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## SEMINARIS DE RECERCA

DEPARTAMENT D'HISTÒRIA ECONÒMICA, INSTITUCIONS, POLÍTICA I  
ECONOMIA MUNDIAL

UNIVERSITAT DE BARCELONA

CURS 2021-2022

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*The Characteristics and Development of  
Popular Economy in Bolivia*

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**Date:** Tuesday, 15 march 2022

**Hour:** 14:00 a 15:30

**Place:** Sala de Recepcions (edifici 690), Facultat d'Economia i  
Empresa, Universitat de Barcelona

# The Characteristics and the Development of the Popular Economy

## A Formal Model with Ethnographic Evidence

*La Paz, September 2018*

### **Abstract**

In this investigation we explore the reasons underlying the economic prosperity of certain popular merchants in Bolivia. Whilst economics frequently associates popular sectors of the economy with low economic performance, anthropological studies demonstrate the existence of large incomes within the Popular Economy (Tassi et al., 2013). We develop a formal model which traces back the origin of this prosperity in the coepetitive capacity (competitive plus cooperative) of popular merchants built upon the sharing of input costs. We argue that the coepetitive capacity of these actors is based on social networks of godfatherhood which are weaved at popular and patronal celebrations, which we document with ethnographic evidence.

**Keywords:** Informal economy, Popular Economy, club theory, collective action

**JEL Classification:** O17; D02; D24

## 1. INTRODUCTION

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During the last years it has become more common to find, in the Bolivian cities of La Paz as well as in El Alto, flashy private edifications, colorful and surreal, locally known as *Cholets*, which hold in their interior comfortable apartments, party rooms and stores (see figure 1). The aforementioned constructions, due to their opulence, have become a visual symbol of a popular-economic activity that has gradually generated great wealth. In certain areas of the city, popular markets frequently range from Asian imports, including high technology products, trending items of clothing, and even toys inspired in the latest Hollywood productions. In these areas, it is usual to find some activity related to patronal parties celebrated by the local businesspeople, where the squandering of luxury and lavishness is practically a social norm (see i.a. Pereira Morató, 2015). Said demonstrations of opulence question certain apparently established facts related to popular and informal commercial practices.



*Figure 1: Neo-Andean architecture in El Alto. Photographs from the authors.*

Reviewing the literature, for example, La Porta and Schleifer (2014) establish that the informal economy “...has extremely low productivity compared to the formal economy: informal firms are typically small, inefficient, and run by poorly educated entrepreneurs”. There is no doubt that the majority of those who are informal live in poverty and present low levels of productivity; nonetheless, this study focuses in the emergence of an economics’ elite coming from sectors that frequently operate to the margin of State laws and regulations. Scholars close to sociology have questioned the use of the expression “informal economy” and has chosen the term “Popular Economy”; which is defined in the study as follows:

**Definition (Popular Economy):** *Popular Economy is a form of economic organization in which its members organize and develop production, exchange, commercialization and financing processes through their own institutions and social networks, to the margin of State laws and regulations.*

It is important to make a distinction between informal economy and Popular Economy. Whereas the first one is characterized for *subsisting* outside of the norms from the State, the second one emphasizes the *organization* away from these norms. Popular Economy would be characterized by its own institutionalism, based in godfatherhood networking, in traditions, in social norms, etc.

The study of Popular Economy may explain the economic success of certain actors, providing keys to comprehend the mechanisms of the social mobility in Bolivia. It is important to understand the logic of the endogenous generation of local productive associations, since multiple attempts of multilateral organizations to encourage external productive organizations did not obtain the expected results (Masnouri and Rao, 2004, Platteau, 2004). Lastly, the study of this topic has cultural importance due to, as it will be shown, the proximity of Popular Economy with traditions associated to folklore and popular parties.

How to explain the economic prosperity of certain actors from Popular Economy? In order to answer this question the study relies in two methodologies typically disconnected. On one hand, a formal model of applied microeconomics has been developed integrating industrial organization elements and cooperative games' theory. On the other hand, the assumptions of the model and its conclusions are based and interpreted on the evidence obtained in a series of micro-ethnographies conducted between May and July, 2018. 15 semi-structured interviews of approximately one hour were conducted to various actors related to Popular Economy; popular merchants, public servants and academia experts in the area were included. This methodological approximation is justified by the sensitive nature of the information.

This is the first investigation to formally analyze the components of the so called Popular Economy in Bolivia. The investigation first exposes certain stylized facts that reveal that the relation between Popular Economy and poverty is less clear from what one could expect: using informal merchants as proxy, the data of the 2017 Household Survey appear to indicate the existence of elevated income and instruction levels in this sector. Afterwards, a formal model is developed in which general conditions that predict the emergence of prosper actors of the Popular Economy under neoclassic assumptions are found. Moreover, it is found that cost sharing capacity through collusion systems (e.g. sharing merchandise transportation costs) may generate increasing marginal returns of the merchant's ability. In this model the importance of the trust role between the actors for weaving strategical bonds prevails. Then, the model is extended to formalize the weaving of the social networks through a signaling model based on the popular

party. Finally, ethnographic evidence collected through interviews conducted to formal and informal businesspeople, authorities and area academia experts is provided. The evidence gathered confirms not only the existence of important fortunes in Popular Economy, but also illustrates the important organizational capacity of the sector. It also shows the importance of weaving bonds through the party, and how it impacts the organization of commerce and the economic prosperity.

The rest of the document is organized as follows. Section 2 reviews briefly the literature, and section 3 describes the stylized facts based on the 2017 Household Survey. Soon after, section 4, develops the formal microeconomic model, which is discussed in section 5. Section 6 of the document explains the ethnographic methodology used, whose results are presented in section 7. The last section concludes the document.

## 2. REVIEW OF THE LITERATURE

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In 1954, Sir Arthur Lewis formulated an influential model of two sectors explaining the economic development process as a labor transition from a subsistence sector to a modern sector. In the development process, the modern sector (e.g. capitalist and formal) should expand, appealing even less qualified workforce and causing the subsistence sector (e.g. informal and precarious) to disappear (Lewis, 1954). In a welfare analysis based on this model, Fields notices that the transition period may increase the inequalities, and that those who remain in the subsistence sector will be impoverished in relative terms (Fields, 1979). Bourguignon (1990) concludes that an increase of inequality in the transition process between subsistence economy and modern economy is inevitable. Galliani and Weinshelbaum (2012) model the decision of becoming formal or not based in rational decisions, arguing that less productive agents have incentives to remain in the subsistence sector.

In the growth period that has characterized Bolivia between 2006 and 2016, the number of informal workers has not diminished (International Labor Organization, 2018), although the size of the sector relative to the GDP has (Medina and Schneider, 2018). At the same time, inequalities have been reduced (World Bank, 2018), contradicting the dual model of Lewis. Social studies demonstrate that participants of the “subsistence” sector are not necessarily poor, or less productive, or against modernity. Tassi et al. (2013) document extensively the “overflow of popular merchants” in Bolivia: the study shows the organizational capacities of the sector, the complexity of their parallel institutionalism, and their relation with the globalized economy. The book emphasizes the economic power of the sector, as well as their negotiation power *vis-a-vis* the State. Müller (2017) also shows the negotiation power of the sector facing multinational companies. Wanderley (2004) highlights the organizational capacity of small informal entrepreneurs, underlining benefits and costs of interested mutual cooperation. The concept of

Popular Economy has been explored for other countries by Nyssens (1997), Fonteneau et al. (2011) and Bauwens and Lemaître (2014).

Lastly, it cannot be ignored that the existing relation between popular economic activities in Bolivia and rituals or religious celebrations is amply documented. These parties or rituals are used to reinforce and enrich the mutual trust and cooperation ties (Tassi, 2007; Maenout, 2012; Cárdenas Plaza, 2015). In these documents, the authors show the tight relation between commercial trust and cooperation that is established amongst merchants in these rituals and celebrations.

