

Institute for Advanced Development Studies



Development Research Working Paper Series

No. 08/2009

Understanding Productivity Levels, Dispersion and Growth in the Leather Shoe Industry: Effects of Size and Informality

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August 2009

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Understanding Productivity Levels, Dispersion and Growth in the Leather Shoe Industry: Effects of Size and Informality[♥]

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Abstract

In this case study performed on the industrial sub-sector of manufacture of leather shoes in Bolivia, we use the Hsieh and Klenow model (2008) to determine the differences between productivity of larger and formal companies and productivity of smaller and informal companies. Our results reveal that there are not many differences in terms of productivity among these types of companies. We think that informality is indeed the most important factor that contributes to this phenomenon. Apparently, the decrease in costs associated with informality compensates to some extent the economies of scale of formal companies with bigger dimensions and better technology. A notable fact in the shoe manufacturing industry is that it had experienced an atomization process in the last years. This trend is the consequence of a progressive creation of many small informal companies instead of the consolidation of this industry in medium and large formal companies. In a way, informality has contributed to this process. First, because it allows the survival of less productive companies that if they were not informal, they would have to bear costs that would not allow them to continue in business. Second, because informality creates strong incentives for employees to start their own business. In the other hand, many costs associated to formality discourage legally operating companies to employ more people, raise capital and growth.

[♥] We thank Jose Miguel Lanza from Krear Soluciones for his help at the beginning of this research project. We appreciate the collaboration of Diagnosis S.R.L. in the organization of the Focus Groups. Financial support from Latin American Research Network (IDB) is gratefully acknowledged. The usual disclaimer applies.

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1 INTRODUCTION

Some studies performed during recent years² show that reassignment of capital and labor from less productive to more productive companies are a significant source for the increase in productivity. There is also evidence of distortions of different nature that prevent the flow of productive resources towards more efficient companies and distortions that prevent these companies to capture a higher market share. In a way, these elements allow survival of less productive companies.

This case study analyzes such matters in the sub-sector of manufacture of shoes in Bolivia. This industry was chosen because it shows important features that are of particular interest for this study. First, because there is a process of generation of less productive companies instead of a consolidation process of just a few more productive ones. Second, because the atomization of the sector in small less productive companies responds significantly to the high degree of informality in which the Bolivian Economy and this particular sector operates. Without the inherent informality condition many small companies would not be able to bear their operational costs.

The relative ease, with which an informal company can be incorporated, encourages former employees of bigger companies to start their own business once they acquire experience in the business and have saved enough to purchase their first equipment. This usually takes place between three to four years after having started in the business. This happens because as owners of informal micro-companies they earn more than as employees of large productive companies.

On another hand, it is important to note that costs associated to formality discourage legally operating companies to employ more people. Furthermore, in some cases these same companies encourage some of their employees to start their own (informal) business in order to subcontract them later for specific tasks. This way, legally operating companies avoid higher labor costs.

Informality has different effects on productivity. Economic theory recognizes that, on one hand, informality reduces some costs and provides higher flexibility needed to survive under difficult circumstances. However, it also makes access to capital, investment capability and the

² See Restuccia and Rogerson (2008) and Hsieh and Klenow (2008)

possibilities to establish partnerships with domestic and foreign investors more difficult, thus limiting potential profits in efficiency that could be obtained.

The analysis performed in this case study reveals that in the sub-sector of manufacture of shoes there are no significant differences as could be expected between the productivity of a large formally operating company, and smaller and informal ones. As a matter of fact, the sample under analysis includes only one formal company that differentiates from all others. The other formal companies contribute to Total Factor Productivity (TFP) of the sector in similar amount as informal companies.

This could signify that the decrease of costs associated with informality compensates in some extent the economies of scale of formal companies with bigger dimensions, that use technology intensively and that have access to better financing conditions. For several years, different government administrations have unsuccessfully attempted to implement strategies for the formalization of the industry with the purpose of broadening the tax base of the contributors. It is clear that for this to succeed, it is necessary to create market conditions that could be more favorable for such formalization.

It is also important to mention that the results reveal that labor generation in the formal market on the shoe industry has been poor; we think that this is mainly a result of heavy regulations. At the end, the formal market has been incapable to absorb, under positive conditions, a growing labor force. The growth of the formal market demands a careful combination of reforms in different areas closely related. Among the priorities are: reforms to the tax system, higher liberalization of the labor market, reforms to the mechanisms of contribution to social security, conditions that promote the development of trade markets, improvements to the legal system to guarantee and promote incorporation and to provide legal security to investments. These reforms would also encourage a raise in the level of direct foreign investments, which could also contribute to economic growth in the long term.

This document is structured as follows: Section 2 shows the methodology employed. Section 3 explains the difference in productivity between companies according to their dimensions and legal situation, for which a model developed by Hsieh and Klenow (2008) is employed. Section 4 shows that the decrease of costs associated with informality compensates to some extent the economies of scale of formal companies with bigger dimensions. Section 5

explains the generation process of small informal companies. Last, section 6 presents some conclusions.

2 METHODOLOGY

For this case study we used quantitative and qualitative data from the sub-sector of manufacture of leather shoes. The quantitative data was obtained from the "Encuesta Anual a la Industria Manufacturera" (Bolivian Annual Manufacturing Survey, or EAIM for its initials in Spanish), the quantitative data was obtained from polls, focal groups and detailed interviews with entrepreneurs. This process, performed in several phases, allowed us illustrating the atomization process in the industry of shoe manufacture among small informal companies, and the failure to consolidate this sector among formal companies of larger dimensions.

2.1 QUANTITATIVE ANALYSIS

2.1.1 The Data

In order to perform a detailed analysis of the productivity of any sector, it is necessary to have access to firm level data. In Bolivia that kind of information is scarce and usually not updated. The data base with the broader number of companies is currently the "Encuesta Anual a la Industria Manufacturera" (Bolivian Annual Manufacturing Survey) that was performed between 1988 and 2001 by the "Instituto Nacional de Estadísticas" (National Institute of Statistics or INE for its initials in Spanish).³

The EAIM includes information regarding employment, salary, production, capital, taxes, selected expenditures, among others, from companies that are registered before the Tax Authority. In order to perform this case study, the data from companies classified as manufacturers of leather shoes was used (ISIC 1920). This data base provided information on the most important company of shoe manufacture in Bolivia (MANACO) and information on other 4 formal companies. These are all the true formal companies in the business during this period. Additionally, information on other 19 companies was available, but despite being registered before the Tax Authority, said companies did not meet some requirements to be qualified as

³ In 2008, the INE performed once again this survey.

formal. Therefore, for all intents and purposes, they are taken as informal. With this information the Total Productivity Factor (TFP) was calculated, using the Hsieh and Klenow model (2008).

For the calculation of the TFP an average of 12 companies between 1988 and 2001 were available (see Table 1). This responds to the sampling system employed by INE that included in its sample all large and medium-size companies registered in the market each year, and selected randomly between small and micro companies⁴.

For a company to be considered formal a registration before the Tax Authority is not enough. It is also necessary that the company is registered before the Ministry of Labor, that its employees are affiliated to Social Security, meaning affiliation to any of the Pension Funds Administrators (or AFP's for their initials in Spanish) and to Public Health Maintenance Organization (HMO). Therefore, with the exception of 5 companies, all other companies included in the data base present some characteristics that render them informal.

The first step to formalize a company is its legal registration before the National Trade Register, currently being administrated by the non profit organization Fundación para el Desarrollo Empresarial (FUNDEMPRESA, for its initials in Spanish). The second is its registration before the Tax Authority, which grants a "Número de Identificación Tributaria" (Tax Identification Number, or NIT for its initials in Spanish). Once all this requirements have been met the company is able to legally subscribe agreements. There are some other steps that should be followed: the registration of the company in the Ministry of Labor, the affiliation of its employees to the Social Security System, including both the Bolivian HMO⁵ and the AFP's. Companies that have pursued some formalization usually stop after the second step. It is interesting to discover that almost none is registered before the Ministry of Labor neither the Social Security System.

