200 and 2,400 observations depending upon the specification. All regressions are weighted by producer-level revenues. *** and ** indicate significance at 1% and 5% level, respectively.

Table 5: Selection on Profitability or Productivity

	Exit	Exit	Exit	Exit
TFPR	-0.224** (0.0783)			
TFPQ		-0.0503 (0.0295)		
Price			-0.153*** (0.0279)	
Demand				-0.0153 (0.0158)
Observations	2271	2282	2566	2427

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 6: Selection on Profitability or Productivity with added Controls

	Exit	Exit	Exit	Exit
TFPR	-0.115			
	(0.104)			
Addis	0.0682	0.0557	0.0697	0.107
	(0.0907)	(0.0894)	(0.0879)	(0.0878)
Producer density	0.0850	0.0918	0.0847	0.0701
	(0.0655)	(0.0648)	(0.0641)	(0.0638)
Firm age	-0.170**	-0.166**	-0.174**	-0.160**
	(0.0563)	(0.0555)	(0.0546)	(0.0563)
Capital	-0.0387	-0.0369	-0.0341	-0.0299
	(0.0216)	(0.0212)	(0.0210)	(0.0209)
Transport costs	-0.0958***	-0.100***	-0.100***	-0.0946***
	(0.0228)	(0.0216)	(0.0215)	(0.0220)
TFPQ		-0.0747*		
		(0.0341)		
Price			-0.158	
			(0.0857)	
Demand				-0.00605
				(0.0219)
Observations	1661	1671	1726	1648

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$