The configuration of commercial bonds in unofficial parallel institutions is not exclusive to Bolivia. The most relevant example is that of the Chinese consortiums: Grief and Tabellini (2017) explain that the Chinese development model differs from the occidental since the majority of the transactions and commercial collaborations are created within a close circle of trust based on the clan, unlike the model of occidental formal institutions. The institutionalism in China would be based in loyalty and morality within the group, and would be marked by the deep mistrust in tribunals and other official institutions. The term *guānxi* (關係) refers to the interpersonal connections translated in the moral obligation of providing favors or services, usually among businesspeople that compete with each other (Redding, Hsiao 1990). Ouchi (1980) explains that the 'clan' performs better than bureaucracy when there is no ambiguity over common objectives (the economic supremacy of the group, for example), although monitoring individual performances is costly. Other examples of informal institutionalism (or parallel) include the creation of parallel commercial networks by Ovambo tribes under the apartheid regime in today's Namibia (Dobler, 2014), or the best known example of Jewish merchants' unions in Medieval Europe (Aust, 2018).

Finally, it has to be noted that even multinational occidental companies tend to cooperate between them. The cooperation concept, the simultaneous cooperation and competition among companies was made popular by Brandenburger and Nalebuff (1996) based in concepts of the games' theory. The book explains that big companies compete and cooperate in different degrees according to the circumstances and the positions of power. Examples include efforts in investigation and development, group lobby before State agencies or the use of common platforms (for example, the use of Amazon Kindle electronic books is available in platforms for iPad or Android tablets, direct competitors to the Kindle tablet). These agreements are not explicitly informal but may be tacit, and in case of a very tight cooperation, may be considered as the configuration of a cartel, which is illegal practice in a market economy (Rey and Tirole, 2018).

### 3. BACKGROUND AND DESCRIPTIVE ANALYSIS

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Below, we present a descriptive analysis of the data contained in the 2017 Household Survey conducted by *Instituto Nacional de Estadística*. Only the year 2017 is considered due to the fact that the survey includes for the first time a module over cultural practices. The exposed results were obtained from the information belonging to the department of La Paz exclusively, considering individuals from 14 years of age and on located in the urban area. This decision was taken in order to have the data describe as accurately as possible the survey respondents in the ethnographic assignment. As a result of the impossibility to confirm the representativeness in the survey, it must be interpreted cautiously and as a descriptive base only.

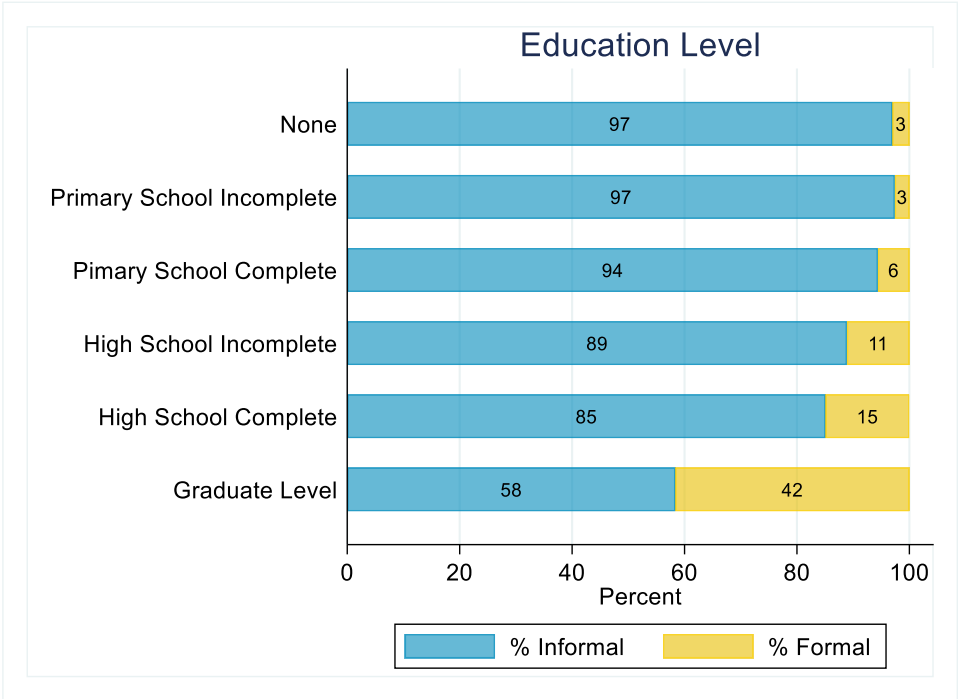
From the occupation categories observed, the categories “Wholesale and retail sale, auto repair” and “Transport and warehousing” were selected, for these are considered to be representative of commerce. The sample with which the work was performed has 1191 observations. Aiming to segment the group between those who develop their economic activity formally or informally, the section of the survey related to the question of company registration before the general, or simplified-, tax regime was analyzed (Table 1). 68,5% of the sample indicated that the establishment in which respondents work does not have any registration or that the latter is in process. Note that this figure is not distant from the informality measures of Medina and Schneider (62%, 2018) and Escudero et al. (70%, 2016). It should be noted that the category “in process” is absorbed by the category “does not have” since 2013 because of its negligible size (inferior to 0.3% in 2012).

**Table 1: Registration of companies according to economic activity in La Paz, 2017**

Company Registration	Classification of Economic Activity from Bolivia: Main Occupation		Total
	Wholesale and Retail Sale, Auto Repair	Transport and warehousing	
1. Yes, at General Regime	140 11.8%	28 2.4%	168 14.1%
2. Yes, at Simplified Regime	32 2.7%	1 0.1%	33 2.8%
3. Does not have/In process	555 46.6%	261 21.9%	816 68.5%
4. Does not know	122 10.2%	52 4.4%	174 14.6%
Total	849 71.3%	342 28.7%	1191 100%

*Source: Own drafting with data from the 2017 Household Survey*

To continue with the analysis, it is considered that those who register their company at the general regime or the simplified regime are “formal”<sup>1</sup>, and those that do not have registration or do not know if they have it or not are “informal”<sup>2</sup>.



*Figure 2: Informality by level of education.  
Source: Own drafting with data from the 2017 Household Survey*

Note that in figure 2, while a superior level of education it is positively correlated with formality, it is worth to highlight that even merchants and drivers bearing graduate education titles are 58% informal. This is already an indicator that segments from informal commerce are not necessarily less educated.

Labor income distribution for main occupation estimated in figure 3 demonstrates that big part of those considered informal receive an income above the average with regards to formal ones (Bs. 2.165), and above the minimum wage of that point in time (Bs. 2.000). Despite that those who are formal have in average higher incomes, clearly there are informal merchants and drivers with elevated income average. Additionally note that, even though there are great incomes among the informal, most of them have low incomes.

<sup>1</sup> Note that those in the simplified regime could be considered as informal since they do not pay several national taxes. However, these represent only 2.8% of the sample and their exclusion does not substantially modify the conclusions of this section.

<sup>2</sup> Those who are not aware if they are registered are probably unregistered. If they are businesspeople and do not know if they have a registry, then do not pay monthly taxes, are thusly informal. If they are employees, they could infer the status of the company through the reception of paychecks, social contributions to pension funds, etc.