All companies included in EAIM's data base are registered before at least one office or authority. However, in the business selected for the case study, few are registered before the Social Security System. As a matter of fact, in the present only 122 of them in Bolivia reached the second step of formalization⁶. Taking that into account, it is calculated that less than 1% of companies of this industry meet all of the formality requirements. As an example, in an

⁴ The sampling system used by the INE is unknown for the authors.

⁵ Which comprises the following organizations: Caja Nacional de Salud, Caja Bancaria, Caja Petrolera and Caja Universitaria?

⁶ The data was provided by one AFP that performed an investigation to identify which companies in this and other activities have some kind of registration, but are not affiliated to the social security system.

estimated universe of more than 1,000 companies dedicated to this activity in the whole country only 67 keep an updated their trade registry and only 9 have employees affiliated to AFP's⁷.

The data base includes companies of different dimensions⁸, that is to say, micro-companies (less than 5 employees), small companies (between 5 and 14 employees), medium-size companies (between 15 and 49 employees) and large companies (over 50 employees). Table 1 shows the amount of companies that were listed in the data base, according to their size.

Table 1: Amount of companies, classified by size

| Firm's Size | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|-------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Micro | 1 | 1 | 2 | 1 | 3 | 1 | 1 | 1 | 1 | 2 | 2 | 4 | 2 | 2 |
| Small | 2 | 4 | 5 | 5 | 3 | 5 | 4 | 6 | 4 | 4 | 6 | 4 | 1 | 3 |
| Medium | 3 | 2 | 1 | 4 | 4 | 5 | 5 | 7 | 6 | 7 | 3 | 2 | 2 | 1 |
| Large | 3 | 3 | 4 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 |
| Total | 9 | 10 | 12 | 13 | 13 | 14 | 12 | 16 | 13 | 15 | 13 | 13 | 8 | 9 |

Source: EAIM

2.1 QUALITATIVE ANALYSIS

Besides the information obtained from EAIM, qualitative and quantitative information was obtained from other 177 informal companies. Additionally, interviews were performed to MANACO, which is, by significant margin, the most important manufacturer in Bolivia and who, additionally, is the only strictly formal surviving company of the 1988-2001 period.

Thus interviews to 21 companies were performed, 4 focal groups with managers or owners of other companies were achieved, and 5 detailed interviews in other 5 companies were performed. With the exception of MANACO, the selection of these companies was random, being the only requirement that the company be at least 3 years old⁹. Last, secondary information was obtained from other 126 companies that operate in the city of El Alto¹⁰.

This way it was possible to obtain information on how and when these companies started operations, their perception on their own position in the market, the environment in which they operate, the problems they have to deal with, their commercial strategy, the technology used, the

⁷ This information was obtained through interviews to associations of micro-entrepreneurs and to the industry and trade chambers of the region. However, in Bolivia no industrial census is available that might confirm this information.

⁸ The only parameter employed by INE to categorize companies by size is the number of employees.

⁹ For this task the firm Diagnosis was hired, being it specialized in opinion studies and social development.

¹⁰ The information was obtained from the "Primer Censo de Establecimientos Industriales de la Ciudad de El Alto" (First Census of Industrial Establishments of El Alto). This is the only census among industries performed so far in this city, which is one of the most important cities in Bolivia due to its industrial presence. 61% of shoe manufacture companies started during the period of analysis (1988-2001).

characteristics of their labor, the salary system. It was also possible to learn their opinion on formality and informality.

On average, informal companies hire 3 employees and only 39% of their labor receives a salary, meaning that most of these are family owned micro-companies that hire someone outside the family, to whom the salary is paid. Of these companies 88% have access to water system, 67% to sewer system, and 96% to electricity.

Most of them operate in the same building where the owner lives, which verifies the use of living quarters as a productive structure¹¹. A share of 89% of the interviewed companies does not pay taxes as required by Law on a regular basis. This happens even with those companies that are registered before the Tax Authority.

3 DIFFERENCE IN AGGREGATE PRODUCTIVITY BETWEEN COMPANIES

3.1 THE MODEL

As mentioned before, the Hsieh and Klenow (2008) model was used to determine the difference between productivity of formal companies and productivity of informal companies in the shoe manufacture industry. This method is based upon a monopolistic competition model with heterogeneous agents, and is used to illustrate the misallocation of resources on productivity. In order to do so, data at the industry-level is used. The main idea behind the model is that a poor assignment of resources diminishes productivity, and this inefficiency responds to distortions of varied nature. These distortions can be: elevated transportation costs, subsidies to certain groups or industries, significant differences in access to capital, among many others. This study identifies as a major market distortion the informality, which equals to a subsidy in favor of a group of companies, in this case of the same industry, manifested in no paying taxes and a significantly decrease of labor costs due to no paying some or all social benefits to which employees have legal right.

¹¹ Laird et.al. (1996), in a study commissioned by the Interamerican Development Bank, admit that residential housing is also used as offices for many micro-companies and as matter of fact constitutes one of the most important ways of employment in the region, besides being a sector that offers, to most people with low income, unexplored mercantile opportunities.

This model allows us to obtain two productivity measures: the TFPQ, which is a physical productivity measure, and the TFPR, which is a revenue productivity measure. To illustrate the intuition behind the expression for aggregate TFP, it is useful to show that the firm-specific distortions can be measured by the firm's revenue productivity. It is more common to have industry deflators than plant-specific deflators. When industry deflators are used, differences in plant-specific prices show up in the traditional measure of plant TFP. Therefore it is necessary to distinguish between a "physical productivity" measure and a "revenue productivity" measure. In fact, TFPQ refers to productivity per se and TFPR refers to the level of distortions as a reflect of the misallocation of capital and labor across firms.¹²

The main equations of this model are the following:

$$1 + \tau_{K_{si}} = \frac{\alpha_s}{1 - \alpha_s} \frac{wL_{si}}{RK_{si}} \quad (a)$$

$$1 + \tau_{Y_{si}} = \frac{\sigma}{\sigma - 1} \frac{wL_{si}}{(1 - \alpha_s)P_{si}Y_{si}} \quad (b)$$

$$A_{si} = \frac{(P_{si}Y_{si})^{\frac{\sigma}{\sigma-1}}}{K_{si}^{\alpha_s} (wL_{si})^{1-\alpha_s}} \quad (c)$$

where $\tau_{K_{si}}$ and $\tau_{Y_{si}}$, are the capital and product distortions, respectively; A_{si} is the physical productivity (TFPQ), and the equations employ information related to the value-added ($P_{si}Y_{si}$), remunerations (wL_{si}) and capital (K_{si}). The parameter α represents the elasticity of output with respect to capital and the parameter σ represents the elasticity substitution between plant value-added¹³.

3.2 ARE COMPANIES WITH LARGER DIMENSIONS MORE PRODUCTIVE?

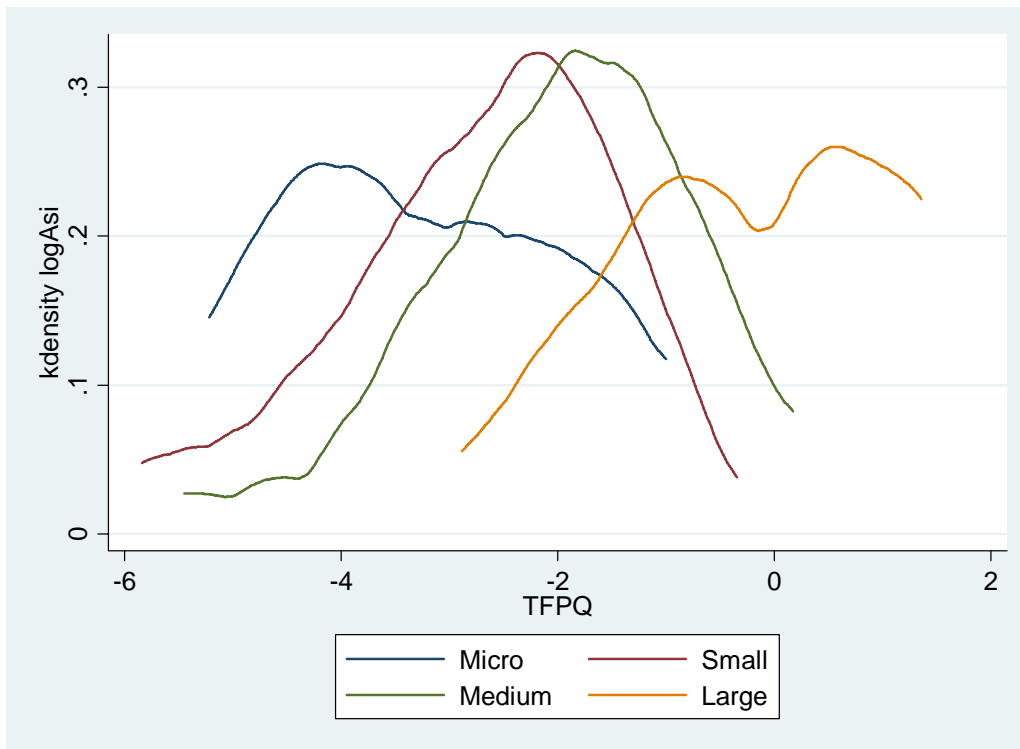
First, we analyze the differences in productivity between companies of different sizes during the period of 1988-2001. Figure N° 1 shows Kernel densities for the TFPQ of these companies. It

¹² See Foster, Haltiwanger and Syverson (2008)

¹³ See Hsieh and Klenow (2008) for a detailed explanation of the model.

can be seen that, on average, companies of larger size show a higher productivity level, shown by a TFPQ distribution that moves to the right as the size of the companies increase.

Figure 1: Estimated Density Kernels of TFPQ by Firm Size

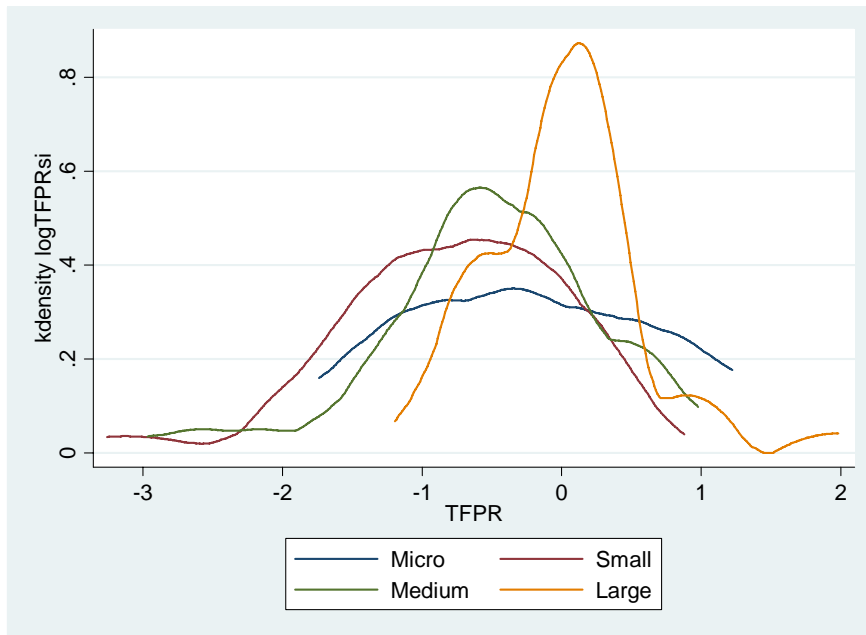


Source: Study's own elaboration, upon data from EAIM 1998-2001.

However, a juxtaposition between curves is noticed, which shows that there are micro and small companies that reach physical productivity levels similar to those registered by some of the larger companies. Another element worth mentioning is that there is higher dispersion of productivity within micro and large companies than within small and medium-size companies. In Figure N° 1 the curves of Kernel distribution are wider for micro and large companies.

Something similar occurs when Kernel's density functions are calculated in relation to TFPR. However, it deserves attention that in terms of TFPR there is more overlapping of curves and a greater dispersion between micro and small companies can be noticed. The results are illustrated in Figure N° 2.

Figure 2: Estimated Density Kernels of TFPR by Firm Size

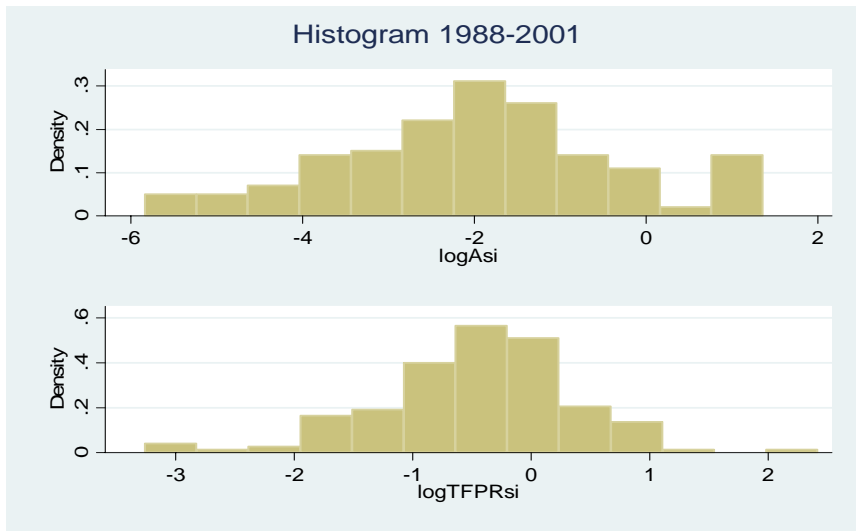


Source: Study's own elaboration, upon data from EAIM 1998-2001.

Figure 3 shows the frequency histograms of the logarithm relative to the average of the two productivity measures used (TFPQ and TFPR). It can be noticed that the higher TFPQ concentration level closes around -2, while the higher TFPR concentration level is located around a 0 value. The sample uses companies of varied size. The average TFPQ is -1.98 and the median is -1.91 (average for the entire period); while the average TFPR is -0.33 and the median is -0.22 (average for the entire period). This leads to postulate that, with some exceptions (the exception is MANACO), there are no “significant” differences in productivity between companies of different sizes.

There is no doubt that in the sample of companies being analyzed MANACO marks the exception since it contributes to 92% of TFP in the sector during the period under analysis (1989-2001).

Figure 3: Histogram of (log) TFPQ and TFPR



Source: Study’s own elaboration, upon data from EAIM 1998-2001.

The model used allows calculating profits which would be obtained upon limiting the distortions that prevent a better labor and capital assignment between companies. The results are shown in Table N° 2.

Table 2: Profits of liberalization

| 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 |
|-------|-------|--------|-------|--------|-------|-------|
| 11.7% | 26.4% | 20.8% | 19.2% | 256.0% | 27.3% | 17.7% |
| 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
| 19.5% | 22.2% | 147.9% | 13.8% | 15.7% | 11.2% | 12.6% |

Source: Study’s own elaboration, upon data from EAIM 1998-2001.

With the exception of years 1992 and 1997, the profits upon the elimination of distortions are considerably low during the period under study (1998-2001), this is due to the small number of firms in the sample, in this situation MANACO (the most efficient firm) concentrate a big percentage of the labor force and capital. During the period under analysis, MANACO contributed to 87% of the total value added of the sample of companies in this sector, to 82% of employment and to 80% of the capital. Evidently, under this situation, it is logical to obtain low profits from liberalization of restrictions, because a significant part of labor and capital are already located in the most efficient company.

The extraordinary gains reported in the years 1992 and 1997 respond to some data issues for two particular companies in those years. During those years the quantity of capital registered

for those companies was considerably high and their contribution to the sector's value added continued to be low. Therefore, it is possible that a mistake was made by INE during the data input. It is evident that when companies concentrate significant amounts of capital and, at the same time, make poor contributions to the sector's value added there are higher opportunities to obtain profits by liberalizing restrictions.

The results reveal that the size of a company (with the exception of MANACO) does not carry significant differences in productivity. If that is so, it is not surprising that there is a generation process of small and micro-companies instead of an increase in size and a consolidation of the industry in companies of larger dimensions. In fact, MANACO is the only big company of the sample which is still operating.