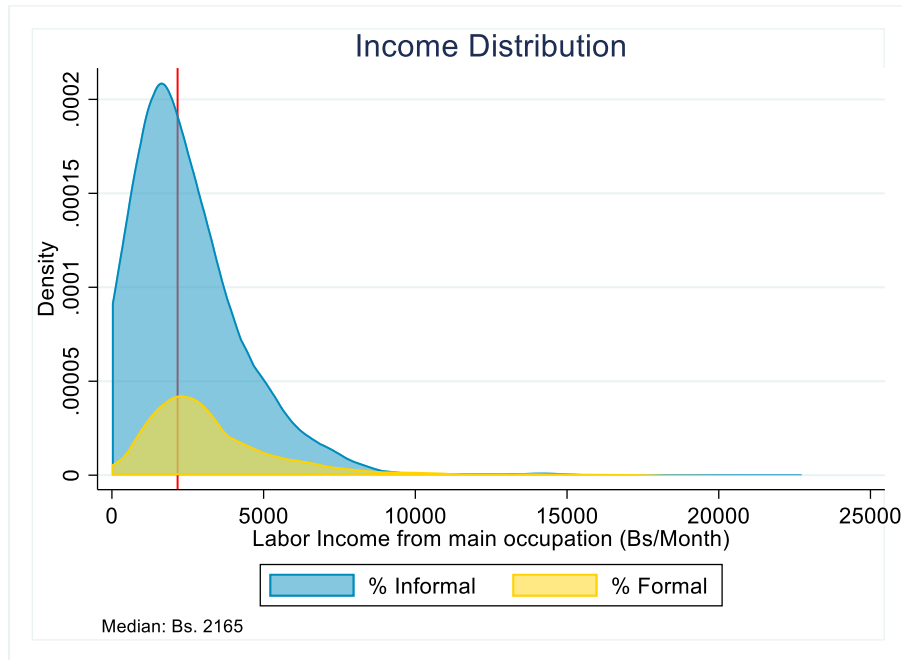
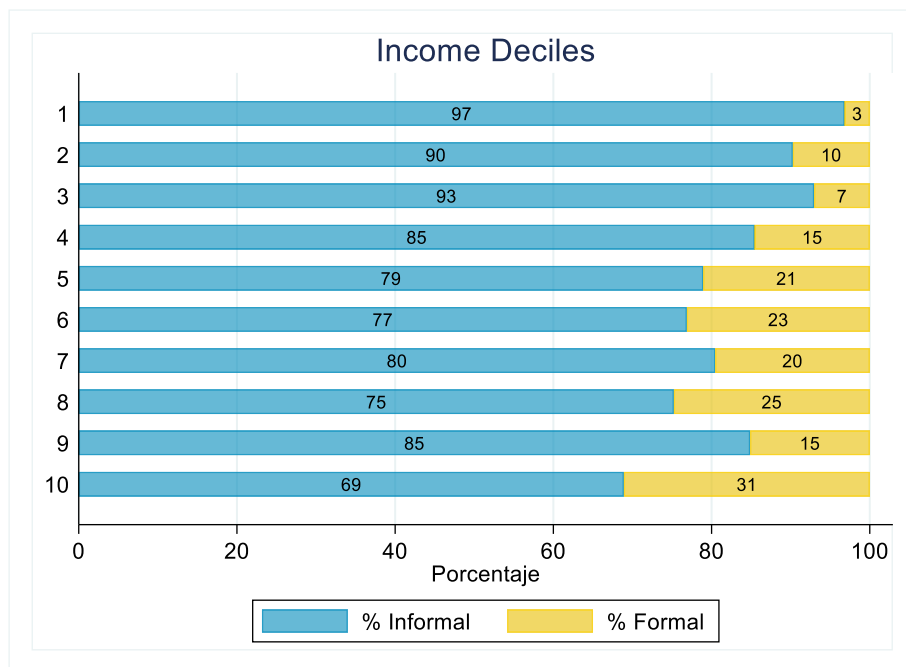


Figure 3: Income and informality distribution.

Source: Own drafting with data from the 2017 Household Survey

So as to provide more detail, the percentage of informal by decile of income presents a negative correlation between informality and income; nevertheless, it is noteworthy that even in the richer decile of the sample, most of the merchants and drivers are informal (69% in the highest decile). The data suggests the existence of important income amid informal merchants and drivers.



*Figure 4: Income and informality distribution, by decile.*  
*Source: Own drafting with data from the 2017 Household Survey*

Taking into account the data of the section “Culture” from the 2017 Household Survey, the participation of workers in the sectors of interest in religious or patronal parties was analyzed.

Before the question regarding the attendance as spectators to this type of celebrations within the last 12 months, the results show that 89.3% of the respondents answer that they do not attend these parties as *spectators* (Table 2). However, when considering the question “To how many religious festivities did you attend?” the outlook is different. If the respondent establishes that it has attended one or more celebrations, not as spectator, it is then categorized as “having attended a religious or patronal party”. The entire sample affirms having attended to at least one patronal or religious party in one year, presumably not as spectator but as participant.

**Table 2: Attendance as spectators to religious or patronal parties**

	Religious or patronal parties	
	Has attended as spectator to religious or patronal festivities	Has attended to religious or patronal festivities
1. Yes	120	1191
2. No	1063	0

*Source: Own drafting with data from the 2017 Household Survey*

This result could mean that the percentage of participation as spectator is low because the workers of the studied sectors play a protagonist roll in these celebrations; meaning that, they do not attend to see them but to participate in them, probably as members of some folklore association.

The Household Survey leads to limitations as for the representativeness and sampling technics; nevertheless, four stylized facts are conclusive. Amidst a sample of 1191 merchants and drivers: (i) the great majority are informal (ii) among the informal some have high levels of education (iii) among the informal some have high incomes, and (iv) commercial work and participation in folklore celebrations in the country cannot be dissociated. These facts are taken into consideration as a base for the theoretical model presented below.

## 4. THE MODEL

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### 4.1. PRELIMINARIES

We develop a model inspired in Galiani and Weinschelbaum (2012), which extends the theory to generalized homogeneous functions with vector arguments. Additionally, elements of club theory (Buchanan, 1965) and public goods theory (Samuelson, 1954) are incorporated.

Suppose a market where  $i = 1, \dots, N$  merchants exist who may or may not belong to a coalition (e.g. a fraternity), and  $j = 1, \dots, J$  production inputs. Examples of these inputs include: workforce, merchandise, warehouses, transport, etc. The economic benefit of each merchant  $i$  is provided by:

$$\pi_i(\mathbf{x}_i; a_i, S) = I_i(\mathbf{x}_i; a_i) - \mathbf{d}(\mathbf{x}, S) \cdot \mathbf{x}_i$$

In which  $\mathbf{x}_i \in \mathbb{R}_+^J$  is the vector of  $J$  supplies used by the merchant  $i$ .  $S \in \mathbb{N}$  indicates the size of the coalition to which it belongs; if  $S = \emptyset$ , then the merchant does not belong to any coalition.  $I_i(\mathbf{x}_i; a_i)$  is a continuous income function differentiable in input vector  $\mathbf{x}_i \in \mathbb{R}_+^J$  so that  $\partial I_i(\mathbf{x}_i; a_i) / \partial \mathbf{x}_i > 0$ . The exogenous parameter  $a_i > 0$  represents the intrinsic and exogenous characteristics of the merchant (its managerial talent, motivation, cognitive capacities, etc.), for which we suppose  $\partial I_i(\mathbf{x}_i; a_i) / \partial a_i > 0$ . We will call this parameter *ability*. Finally,  $\mathbf{d}(\mathbf{x}, S)$  is a vector  $J \times 1$  of the unitary cost of each input  $j$ , which depends on the aggregated use for the coalition of this input, due to which sub index  $\mathbf{x}$  is omitted. The product  $\mathbf{d}(\mathbf{x}, S) \cdot \mathbf{x}_i$  then provides us with the variable cost function of the firm. For the moment we omit any fix cost.

The following homogeneity assumptions are considered for the functions described above:

- **Assumption 1 (homogeneity in inputs)**

The income function is so that  $I_i(\lambda \mathbf{x}_i; a_i) = \lambda^\xi I_i(\mathbf{x}_i; a_i)$ , meaning that  $I_i(\cdot)$  is homogeneous of degree  $0 < \xi < 1$  in inputs.

- **Assumption 2 (homogeneity in ability)**

The income function is so that  $I_i(\mathbf{x}_i; \lambda a_i) = \lambda^\alpha I_i(\mathbf{x}_i; a_i)$ , meaning that  $I_i(\cdot)$  is homogeneous of degree  $0 < \alpha < 1$  in  $a_i$ .

- **Assumption 3 (homogeneity in input prices for coalitions)**

The Price of an input is so that  $d_j(\lambda \mathbf{x}, S) = \lambda^{-\mu} d_j(\mathbf{x}, S)$  if  $S \neq \emptyset$ , meaning that  $d_j(\cdot)$  is homogeneous of degree  $-\mu < 0$  in input  $j$  if  $S$  is not empty. In another words, a coalition could obtain cheaper unitary input prices if the members increase their use altogether. If  $S = \emptyset$ , then  $\mu = 0$ .

The homogeneity allows maintaining weak assumptions regarding functional forms. The strongest assumption of the model is the third one: under this assumption, an increase in the

use of inputs by a collation reduces the unitary cost of each input. Meaning that the coalition is capable of sharing supplies or benefitting from wholesale prices, despite competing at the sale of the final product; in this regard, the market structure is cooperative. The realism and pertinence of this assumption is discussed in section 5 and it is validated by the ethnographic evidence in section 7.

#### 4.2. EQUILIBRIUM AND INCOME/COST RATIO

We then continue to solve the problem of the merchant. Initially it is supposed to take the coalition  $S \neq \emptyset$  as given, and maximizes  $\pi_i(\mathbf{x}_i, S)$  choosing the optimal input composition. The first order conditions to obtain a maximum are

$$\frac{\partial I_i(\mathbf{x}_i; a_i)}{\partial x_{ij}} = d_j(\mathbf{x}, S) + \frac{\partial d_j(\mathbf{x}, S)}{\partial x_{ij}} \cdot x_{ij} \quad (1)$$

Where the value of the marginal revenue obtained by input  $J$  for company  $i$  equals the price of this input plus the reduction of the input price associated to economies of scale obtained by collation  $S$ . Note that this function depends on the use of the input by other members of the coalition; it is then a best response function. Adding the equation (2) through  $S$  agents, the following Nash equilibrium is obtained:

$$\sum_S \frac{\partial I_i(\mathbf{x}_i; a_i)}{\partial x_{ij}} = S d_j(\mathbf{x}, S) + \sum_S \frac{\partial d_j(\mathbf{x}, S)}{\partial x_{ij}} \cdot x_{ij}$$

Using Euler's Homogeneous Theorem (see annex 1) and the assumption 3, we obtain:

$$\sum_S \frac{\partial I_i(\mathbf{x}_i; a_i)}{\partial x_{ij}} = S d_j(\mathbf{x}, S) - \mu d_j(\mathbf{x}, S) \quad (2)$$

If the amount of inputs  $J$  is finite, annex 2 shows that the value of the marginal product of each input  $x_j$  is equal, in equilibrium, among all the members of the coalition. Then,

$$S \frac{\partial I_i(\mathbf{x}_i; a_i)}{\partial x_{ij}} = (S - \mu) d_j(\mathbf{x}, S)$$

Multiplying this function by  $x_{ij}$  and adding through the supplies, we have

$$S \sum_{j=1}^J \frac{\partial I_i(\mathbf{x}_i; a_i)}{\partial x_{ij}} \cdot x_{ij} = (S - \mu) \sum_{j=1}^J d_j(\mathbf{x}_j) \cdot x_{ij}$$

Using Euler's theorem for homogeneous functions (annex 1), we obtain at equilibrium

$$\frac{C_i(\mathbf{x}_i^*, S)}{I_i(\mathbf{x}_i^*; a_i)} = \frac{\xi S}{S - \mu}, \quad (3)$$

In which  $C_i(\mathbf{x}_i^*, S)$  is the total evaluated cost in the equilibrium. The proof that this equilibrium is a local maximum for each merchant can be found in annex 3. It is worth to mention that for each commerce to be profitable, it is necessary that

$$S \geq \frac{\mu}{1 - \xi},$$

Meaning that there exists, a minimum number of members from the coalition that is required so as to make it economically viable. Note that, even though the ratio income/cost is equal for each company, this does not mean that its economic benefit is homogeneous. The ratio income/cost is used in the next section to calculate the elasticity of profit relative to the managerial ability of each merchant.

#### 4.3. ELASTICITY OF THE ECONOMIC BENEFIT RELATED TO THE MANAGERIAL ABILITY

Let us resume at the profit function of the firm:

$$\pi_i(\mathbf{x}_i; a_i) = I_i(\mathbf{x}_i; a_i) - C_i(\mathbf{x}_i, S),$$

Annex 4 shows that the profit-ability elasticity evaluated at the optimum may be written as:

$$\varepsilon_{a_i}^{\pi_i} = \frac{d\pi_i(\mathbf{x}_i^*; a_i)}{\pi_i(\mathbf{x}_i^*; a_i)} \bigg/ \frac{da_i}{a_i} = \frac{\alpha(S - \mu)}{S(1 - \xi) - \mu}. \quad (4)$$

Note that, if a merchant does not belong to a coalition, for the assumption 3,  $\mu = 0$  and the elasticity for this merchant is

$$\varepsilon_{a_i}^{\pi_i} = \frac{d\pi_i(\mathbf{x}_i^*; a_i)}{\pi_i(\mathbf{x}_i^*; a_i)} \bigg/ \frac{da_i}{a_i} = \frac{\alpha}{1 - \xi}. \quad (5)$$

Evaluated in the optimum, simple comparative statics reveal that:

$\frac{d\varepsilon_{a_i}^{\pi_i}}{d\alpha} > 0$	$\frac{d\varepsilon_{a_i}^{\pi_i}}{d\mu} > 0$ si $S \neq \emptyset$
$\frac{d\varepsilon_{a_i}^{\pi_i}}{d\xi} > 0$	$\frac{d\varepsilon_{a_i}^{\pi_i}}{dS} < 0$ si $S \neq \emptyset$

Table 3: Comparative Statics for the elasticity

The profit-ability elasticity depends positively in the income-ability elasticity, the degree of homogeneity of the income function relative to inputs, on the degree of homogeneity of unitary costs from inputs with regards to its use by merchants, and negatively from the number of agents that participate in the use of inputs. As conclusion, the members of a coalition will obtain increasing marginal returns from ability when they are able to share costs, although it should be noted that the effect of the number of members in the coalition generates an incentive for restricting access to the group.

#### 4.4. MARKET SEPARATION

Inspired by the simplified specification of Galiani and Weinschelbaum (2012), constant returns to scale of the income function with regards to the inputs and the managerial ability are assumed, that is to say  $\alpha + \xi = 1$ . Resuming on equation (4), those who are part of a coalition obtain (alleviating notation):

$$\mathcal{E}^S = \frac{\alpha(S - \mu)}{S\alpha - \mu} > 1$$

And those who are not part of a coalition, also simplifying the notation, obtain

$$\mathcal{E}^\emptyset = 1$$

Given those elasticities, we could imagine the following scenario. Actors from Popular Economy organize in coalitions; these have institution which answer to their own cultural practices which are parallel to conventional State regulation, without necessarily escaping from it; this allows them to reduce some fixed costs related to the management of processes or procurement of permits. In itself, becoming part of a coalition does no guarantee economic success, but it may be a strategy adopted to reduce these fixed costs. The actors in conventional economy do not associate with these coalitions as a result, and they must assume additional fixed costs individually, noted  $\tau$ .