It is important to point out here that "PYMES" (Small and medium-size companies, according to the initials in Spanish) that took part in focal groups considered themselves as productive as larger companies. Besides, they linked productivity mainly to the quality of the product. Many of them sustained that producing hand-made, as opposed to in-line production like large companies, allows them to obtain shoes of better quality. Besides, they were able to generate higher profits renewing models on a weekly basis, something not achieved by larger companies, who take longer to launch new models¹⁴. Some small companies also consider that they offer to their clients a customized product and personalized post-sale services; something that would be impossible to achieve if they were operating in a large production scale.

3.3 ARE FORMAL COMPANIES MORE PRODUCTIVE?

In order to answer this, the difference in physical productivity between formal and informal included in the data base was calculated. It is evident that there is a direct link between the size of a company and its degree of formality. However, it is also true that companies of same size may choose or not for formality. That being said, Figure N° 4 shows Kernel densities for TFPQ of both formal and informal companies.

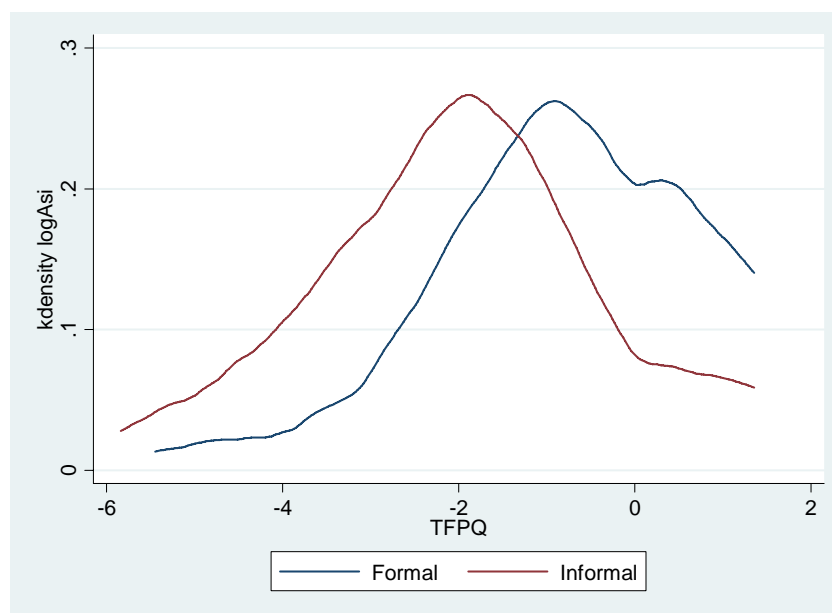
To differentiate formal companies from informal ones, the definition by World Employment Program (WEP) of the International Labor Organization (ILO) was adopted. It qualifies as informal those productive units to which legislation in force does not apply, total or

¹⁴ Actually, PYMES do not create new models but rather copy those found in fashion magazines, websites or stores that import shoes.

partially. Following this, the sample was distributed between formal and informal companies, considering as formal only those companies that meet all registration requirements established by law.

Figure N° 4 shows that formal companies tend to be more productive, but not significantly more than informal ones. However, it is possible that it is not being formal but rather their size (economies of scale) what generates a productivity that tends to be larger.

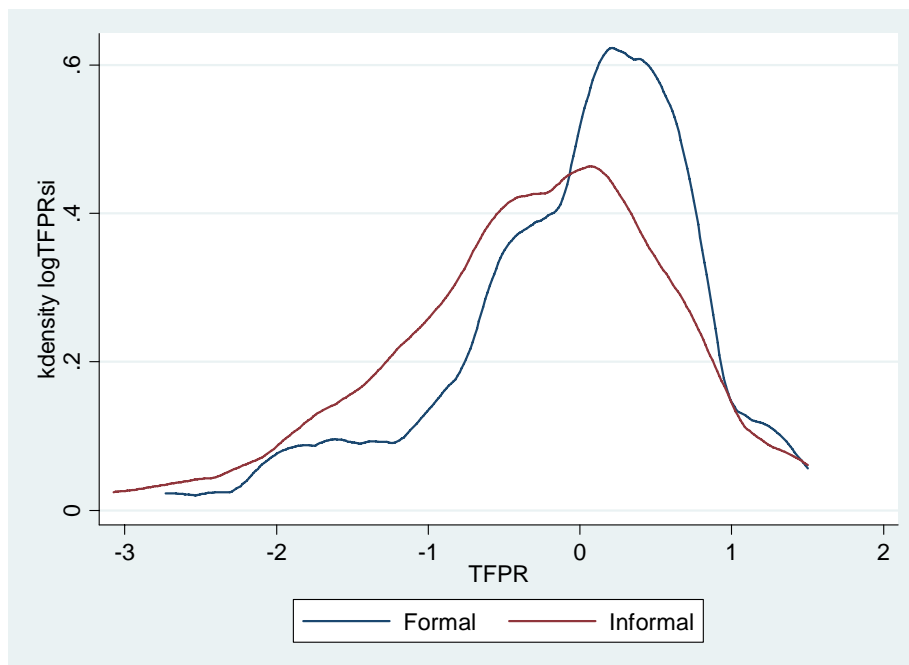
Figure 4: Estimated Density Kernels of TFPQ by formal and informal situation of The forms



Source: Study's own elaboration, upon data from EAIM 1998-2001.

Figure N° 5 shows that, in terms of benefits, the difference between formal and informal companies is narrower. From our point of view, this reflects that revenues of informal companies due to reductions of labor and tax costs results in TFPR levels similar to those of formal companies with bigger dimensions and better technology.

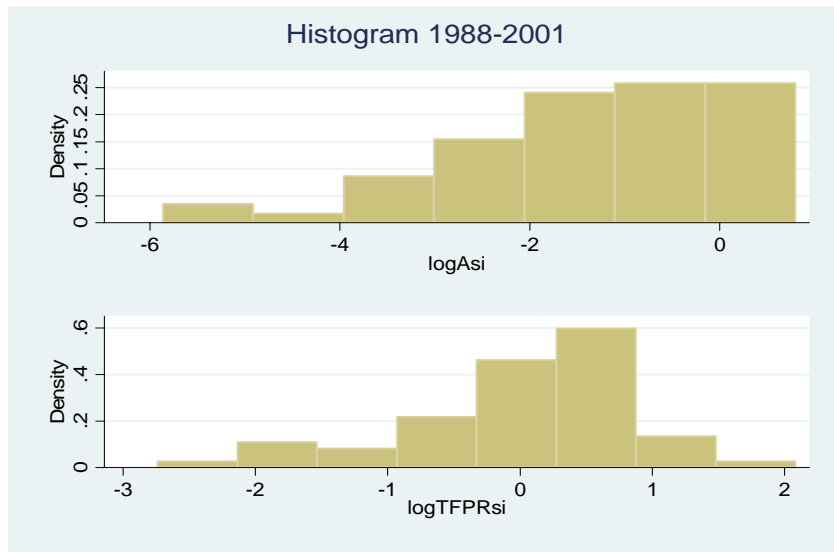
Figure 5: Estimated Density Kernels of TFPR by formal and informal situation of The forms



Source: Study's own elaboration, upon data from EAIM 1998-2001.

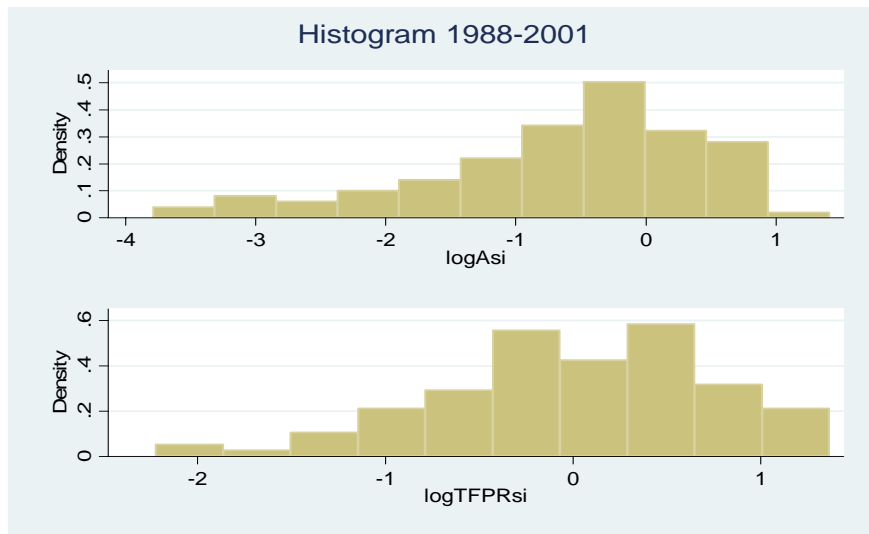
It can also be noticed that there is a larger dispersion of revenue productivity among informal companies than among formal ones. Complementing what is aforementioned, frequency histograms of the logarithm applied to the average of both productivity measures used (TFPQ y TFPR) are presented as follows. This was performed on formal companies first (Figure N° 6) and then on informal companies (Figure N° 7).