Suppose that ability  $a_i \sim f(a_i)$  has a distribution with support  $\{A: [\underline{a}, \bar{a}]\}$ , skewed to the left. The economic benefit functions of both sectors are graphed in the equilibrium, depending on  $a_i$ . The model may create a separation of the population in three sectors: poor popular economy actors, middle class conventional economy actors, and rich popular economy actors (see figure 5). This separation result is considered as representative of the Bolivian reality.

It is left to clarify how the coalitions that are considered as exogenous are formed in this subsection.

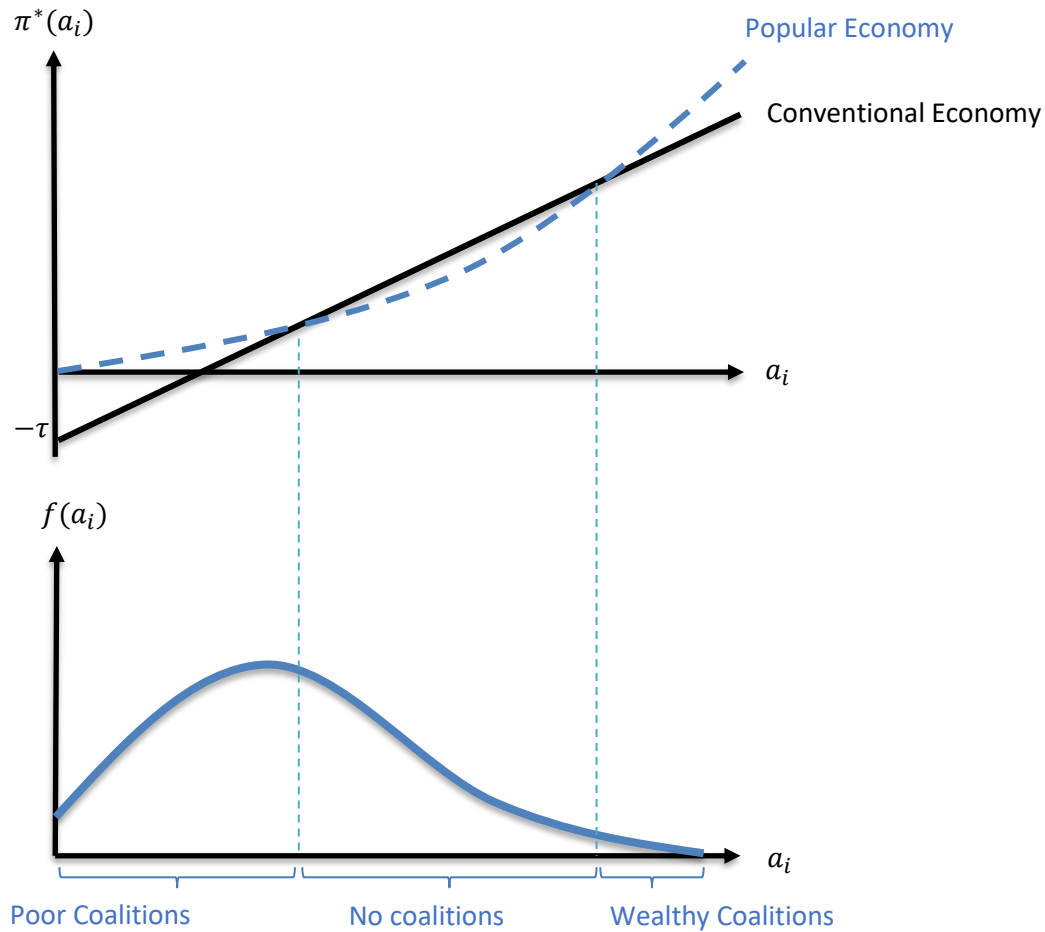


Figure 5: Separation in three sectors of the economy in the model considering cooperative capacity

#### 4.5. COALITION FORMATION

In this subsection the conformation of coalitions size  $S$  is modelled. A coalition of merchants intends to incorporate to the group merchants with high managerial ability, for they will purchase great volumes of supplies causing the group to benefit from economies of scale. Supposedly merchants with less managerial ability are not attractive, since the purchase of small volumes does not generate important saving, but it does generate congestion problems within the group.

Remember that  $a_i \sim f(a_i)$  with support  $\{A: [\underline{a}, \bar{a}]\}$ . Suppose there is a merchant coalition  $S$  which intends to incorporate a new member into their coalition. With incomplete information, the ability of the candidate is not directly observable. Denote  $\pi_S(S)$  the (optimized) value of the coalition before accepting a new member and using the notation of Shapley (1953),  $\pi_S(S \cup a_i)$  is the value of the coalition when a member with managerial ability  $a_i$  is admitted. A coalition would admit a new member if in the expected value the coalition value is augmented, meaning if:

$$\int_{a \in A} f(a_i) \pi_S(S \cup a_i) da_i \geq \pi_S(S)$$

With similar reasoning to the theorem of utility from Von Neumann-Morgenstern (1944), the coalition is indifferent among the above described lottery, and the following simple lottery for any  $p$ :

$$(1 - p) \pi_S(S \cup \underline{a}) + p \pi_S(S \cup \bar{a}) \geq \pi_S(S)$$

In which it is supposed that:

$$\pi_S(S \cup \bar{a}) \geq \pi_S(S) \geq \pi_S(S \cup \underline{a}),$$

Meaning that it is always desirable to include the most talented member of the society, and it is never desirable to include the least talented. The new member is admitted if:

$$p > \frac{\pi_S(S) - \pi_S(S \cup \underline{a})}{\pi_S(S \cup \bar{a}) - \pi_S(S \cup \underline{a})}$$

This is, if the expected ability of the agent is sufficiently elevated. It must be noted, as it is common in the cooperative games' theory, that multiple equilibrium might emerge, and various may not be stable. We will not try to characterize the equilibrium in this section, but we will try to understand the incentives that the agents have to form coalitions. In absence of a signaling mechanism, this lack of information may cause the collapse of all agreements (Akerlof, 1970). Nonetheless, if there is any credible signaling mechanism, then difficulties generated by adverse selection can be avoided.

The conjecture that a credible signaling system can be based on the system of popular and religious parties is suggested. The model is based in that of public property described in Myles (1995). Consider that every merchant has a utility function  $(G, c_i)$  where  $G$  is a public good (the party) and  $c_i$  consumption, with a utility function Cobb-Douglas

$$\begin{aligned} \text{Max}_{\{c_i, g_i\}} U_i(G, c_i) &= c_i^{\frac{\rho}{1+\rho}} G^{\frac{1}{1+\rho}} \\ \text{s. t. } \pi_i(a_i) &\geq c_i + g_i \end{aligned}$$

In which  $g_i$  is the individual economic contribution of each agent to the party, and  $G = \sum_i g_i$ .  $N$  participants exist and  $\rho > 0$  increases with the relative importance of private consumption with regards to the party in the utility function.  $\pi_i(a_i)$  is the economic benefit (maximized) from the agent which can be split between private consumption and contributions to the party. Simplifying the problem we have



$$\text{Max}_{\{g_i\}} (\pi_i(a_i) - g_i)^{\frac{\rho}{1+\rho}} (\sum_i g_i)^{\frac{1}{1+\rho}}$$

The first order condition to have a maximum is

$$\pi_i(a_i) - g_i = \rho G$$

In Nash equilibrium,

$$G^* = \frac{N\bar{\pi}}{1 + \rho N}$$

In which  $\bar{\pi}$  is the average income of the participants of the party. Its size is reduced if there is more relative preference for private consumption, and it is increased if there are more participants or if these are in average wealthier. In the equilibrium, the individual contribution to the party is

$$g_i^* = \pi_i(a_i) - \frac{\rho N \bar{\pi}}{1 + \rho N} \quad \text{si} \quad \pi_i(a_i) \geq \frac{\rho N \bar{\pi}}{1 + \rho N} \quad (6)$$

$$g_i^* = 0 \quad \text{si} \quad \text{no.}$$

The individual contribution of each participant to the party depends negatively of their preference for private consumption, and of the number and income of the other participants associated with stowaway problems. The contribution depends lineally and positively of the income. It is an expensive and credible signaling mechanism that allows the agent signal its type. Since those that have higher income are the most talented agents, it can be inferred that the expenditure distribution in the party is conditioned on the managerial ability.

$$\frac{\partial f(g_i|a_i)}{\partial a_i} > 0$$

By Bayes' Theorem

$$f(a_i|g_i) = \frac{f(g_i|a_i)f(a_i)}{f(g_i)}$$

Then the type of agent is truly signaled for the observable expenditure at the party.

$$\frac{\partial f(a_i|g_i)}{\partial g_i} > 0$$

The expenditure at the party may be an ability signaling mechanism (and therefore of income) revealing at the time of forming commercial coalitions. It can be then generated a virtuoso circle, in which the expenditure at the party allows merchants access to more lucrative coalitions, which

causes to increase their party spending in the following cycle, thusly having access to even more lucrative new coalitions, etc.

Under this mechanism, the expenditure in parties could be rationally justified, even if the agent does not obtain direct profit from the party itself ( $\rho$  tends to the infinity). In order illustrate this dynamic, the existence of a new coalition formation system is supposed to exist based on signaling through the party.

#### 4.6. DYNAMICS AND STATIONARY STATES

Suppose that the expenditure at a party increases the probabilities to access a more lucrative coalition, although with decreasing returns. The dynamic comes from

$$E[\pi_{i,t+1}(a_i, S_{t+1}) | g_{i,t}] = (1 + g_{i,t}) e^{-g_{i,t}^2} \pi_{i,t}(a_i, S_t)$$

In expected value, a merchant could expect accessing a more lucrative coalition in the next period if there is more investment in the party, signaling a higher ability ( $1 + g_{i,t}$ ); nevertheless, there are decreasing returns ( $e^{-g_{i,t}^2}$ ) from this signaling, for if the merchant already belongs to a lucrative coalition and bears important spending, it will be difficult to access an even more lucrative coalition. In other words, there is a limit to how lucrative coalitions could be. The expenditure  $g_{i,t}$  then allows, within certain ranges, to increase in time the access to more profitable coalitions. Note that, if the expenditure in a party is non-existent, the benefit level remains constant in time. Due to equation (6), we have

$$[\pi_{i,t+1}(a_i, S_{t+1}) | g_{i,t} = 0] = \pi_{i,t}(a_i, S_t)$$

And

$$E[\pi_{i,t+1}(a_i, S_{t+1}) | g_{i,t} > 0] = \left(1 + \pi_{i,t}(a_i) - \frac{\rho N \bar{\pi}_t}{1 + \rho N}\right) e^{-\left(\pi_{i,t}(a_i) - \frac{\rho N \bar{\pi}_t}{1 + \rho N}\right)^2} \pi_{i,t}(a_i, S_t).$$

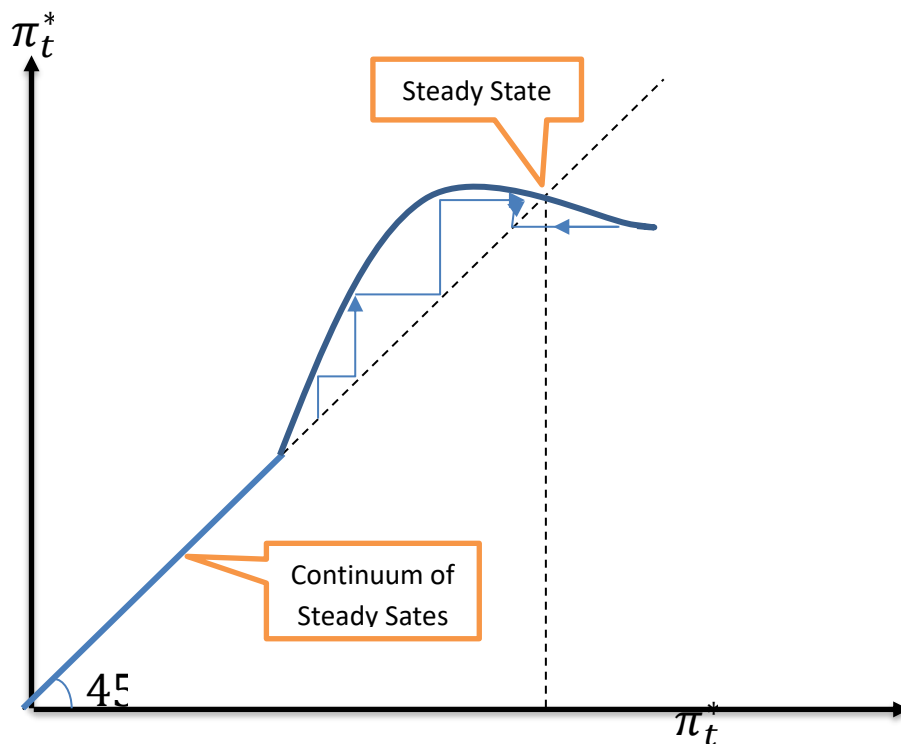
If the income of the agent is  $\pi_i(a_i) < \frac{\rho N \bar{\pi}}{1 + \rho N}$ , it does not contribute to the party and remains in stationary state. If it contributes to the party, there is a secondary stationary state in which

$$\left(1 + \pi_i^{SS}(a_i) - \frac{\rho N \bar{\pi}^{SS}}{1 + \rho N}\right) = e^{\left(\pi_i^{SS}(a_i) - \frac{\rho N \bar{\pi}^{SS}}{1 + \rho N}\right)^2}$$

Its solution is well approximated by

$$\pi_i^{SS}(a_i) \approx \frac{3}{4} + \frac{\rho N \bar{\pi}^{SS}}{1 + \rho N}$$

Figure 6 represents the stationary states. For low levels of income, the expenditure in parties is insufficient to access more lucrative coalitions. Those who can invest in the party can use this signaling mechanism to enter more profitable coalitions up to a new stationary point with high income. The prosperous stationary state depends positively on the average wealth of the sector,  $\bar{\pi}$ , meaning that there are important complements between merchants, and the number of merchants that participate on the party,  $N$ . Interestingly, the income in a prosperous stationary state depends positively on the relative importance given to consumption with regards to the party in function of utility,  $\rho$ . This happens due to the fact that by prioritizing consumption, few agents decide investing in the party, and these few are the most prosperous merchants. Accordingly, a select club is configured, forming more profitable coalitions while being more excluding.



*Figure 6: Stationary states in the formation of coalitions*

Having described and characterized the model, below we discuss the assumptions and results connecting them with Bolivian reality.

## 5. DISCUSSION OF THE MODEL

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In this section, the meaning and possible interpretations of the variables used in the model are illustrated. The model deliberately looks to maintain a high level of generality, for this purpose, the more relevant conclusions remain without having to take concrete assumptions regarding

the specification of the model. However, it is expected that the following interpretations land the model in real situations.