Figure 6: Histogram of (log) TFPQ y TFPR – Formal companies



Source: Study's own elaboration, upon data from EAIM 1998-2001.

Figure 7: Histogram of (log) TFPQ y TFPR – Informal companies



Source: Study's own elaboration, upon data from EAIM 1998-2001.

It is worth pointing out, once again, that informal companies show similar values of (log) TFPQ and (log) TFPR, being them in average smaller in size and using less technology. This could signify that the decrease of costs associated with informality compensates to some extent the economies of scale of formal companies with bigger dimensions, that use technology intensively and that have access to better financing conditions.

We also calculated the gains that would be obtained with the eliminations of distortions in the formal sector and in the informal sector. The elimination of distortions consists in equalizing the revenue productivity (TFPR) among firms.

This is shown in Tables N° 3 and 4. The elimination of distortions would produce higher gains in value-added value among informal companies. This indicates again the big importance of MANACO in the formal sector, which contributes to improve the allocation of resources. In the other hand, there are more opportunities to obtain gains in the informal sector because the allocation of resources is not so efficient.

Table 3: Profits of liberalization among formal companies

| | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 |
| 10.2% | 16.2% | 16.3% | 14.8% | 245.2% | 24.5% | 13.5% |
| 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
| 14.0% | 17.6% | 109.9% | 9.3% | 11.6% | 10.3% | 9.6% |

Source: Author's calculations

Table 4: Profits of liberalization among informal companies

| | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 |
| 25.1% | 83.8% | 47.3% | 96.8% | 32.7% | 25.6% | 55.3% |
| 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
| 53.1% | 48.2% | 59.8% | 139.4% | 242.5% | 40.7% | 101.6% |

Source: Author's calculations

4 INFORMALITY: LESS OBSTACLES AND SIMILAR RESULTS

One thing that might explain why the industry of shoe manufacture is unwilling to consolidate in large companies that absorb more labor and wider market shares, is the lack of significant difference between most of the major firms productivity and the productivity of smaller size companies. The phenomenon that emerges then is the atomization of the industry in smaller scale companies. In addition, the gains in terms of value added that would be obtained when restrictions are eliminated, are significantly higher among informal companies than between formal companies.

The slight difference in productivity between formal and informal companies responds in certain degree to the fact that larger companies have to face the competition from a considerable number of informal companies smaller in size, besides the competition from black market (contraband). Informality confers benefits similar to those from subsidy. Informality reduces

some costs significantly, and apparently the benefits conferred by formality (better access to financing, etc.) are not so significant.

Bolivia is a country where regulation reaches few companies. Therefore, it is unlikely that an informal company ends up under scrutiny of the Ministry of Labor or the Tax Authority. If this were the case, why do some small and medium-size companies become formal? In order to answer this, it is important to note that few companies should be considered actually formal. Their level of formalization ends in obtaining a tax registration (NIT) and a trade registration in the best case scenarios. With these two registrations a company is able to operate without affiliating its employees to social security, including both HMO and retirement plan.

4.1 CONSIDERATIONS REGARDING THE TAX SYSTEM

The Bolivian tax system includes two categories defined by a series of criteria related to the size of a company. The General Tax Regime (GTR) which is applied mainly to medium and large companies and comprises different taxes; and the Simplified Tax Regime (STR) which is applied mostly to micro and small companies and it is characterized by a fusion in one single tax of all other taxes applied in the General Regime, establishing differentiated scales according to capital declared by these companies.

Most companies that are registered before the Tax Authority actually do not pay taxes, or if they do it is done in no regular basis. There are many ways to perform a sale without issuing an invoice and/or different bookkeeping mechanisms to avoid paying taxes. In Bolivia, companies qualified as industries have to pay three taxes if they operate under the General Tax Regime: (i) Value Added Tax of 13% (VAT, or IVA for its initials in Spanish), (ii) Transaction Tax of 3% (IT for its initials in Spanish), (iii) and Revenue Tax of 25% (IUE for its initials in Spanish).

As mentioned above, small companies have the possibility of obtaining a simplified status to declare and pay taxes. The STR was created during the 80s in order to achieve that small companies also pay taxes¹⁵. This law recognizes that productive units in this tax category do not have financial registries and do not register their transactions following Generally Accepted Accounting Principles (GAAP). Therefore, the tax for this category is only one and it is calculated exclusively according the capital declared by the companies that achieve this

¹⁵ The STR was modified in 1997 and 2004, but it remains essentially the same.

status¹⁶. Meaning that, contrary to those companies that pay taxes under the GTR, companies under STR pay only one tax, and do so bimonthly.

The following table shows the bimonthly payment of taxes for companies under STR:

Table 5: Simplified status

| Category | Capital (US\$)* | | Bimonthly payment (US\$)* |
|----------|-----------------|-------|---------------------------|
| | From | To | |
| 1 | 1,697 | 2,122 | 6.6 |
| 2 | 2,123 | 2,645 | 12.8 |
| 3 | 2,646 | 3,324 | 20.8 |
| 4 | 3,325 | 4,173 | 22.3 |
| 5 | 4,174 | 5,233 | 28.3 |

Source: D.S. No 27924

* Exchange rate to calculate values from Bs to US\$: 7.07 Bs/ 1US\$

To develop further considerations regarding the conception of this tax exceeds the goals of this study. However, it is important to take note of at least two effects of this tax institution. First: many companies with capital significantly higher to the limit allowed by law use the simplified status, and are able to do so because tax authorities do not have enough control mechanisms. Second: companies with a capital significantly higher to the limit allowed by law to have access to STR, may divide the company in several smaller companies and thus qualify for simplified status. This is possible because the sum of taxes paid by these small companies under simplified status would be significantly lower than taxes that should be paid by one single larger company under the GTR.

It is important to mention that the results of the application of STR in terms of tax takings are disappointing. For example, a 2001 report from “Unidad de Políticas Económicas” (Economical Policies Unit or UDAPE for its initials in Spanish)¹⁷, estimated that companies belonging to simplified status contributed, in average, with approximately US\$ 8.00/year during the 1998-2000 period. This shows that despite the fact that taxes under STR are considerably low, small companies do not pay them.

¹⁶ Tax authorities demands that companies produce invoices from acquisition of machinery and equipment that sustain their declaration. However, in several cases there are no invoices. In these cases, the tax authority is empowered to audit the company in order to verify the declaration. Unfortunately, there are no resources to perform audits regularly to a critical number of companies that could determine who among them does actually qualify for STR.

¹⁷ See UDAPE (2001)

In 2000, the number of tax payers under simplified status reached 27% of the total number of tax payers. However, the contribution of this sector to the total amount of taxes collected was of merely 0.1%.

It is important to mention here that companies belonging to STR have to deal with some limitations. For example, they do not issue invoices and therefore their market is reduced to clients that do not engage in mayor transactions. However, transcending from STR to GTR might imply additional costs in terms of taxes, these costs could be so high that discourages small companies that aim to grow and change their tax status.

4.2 CONSIDERATIONS REGARDING THE SOCIAL SECURITY SYSTEM

Besides taxes, formal companies have to face other costs related to their employees' social benefits, something that informal companies avoid. A formal company must deposit contributions to social security as employer, pay mandatory Christmas bonuses, and pay every 5 years, 5 extra salaries (which is called *quinquenio*). When an employee is fired, the money saved as prevision for the *quinquenio* is used to pay indemnification for termination of employment.