Vector  $x$  represents the input used by a commercializing company. A input is any factor that increases the generation of income and that has a monetary or opportunity cost. It immediately the following come to mind: merchandising, rents, transport, electrical energy, deposits, workforce, etc. Certain supplies may have a more subtle classification: commercialization that requires certain formalities with the State, municipality or union, as well as customs' clearance processes, sale permits, or even in few cases, tax registrations. Security guards, insurances or loans that allow dealing with theft risks, fires or liquidity restrictions could also be necessary. Lastly, importing merchandise from Asian markets require translators, plane tickets and guides. Each one of these supplies has the potential to increase the value of income but it is associated with a monetary cost. The neoclassic assumption of marginal non-increasing revenues from income in supplies is taken, materializing in the degree of homogeneity  $\xi \leq 1$  of the income function. On the other hand, the equally neoclassic assumption of a lineal cost function in the expenditure of supplies  $\mathbf{d} \cdot \mathbf{x}$ , in which  $\mathbf{d}$  is a vector of input prices.

Several of these supplies may benefit from unitary cost reduction when their use is coordinated between the members of a coalition. Merchants can share freight costs of a container transporting merchandise from China, rent of a merchandise warehouse, customs' clearance costs when merchandise is imported in parcel by several people. Filing persons, security guards and translators could be easily hired by a coalition of merchants. Furthermore, the important coordination capacity among these actors makes them efficient to organize demonstrations to oppose state or municipal operations destined to regulate the sector or transfer the merchants (*La Razón*, August 18, 2017). As an untraditional input, demonstrations against police operations preserve the value of commerce (by not being closed down), but represents at least an opportunity cost related to the investment of their time in marches, demonstrations and blockages. Among other examples of unconventional supplies, the *pasanaku* system (rotational loan system) has been amply documented as a mutual savings and credit system more affordable than the formal financial market (i.a. Sandsør, 2010). Travel agencies specialized in selling group packages to China with commercial purposes. Finally, the casual observer will notice that in popular markets the practice of having a competitor look after a store when the owner is absent ("*Miramelo comadre*") is frequent, or the loan of merchandise by the competitor in case of running out of existences (Own observation, 2018). These examples illustrate a remarkable capacity of mutualizing costs even in a competitive sale context. This phenomenon is modeled with the use of homogeneity of prices of degree  $\mathbf{d}$ .

The variable  $a_i$  is noted as ability of the commerce manager. In itself, this variable represents the intrinsic characteristics of the merchant allowing it to increase the value of income for its

organizational capacities, empirical knowledge of the market, marketing strategies<sup>3</sup>, human resources and social networking (which is distinguished from the formation of collusion in the purchasing of supplies, for it is modelled in an endogenous manner. It is distinguished from other supplies since, at least in the short term; this capacity cannot be acquired in the market. Future models may point out to model this ability in an endogenous manner. The assumption of marginal decreasing revenues assumption is taken in managerial ability incarnated in  $\lambda < 1$ , and there is supposed to be an exogenous distribution  $a_i \sim f(a_i)$  with support  $\{A: [\underline{a}, \bar{a}]\}$ , meaning that there is heterogeneity from these abilities.

Finally, the model makes explicit the formation of coalitions  $S$  through signaling mechanisms in parties  $G$ . It is notorious that dance fraternities are frequently organized surrounding a union or trade, and a dance in particular. For example, electrical appliances' merchants from Eloy Salmon St. are characterized by the *Morenada* dance, the Embroiderers' Union is specialized in *Diablada* since its foundation in 1927. Besides folklore dances in popular parties, a number of receptions, social events, recitals and other previous and later activities to the main event are organized. The organization and the majority of the financing,  $g_i$  in the model; are in charge of the *pasantes*, who are yearly appointed members of the fraternity for the good administration of the activities. An imperative criterion is that the *pasantes* must be wealthy enough to comply with their social engagements, meaning that  $\pi_i$  has to be sufficiently elevated. For *pasantes* this expenditure is generally considered as investment due to the honor it carries and the beliefs that religious devotion will have the divinity reward these economic efforts with major earnings (Tassi, 2007). In said social events, the reputation and honor codes are strict: austerity is frowned upon, for example when it is translated in the repetition of clothing in social events, or in the rejection of invitations to participate in celebrations. This calls for the clubs and fraternities to be generally exclusive and selective upon their members (Cardenas Plaza, 2015).

The interpretation of the theorist model in this section allows us to establish the ideas and approximate them to the reality. This enables us to sharpen the comprehension of the internal logic and the mechanisms of popular economy from an economic rationality point of view. It is evident that not all behaviors could be explained by the cold logic of microeconomic modelling, but it allows elucidating the economic incentives and equilibrium that accompany complex social dynamics. It is important nevertheless, that the model has empirical support; given the sensitive nature of the information, high-priced technics and long periods of time are required to conduct a serious evaluation with econometric technics. It is opted then to obtain first hand ethnographic evidence which allows us to empirically corroborate the predictions of the model and obtain new knowledge over the investigation matter. Because of its rare use in economic sciences, the

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<sup>3</sup> For example, their client treatment aiming to obtain their loyalty, the *casero* figure or the store esthetic presentation

following section describes the ethnography methodology to later move onto the subsequent section of result description.

## 6. ETHNOGRAPHIC METHODOLOGY

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In order to complement the proposed theoretic model ethnographic methodology will be applied, comprehending that the latter allows to describe styles and ways of life adopted by different groups of individuals (Martinez, 2000) (Rodriguez, Gil, and Garcia, 1996) from the context analysis in which the circle of interest develops, social relations within, and the behavior of its members (Stanton, 1996). Said methodology acknowledges that inside the studied social systems values, motivations and beliefs intervene (Murillo and Martinez-Garrido, 2010) which are taken into account in the analysis so as to enrich it. Whilst the ethnography has been employed above all in qualitative investigations of anthropological nature, given its versatility, its scope of application has been expanded to different areas of knowledge, such as politics, education, and even, as in this case, the methodology has been applied to studies about economy (Restrepo, 2016).

Having the ethnography an inductive character, the investigation processes and those of data collection will be conducted through a participative first hand exploration (Del Rincon, 1997), achieving in this manner the documentation of that which is not yet known with absolute certainty, since it has not been documented so far (Murillo and Martinez-Garrido, 2010). This aspect turns out to be of great utility, for there are not a great number of studies reflecting the reality of Popular Economy or its characteristics in detail, thus the contact with the main characters that this methodology proposes will enable the depiction of what is known by the individuals moving in this environment, as well as their perceptions and means of understanding within this economic system (Guba, 1978). The characteristics of this methodology allow verifying and developing theories (Glaser and Strauss, 1967); hence the obtained results will feed the proposed theoretic model and will be functional as a complement to it. Finally, it is specified that in this case in particular the gathering of data and exploration are to be developed from a micro-ethnography perspective, meaning the analysis of a group revolving a concrete social situation (Spradley, 1980), Popular Economy.

To start with the ethnographic process, in first place, the object of study was defined and the work was conducted around the investigation question established in this paper, for it orients the scope limits of the methodology and sets the line of pertinence and priority treatment at the moment of collecting data (Restrepo, 2016). Afterwards, the collected information during the bibliography review was used to construct theoretic preconceptions regarding crucial topics in the ethnographic work, concepts such as: Popular Economy, ways of work within the social circles, and business relations weaved in the interior of patronal parties. This step is fundamental

to have an inquiry guideline, delimiting the search in the ethnographic process from a theoretic base (San Roman, 2009). All the situations that could not be explained from this scenario associated to the theory, will find answers from the ethnography (Velasco and Diaz De Rada, 1997).

Once this process stage was concluded, the technical design was started (San Roman, 2009) associated to the launch of the field work. In the first place, the most suitable populations in which the ethnography had to focus were defined, establishing the approach to five groups of individuals: expert academia members in Popular Economy matters, formal business people, municipal and governmental authorities whose scope of competence is linked to the economic and cultural development, people who actively participate in Popular Economy and finally, informal business people that are not active participants of Popular Economy.