All this increases labor costs in around 30%. Thus, formal companies spend, on the basis of salaries, 10% as contribution to HMO, 1.75% for insurance against professional risks, 2% as commissions to the Pension Funds Administrators (AFP's), 8% as Christmas bonus and 8% as "quinquenio".

On another hand, employees of formal companies also have to pay a 13% tax (RC-IVA) and are required to contribute to social security for their retirement plans (13.71%). In this case it is the company who acts as retention agent. It is very common that employees prefer to start their own business instead of having to bear all these costs.

An interesting result of the focal groups is that most business owners from the shoe industry believe that informality is a natural condition. It is an option like any other and does not reflect a violation to a law or regulation. For many of them it is even a right of small companies, and formality is only reserved to large companies that export their products.

4.3 GENERAL CHARACTERISTICS OF THE SYSTEM OF PAYMENT OF SALARIES AND OF LABOR CONDITIONS

There are significant differences in the system of payment of salaries between a formal and an informal company in the industry of shoe manufacture. The most common system in informal companies is payment by product (Rossell and Rojas, 2001). That is, salary varies and depends on the employee's productivity. If the production is small, the salary will also be low¹⁸. Owners of informal companies do not have a salary; they simply get the remaining profits once all costs have been paid. On the contrary, formal companies do have a system of payment of fixed salaries with productivity bonuses. However, the schedule of productivity bonuses is different from the system of bonus according the unit of product or payment by product used by informal companies, and it is usually related to revenues obtained by the company.

The system of payment of salaries in informal companies generates that extensions of labor hours know no limits. Payment by product is low and employees require many hours to produce enough to earn a salary that will allow them a decent income. Another characteristic of informal companies is the periodization of labor hired. Informal companies respond to changes in demand of their product by using the number of employees as adjustable variable. That is, informal companies hire and fire employees according to the demands in the market. When employees are fired, no indemnification is rewarded. The flexibility in the labor market used by informal companies grant them advantages on formal companies, who, if were to act the same way, would be forced to pay huge rewards to laid-off employees as indemnifications. It is worth mentioning that, contrary to employees of formal companies, employees of informal companies do not enjoy vacations.

Kruse (1999), points out that the nature of informal groups turn difficult the defense of legal rights be employees. It is common that employees are hired through family members and friends, meaning there are personal links with employers that are difficult to overcome when a claim for labor rights is called for. Unions are non existent due to the dispersion of activities, dispersion and lack of communication between small companies and the familiar nature of employer-employee relationships.

¹⁸ Lazear (2000) tests the predictions that average productivity will rise, the firm will attract a more able workforce, and variance in output across individuals at the firm will rise when it shifts to piece rates.

Section 3 showed that the difference between TFPQ and TFPR among formal and informal is not significant (exception noted regarding the most productive company) and revealed that this could be due to lower costs that informal companies have to face, which translates to productive advantages against their formal peers who despite their larger dimensions and better technology do not obtain better results in terms of productivity. Section 4 revealed three important elements that explain why results are balanced, and these are: taxes, employer's contribution to social security system and the companies' own system for payment of salaries.

However, to analyze the differences between the economical benefits obtained under formality and informality conditions it is necessary to calculate the cash flow of a typical informal company of the industry of shoemaking in Bolivia and the cash flow of that company meeting all requirements of formality. This calculation is presented in Appendix 1. The results reveal that this company would not survive if were formal.

5 THE ROAD TO GENERATION OF SMALL INFORMAL COMPANIES

5.1 LABOR CONDITIONS

During the period under analysis (1988-2001), there was a significant growth among informal micro and small companies in the industry of shoe manufacture in Bolivia. In the city of El Alto alone such growth reached 400%. Between 1988 and 2001 the number of small and micro companies increased from 22 to 102, and 268 jobs were created¹⁹. On the other hand, formal companies experienced the opposite, and with the exception of MANACO they did not create new jobs. It is important to point out that MANACO was the only company that increased its personnel by 17%. However, the other 4 formal companies reduced their personnel significantly, meaning that the whole of the formal sector of shoe manufacture industry lost 20% of its employees.

The question that arises then is: *Why did this industry experience a trend of generation of less productive micro-companies, instead of a process of consolidation o larger more productive ones?* In the previous sections, the study showed that larger formal companies, with the exception of Manaco, do not enjoy higher productivity than smaller companies. Additionally, it

¹⁹ Information obtained from the "Primer Censo a Establecimientos Industriales de la ciudad de El Alto".

was shown that labor conditions in informal companies are lower than such conditions in formal companies. Why, then, does labor flow towards the former?

A first explanation emerges from analyzing the income perspective for employees of a shoe manufacturer. Upon the data provided by the EAIM it was possible to calculate that employees of a large formal company earn approximately from USD 100 to USD 140 a month, and that employees of informal companies earn approximately from USD 50 to USD 100 per month. This data is consistent with a study published by INE in 2008, which analyses the average nominal salary in the private sector according to occupational groups. For the sectors of shoemaking, textile products and clothing the data for the 2004-2007 period are the following:

**Table 6: Average Nominal Salary from Shoe and Textiles Manufactures (2004 – 2007)
(In US Dollars)**

| Year | Managers and administrators | Professionals | Other professionals | Employees | Other employees | Specialized workers | Other workers |
|------|-----------------------------|---------------|---------------------|-----------|-----------------|---------------------|---------------|
| 2004 | 957 | 478 | 424 | 185 | 181 | 80 | 79 |
| 2005 | 1104 | 523 | 471 | 199 | 205 | 83 | 82 |
| 2006 | 1251 | 512 | 359 | 206 | 205 | 83 | 87 |
| 2007 | 1196 | 479 | 336 | 228 | 205 | 87 | 92 |

Source: INE

The polls and focal groups performed in different companies revealed that owners of small and micro-companies that manufacture shoes have an approximate net income between USD 240 and USD 350 per month, which is much higher than the one they might earn as employees of a large company²⁰. This fact explains why after 3 or 4 years of work, which is the time needed for a junior employee to become a “master”, many opt for their own business.

The information above coincides with what is expressed in a study performed by the “Superintendencia de Empresas” (a Superintendency that oversees the private sector) in 2008²¹. Among other things, the study shows that there is a remarkable preference for independent work than for wage-earner employment. This information was obtained from a survey performed among families (MECOVI) in 2005, which asked wage-earners if they would prefer to work independently. About 55% of them answered affirmatively. Apparently, many wage-earners are not satisfied with their income and would prefer to open their own company. When independent workers were asked if they would prefer to be wage-earners, 74% answered that they would

²⁰ In order to perform this calculation, data on weekly sales, average product price and margin of profits from sales (19.28%) from micro and small companies was obtained. The margin of profits is the same as estimated by the “Unidad de Productividad y Competitividad” (Unit of Productivity and Competitiveness) in the first data collection on agents of the leather industry.

²¹ See Morales (2008).

actually prefer to remain independent. According to this study, many independent workers showed a higher preference for their situation due to family tradition, flexibility of schedules and a rejection to having bosses.

Other than the economical incentive, there is a social one, given by the prestige earned as owner of a micro-company rather than being another employee in a bigger company.

Almost all owners of micro-companies interviewed mentioned that they got their first job in the shoe manufacture industry, worked there for some time and later decided to be independent. The growth in number of micro-companies responds to this dynamic. Shoe industries do not retain their personnel for long, nor do they attempt to do so. This is particularly true for small and micro firms. The companies of this sector that, have managed to grow in capital and number of employees are those who included more family members in the business.

Therefore, to any employee of a shoe manufacturer the idea of leaving and running the risk of opening a small or micro company of their own is attractive. However, apparently few among these new enterprises do prosper and grow. One reason is that, with few exceptions, these companies are not born with entrepreneurial perspective, but rather as a survival strategy of their founders, employees themselves in the past, who seek to open their own business in order to increase their income and/or obtain a high social status. Therefore, there is no entrepreneurial perspective, no goals and objectives are defined, and neither is growth planned; they just live the day by day.

5.2 PARTNERSHIPS FOR GROWTH: AN OPTION FOR FEW

Starting partnerships with people outside the family in order to achieve growth for the business does not seem to be an option for most of the owners of small and even medium-size companies that were interviewed. They consider that partnerships bring more problems than benefits. Mistrust seems to be the rule and it is a factor that explains in part the lack of partnerships that could help growth. In addition there is a weak rule of law to enforce contracts. Owners of small companies perceive the Bolivian legal system as corrupt. This prevents fair and clean trials since usually the system benefits those who can pay bribes rather than those who are right.

Besides, the legal system is incomplete. For instance, Bolivia does not have a bankruptcy law as such, only a chapter of its Code of Commerce dedicated to the subject that has been applied in few occasions. In short, following a trial is costly and is beyond the economical

resources of the owners of micro-companies. Therefore, they prefer to avoid legal problems that might arise from legal associations.

There is, however, another kind of partnership, which is actually more related to unions. It is common that in order to execute larger tasks, some micro-companies, usually belonging to the same association, join forces. When this takes place, the main problems they have to face are related to the management of the production. Usually, owners of micro-companies are unable neither to deliver a standard product nor to meet a deadline. Production is complicated further when a task has to be executed in coordination with other micro-companies.

Under these circumstances small companies fail to generate an accumulation process that will allow them to grow in capital and in number of employees. Although as owner of a small company one is in better conditions than as an employee, they have no possibilities of sustainable growth unless they incorporate new family members to the business, who might contribute with capital and labor. Even then it is unlikely that they might become a large company.

In addition, it was noted that many associations of small entrepreneurs were more political oriented than productive oriented. As a matter of fact, an important number of these associations emerged as a resistance force against State regulation and in defense of their common interests. Some of them have as mission to “avoid the abuse of power from different public authorities”. However, it is evident that their goals also comprise the conformation of productive alliances among their associates, the conquest of new markets, the exportation of finished products and the fundraising under favorable conditions (low interest rates and long terms). Although the associations of producers managed to become a social resistance to regulation, they still could not consolidate successful and sustainable productive Alliances.

In general, the reasons lead to the failure of the productive alliances between small firms tie to a lack of legitimate leadership between small business owners (all of them want to be their own bosses), the lack of confidence, a bad management or even an absence of it, deficient calculations of costs, lack of constant markets and the difficulty to homogenize productive processes and products.

5.3 ACCESS TO FINANCIAL RESOURCES FOR INFORMAL “PYMES”

The development of the financial market for micro-companies in Bolivia has allowed “PYMES” to access financial resources, when years earlier they were unable to obtain credits from the traditional financial system. For this study, meetings with key actors of some of the most important micro-financing institutions in Bolivia were held, in order to investigate any policy in force that might limit access to credit in favor of informal companies.

The result of these meetings revealed that it is not formality but rather other aspects what defines PYMES’ access to credit, such as the collaterals the owners might offer, their credit history and the size of their company. However, within this industry, companies that do have some degree of formality usually keep books that help the evaluation of their payment capacity, which might accelerate credits. Informal PYMES do not keep books of any type, there is no distinction between the company’s money and the money of the family that owns the company. Owners of micro and small companies set apart the money necessary to cover their family’s weekly needs, and use all other to pay salaries and to purchase materials. Usually PYMES do not follow a clearly defined reinvestment policy. When higher profits are obtained, these can be used to purchase a new TV for the owner, to provide the company with more raw material, or to acquire new equipment.

The average active interest rate among traditional banks is 13%, while the average active interest rate among micro-financing institutions is around 25%. These are the rates offered in the market. However, there are several trust funds in many micro-financing institutions that offer PYMES, both formal and informal, interest rates much lower than those available in the market. These trust funds are mainly established by international cooperation agencies and by international non-governmental organizations. Since the year 2006 a public bank is operating aimed at supporting PYMES. This bank is the “Banco de Desarrollo Productivo” (Bank for Productive Development, or BDP for its initials in Spanish) and grants loans at subsidized interest rates. The BDP operates as a fiduciary bank, intermediating financial resources towards local micro-financing entities who in turn loan these resources under flexible interest rates. In one of the focal groups performed, one PYME mentioned that it managed to obtain a loan at an interest rate of 6%. The participation of the BDP with subsidized credits to finance the

manufacture sector is considerably low. Until December 31 2007 barely USD 21.5 millions had been given in loans to the manufacturing sector.²²

It is concluded that there are PYMES, both formal and informal, that have access to credit at very variable interest rates. Those more skilled manage to obtain very competitive interest rates from special programs for productive incentive. Others, on another hand, have to bear high financial costs once they get a loan. This might explain to some extent the higher dispersions of companies.

6 CONCLUSIONS

Our results reveal that there are not many differences in terms of productivity among larger and formal companies, and smaller and informal companies in the shoe industry. In fact, there is just one exception to the rule, one company in the formal sector whose performance is outstanding.

We think that informality is the most important factor in balancing the productivity level between formal and informal companies. Apparently, the decrease in costs associated with informality compensates to some extent the economies of scale of formal companies with bigger dimensions and better technology.

During the last years, the shoe manufacturing industry experienced an atomization process in small informal companies instead of a consolidation process in firms with bigger dimensions. There are several reasons that explain this tendency. One reason relates to the cost associated with formality that discourages legally operating companies to employ more people, raise capital and growth. Moreover, in some cases formal companies encourage some of their employees to start their own informal business in order to subcontract them later for specific tasks. This way, legally operating companies avoid higher labor costs.

In the other hand, there are many economic incentives that encourage former employees from large companies to start their own informal business due to the fact that is very easy to start an informal company, and because as owners of small informal companies they earn more money than as employees of large companies and also improve their social status.

It is possible that the main structural challenge to achieve a sector with larger and more productive companies lies within the labor market. Our results show that there are too many regulations and taxes and costs associated to formality that do not respond to the real possibilities

²² BDP was formerly NAFIBO (Nacional Financiera Boliviana).

of formal companies, which hurts employment within the sector. If taxes and regulations are under optimal levels, and they have no relationship to the productivity of the labor force, it becomes evident that the costs related to hiring someone in the formal sector might become in many cases taboo. In order to compensate this, formal companies tend to pay low salaries, which motivates the generation of small and micro-companies, atomizing the industry of shoe manufacture in less productive companies that survive on the advantages provided by informality.

Recent regulations are permanently raising labor costs and restricting temporal employment, being this only legal under limited circumstances. While this is aimed at protecting the rights of the workers, the final result is a decrease of formal employment and a conduction of workers towards informal employment under less favorable circumstances. As a result, not many companies see real motivation for formalization. It is also possible that the costs associated to formality bring few incentives for legal operating companies to grow beyond certain level.

A systemic reform of the labor market is needed in order to improve the incentives in the formal sector. Different levels of contribution to social security might be optimal, which might broaden the number of companies that opt for formalization and start contributing to the system. It might be advisable to allow minimum wage (which has been systematically raised by law during the last few years) to fluctuate according to average salaries, and that minimum wage be differentiated by region, allowing it to respond to actual productivity levels and life standards in each region.

It is also necessary to improve the market for products. The first measure would be to exercise stronger controls against contraband and to eradicate corruption in Customs. Contraband has been a problem for decades and renders Bolivian industry completely defenseless. On another hand, formal companies are exposed to endless regulations that increase the introduction costs for new companies and that create a bureaucracy that exercises discretionary power over just few companies that happen to operate formally. Even worst, the complexity of having to meet numerous regulations raises bureaucracy within the company and with it the management costs, reducing so its profitability.

It is also important to create legal conditions that guarantee domestic and foreign investments, which would encourage growth in the industry. This should be complemented with

policies that induce corporate governance within private companies, in order to turn information more transparent and reduce risks of fraud.

On another hand, it is important to create better access to financing conditions in favor of companies. Any policy aimed at promoting formalization should improve access to credit and equity finance in favor of formal companies. To do so, it is important to promote the market of shares in Bolivia and to encourage companies to be part of it. However, in order to draw on these resources, firms would need to prove a high degree of financial transparency and corporate governance - standards that only the most advanced formal sector enterprises are currently able to meet. Capital markets laws and the Corporate Governance Principles set rigorous financial reporting, external audit and governance standards. As these are demanding standards, the capacity of smaller companies to comply with any new compulsory requirements should be carefully monitored. If the burden turns out to be too high in relation to benefits, then adaptation of the standards for private, smaller firms should be considered.

Finally, it is important to create incentives in all productive segments, whether large, medium, small or micro. Public policies tend to create incentives mainly for PYMES, disregarding larger companies. These policies have failed to turn PYMES into large, solid and profitable companies, nor have they contributed to an increase of productivity. The phenomenon of atomization of the market in small less productive companies continues and this is possible, mainly, due to the ruling informality in Bolivia.

APPENDIX 1: THE CASH FLOW OF A SMALL FIRM: INFORMALITY AND FORMALITY CONDITIONS

In order to compare the cash flow obtained by a company operating under informal conditions, to the one it might obtain if it were strictly formal, data from an actual small company was taken and the cash flow for both scenarios was prepared.

This small company is registered before the Tax Authority under the STR, declared a capital of US\$ 4,055 and recently obtained a loan for US\$ 300 for operating capital. Due to the amount of capital declared, the company is under category 4 of the STR and must pay US\$ 22.30 of taxes bimonthly.

Table N° A1: The cash flow of the firm in informal situation

| | <i>Year 1</i> | <i>Year 2</i> | <i>Year 3</i> | <i>Year 4</i> | <i>Year 5</i> |
|--|---------------|---------------|---------------|---------------|---------------|
| Revenues | 42,549.02 | 42,549.02 | 42,549.02 | 42,549.02 | 42,549.02 |
| (-) Operating expenses | 38,680.93 | 38,680.93 | 38,680.93 | 38,680.93 | 38,680.93 |
| Earnings before interest, taxes, depreciation and amortization (EBITDA) | 3,868.09 | 3,868.09 | 3,868.09 | 3,868.09 | 3,868.09 |
| (-) Depreciaton and Amortization | n.a. | n.a. | n.a. | n.a. | n.a. |
| Earnings before interest and taxes (EBIT) | 3,868.09 | 3,868.09 | 3,868.09 | 3,868.09 | 3,868.09 |
| (-) Interest expenses (24%) | 63.85 | 43.09 | 16.77 | - | - |
| Earnings before taxes (EBIT) | 3,804.24 | 3,825.00 | 3,851.32 | 3,868.09 | 3,868.09 |
| Régimen Simplificado Tax (category 4) | 134.09 | 134.09 | 134.09 | 134.09 | 134.09 |
| Net Income | 3,670.15 | 3,690.91 | 3,717.24 | 3,734.01 | 3,734.01 |
| (+) Depreciation and Amortization | n.a. | n.a. | n.a. | n.a. | n.a. |
| Cash Flow from operations | 3,670.15 | 3,690.91 | 3,717.24 | 3,734.01 | 3,734.01 |
| (+) Capital from the loan | 300.00 | - | - | - | - |
| (-) Value Added Tax (IVA) (included in the Régimen Simplificado Tax) | n.a. | n.a. | n.a. | n.a. | n.a. |
| (-) Transaction Tax (IT) (included in the Régimen Simplificado Tax) | n.a. | n.a. | n.a. | n.a. | n.a. |
| (-) Principal repayments | 77.39 | 98.14 | 124.47 | - | - |
| Free cash Flow to Equity (FCFE) | 3,892.76 | 3,592.77 | 3,592.77 | 3,734.01 | 3,734.01 |

Source: Author's calculations

The company has 6 employees. All of them are paid for unit produced and do not have a labor contract with the company. The company does not make contributions of any kind to the

social security, either to AFP's or the Caja Nacional de Salud. Since the employees do not have a labor contract they do not receive Christmas bonuses or *quinquenios*.

The company sells, in average, 2,760 pair of shoes each year at a price of approximately US\$15.50 per pair. Their unit cost of labor reach US\$ 5.8 per pair and their unit cost of raw material and others expenses reach US\$ 8.2 per pair. With this information, in Table 1 the cash flow for the company described above is presented:

The free cash flow obtained by this small company each year is around USD 3,800 which is equivalent to USD 317 monthly. This is basically what the owner of the small company earns per month. As can be seen, the profits of this small entrepreneur reach the scale of earnings estimated for an owner of this kind of company, and coincides with our estimations obtained from surveys and focal groups during this study.

Now we will demonstrate that if this small company met all requirements imposed by formality, its cash flow would be negative instead of positive. It is important to note that we are talking about the same small company, however, at this time all the costs of formality are being added.

Therefore, for the purposes of this exercise it was assumed that the company makes all the employer's contributions to social security, that are calculated upon the basic salary of the employees as follows: 10% to Caja Nacional de Salud, 1,71 % as prime for professional risks insurance and 0,5% as commission to AFP's; furthermore, as established by the labor legislation in the Ley General del Trabajo, it pays Christmas bonuses and *quinquenio* to its employees²³. With this information it can be calculated that the unit cost of labor reach US\$ 7.57 per pair (31% higher than the current cost).

Since it is being assumed that the company is not anymore under STR but rather under GTR, it should also pay 25% as revenue tax, 3% as transaction tax and 13% as value added tax. It is also being assumed that the company is able to discount 50% of value added tax by presenting invoices for the purchase of materials and others to the tax authority.

With all these suppositions, the hypothetical cash flow of the company would be as follows:

²³ The *quinquenio* is equivalent to one salary per year under employment and is paid every five years. However, if the employee is fired, the money that had been reserved for the *quinquenio* is used to pay the indemnification for wrongful termination, which is also equivalent to one salary per year. For practical purposes, it will be assumed that the company indemnifies its employees every year, that is, it pays the *quinquenio* each year instead of a single payment at the end of the fifth year. This is a preventive measure adopted by some companies.

Table N° A2: The cash flow of the firm in formal situation

| | <i>Year 1</i> | <i>Year 2</i> | <i>Year 3</i> | <i>Year 4</i> | <i>Year 5</i> |
|--|---------------|---------------|---------------|---------------|---------------|
| Revenues | 42,549.02 | 42,549.02 | 42,549.02 | 42,549.02 | 42,549.02 |
| (-) Operating expenses | 43,548.07 | 43,548.07 | 43,548.07 | 43,548.07 | 43,548.07 |
| Earnings before interest, taxes, depreciation and amortization (EBITDA) | (999.05) | (999.05) | (999.05) | (999.05) | (999.05) |
| (-) Depreciación and Amortization | 72.42 | 72.42 | 72.42 | 72.42 | 72.42 |
| Earnings before interest and taxes (EBIT) | (1,071.47) | (1,071.47) | (1,071.47) | (1,071.47) | (1,071.47) |
| (-) Gastos financieros (intereses) (24%) | 63.85 | 43.09 | 16.77 | - | - |
| Earnings before taxes (EBIT) | (1,135.32) | (1,114.56) | (1,088.24) | (1,071.47) | (1,071.47) |
| Taxes (IUE 25%) | - | - | - | - | - |
| Net Income | (1,135.32) | (1,114.56) | (1,088.24) | (1,071.47) | (1,071.47) |
| (+) Depreciation and Amortization | 72.42 | 72.42 | 72.42 | 72.42 | 72.42 |
| Cash Flow from operations | (1,062.90) | (1,042.14) | (1,015.82) | (999.05) | (999.05) |
| (+) Capital from the loan | 300.00 | - | - | - | - |
| (-) Value Added Tax (IVA) (included in the Régimen Simplificado Tax) | 1,472.79 | 1,472.79 | 1,472.79 | 1,472.79 | 1,472.79 |
| (-) Transaction Tax (IT) (included in the Régimen Simplificado Tax) | 1,276.47 | 1,276.47 | 1,276.47 | 1,276.47 | 1,276.47 |
| (-) Principal repayments | 77.39 | 98.14 | 124.47 | - | - |
| Free cash Flow to Equity (FCFE) | (3,589.55) | (3,889.54) | (3,889.55) | (3,748.31) | (3,748.31) |

Source: Author's calculations

As can be seen, just paying the employer's contribution to Caja Nacional de Salud and AFPs raises the company's labor costs in 31%. Since the company maintains the same price ranges under conditions of formality, it suffers losses during the entire period under study. To charge these additional costs to prices is a complex decision, because it could generate a decrease in sales. Besides, it should be considered that a raise in prices that does not respond to an improvement in the quality of the product is usually rejected.

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