After defining this aspect, it was decided to employ semi-structured interviews as an investigation technic since these are of great utility when the information intended to be collected is associated to the performance of an occupation in particular involving particular knowledge and which is executed in connection to intertwined internal social relations (Restrepo, 2016). The interviews were designed in such manner that they would have a more reflexive than standardized focus (Hammersley and Atkinson, 1994). As a result, the questions (the investigation instrument) were structured in a way that the interview could flow as naturally as possible, without creating controversies at the moment of collecting the necessary information. So as to achieve this purpose it was required to be familiar with the cultural and social means in which the investigation takes place, and to learn how to conduct the interview in relation to the treatment of the interviewees, the type of questions that could be posed and the times that had to be respected to make the questions (San Roman, 2009). For the posing of questions, the topics to approach were ordered under a logic criterion that would enable certain succession in the treatment of topics of interest (Restrepo, 2016). In this context direct and “key” questions (indirect questions) were constructed, which far from looking for an answer promoted the opening of a deeper dialogue about the relevant issues (Spradley, 1979). We were cautious to structure questions that would not induce, in any case, to an answer. This process was conducted in a differentiated manner for each of the selected study groups, for the required information was different depending on the speaker.

Finally, it was determined that the registration mean of the interviews would be audio recordings, combined with written notes to describe certain context relevant visual aspects.

The next methodology step consisted in the determination of the number of interviews to be conducted so as to proceed with the selection of the interviewees. It was decided to work with 15 individuals, 2 academics, 1 authority, 3 formal business people, 3 informal business people that do not belong to Popular Economy and 6 entrepreneurs or individuals from the circle of

Popular Economy. Given that the investigation technique differs from census, surveys or questionnaires, generally it is applied to a reduced number of people (Restrepo, 2016), selecting the informants based on the pertinence criterion of group of interest, position and acknowledgement, since of this depends the level of quality and quantity of the data that could be collected (Murillo and Martinez-Garrido, 2010). To approach the interviewees, in some cases, the official channel was used (authorities, academia members and formal business people); in others, the contact was made informally through friendship (entrepreneurs of Popular Economy and others) or using the snowball technic, in which an informant leads to another and likewise the second facilitates a new contact (Rodriguez and Valdeoriola, 2009).

For the application of interviews, previous information about each informant was collected, without constructing a deep preconception, but being such information sufficient so as to obtain the necessary standards to guide the dialogue (Hammer and Wildavsky, 1990). For this, press articles and social network data were used. In each case, besides oral information, non-verbal conduct expressed in gestures and postures were registered, as well as the intention at the moment of answering the questions (Martinez, 2000). Additionally, compliance with the impersonality principle on the approach of the interviewer was safeguarded to keep a neutral position to have the objectivity prevail over possible appreciations, looking after the transparency of data collection and processing (Mora, 2010). As part of the transparency in the ethnographic work, each interviewee was informed about the investigation from which the provided data would be part of, as well as the mediums through which the data would be spread. In each case consent was requested for the recording of the interview and authorization to reveal or not the identity of the interviewees. Lastly, it was decided to cipher the profiles to not endanger the interviewees given the sensitive information about their patrimony.

When data collection was concluded, processing and interpretation of the information was performed. Aiming to analyze the content of the interviews, groups were formed based on common matters, constructing different classification categories (Murillo and Martinez-Garrido, 2010), which were structured in relation to the theoretic proposed model. In this sense, the work was conducted with a corresponding section to Popular Economy concepts, other related to managerial abilities and one of social networks. Upon this information selection, the data interpretation was performed, in which empirical and theoretical grounds supporting the investigation were integrated, demonstrating what the obtained information represents for the established theory (Murillo and Martinez-Garrido, 2010). This stage took place within a descriptive and analytical process framework, which final product will be a representation of that explained by the individuals from the group of interest in relation to the applicable topic (Guber, 2001). Therefore, the analysis must address what the people in the group do and what each developed action means (Restrepo, 2016). Thusly, the presented description refrains from having a superficial character and transcends to a space of significations. In this case the relation



between the practices and their meanings in a determined context regarding an economic activity will be described. During this stage the no-distortion of interpretation due to subjectivities or ethno-centrist or socio-centrist criterion was intended (Restrepo, 2016). Objectivity remained thanks to the phenomenological character of the ethnography, which enables to describe social phenomenon from the focus, lives and tales of the members from the group of interest (Del Rincon, 1997), this peculiarity makes it possible to attribute credibility to the data obtained through this methodology (Martinez, 2000).

## 7. ETHNOGRAPHIC RESULTS

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Below the most relevant results obtained from the application of ethnographic methodology are presented. The most relevant testimonies from the interviewees are merged, taking into consideration that their validation was based in the information saturation, relevance and pertinence of the interviewee to the social study group and the confirmation of the facts narrated with other members of the group. The list of interviewees, expressed in acronyms, is located in annex 3.

### 7.1 CONCEPTIONS AND REVELATIONS ABOUT POPULAR ECONOMY

In this subsection, it is first described how economy actors perceive this Popular Economy; these perceptions are later contrasted with its mutant and adaptable dynamic.

#### 7.1.1 The concept of Popular Economy in the imaginary of the actors

It became interesting to observe that the concept of Popular Economy apparently, has not been massively spread for it is not an easily recognized term and there are ambiguities in relation to it. For example, among formal business people perceived by themselves as medium and big, this type of economy works with low levels of technology and is based on the workforce. From a different point of view Popular Economy is connected with massive consumption, but said consumption is associated to *“(…) a little of the basic basket and everything that comes in uuh...is not being invoiced (...)* (R.M., personal communication)”. At this point the confusion over the conceptualization becomes notorious, although the ideas finally conclude in a bond between Popular Economy and informal market but limited to products of the basic basket. Lastly, at this group of interviewees, it is detected a commentary that stands out because in a certain manner places Popular Economy in an inferior category with regards to conventional economy *“(…) we have many people (in the country) that do not have access to other type of economy (...)* (J.T., personal communication)”: the speaker suggests that if there was access to another sector people would not stay in Popular Economy. For this point of view, remaining in Popular Economy would be involuntarily.

On the contrary, people closer to Popular Economy argue that it is associated with a kind of management that has generated great economic prosperity and that it is usually linked to the commercialization of several products. In accordance to the testimonies, in La Paz the circle that is dedicated to commerce in Popular Economy belong to middle class, middle-high class and would be concentrated in *“(...) in the neighborhoods of La Garita, Max Paredes, El Alto (R.C., personal communication)”*, besides areas as *Uyustus* and *Eloy Salmon* (areas typically considered as popular).

*“(...) popular economy which has been so heavily generated, so much growth, many of them are those of Uyustus and Eloy Salmon, merchants of electrical appliances, fabric importers for suits, the same tailors who began like that tailoring and later became importers, those mainly of merchandise import, so if you see later on around here the majority are imports of all kinds of products (...) (R.C., personal communication)”*.

These differences of perception over the sector reveal the existing contrast between the preconception of delayed and nonproductive sector, and the observations in the daily life of these actors.

### **7.1.2 A dynamic and adaptable sector**

An aspect that seems to characterize Popular Economy is the permanent commerce change of the sector. In fact, it is usual to hear among the interviewees in their experience, or their parents', the migration of occupation aiming to identify the one with more potential to do business. In this path, that might last several years, is where improvement stories take part; these are narrated with pride, emphasizing at all times that their current economic position has been achieved through hard work and sacrifice while overcoming obstacles and mistakes.

*“(...) Commerce, popular economy (...) are to change your occupation uuh... very often, then our parents have worked selling food, meat, eggs, beer, coke, this...sugar and they have also seen fluctuations of all the economy in Bolivia, what there is sometimes, what sometimes there is not, what is sometimes missing, what is sometimes in excess, they have been realizing that and they have been changing almost every year, migrating from different occupations (...) (R.F., personal communication)”*. The use of economic cycles reveal a great capacity of adaptation to change reflected in modifying the type of merchandising, as well as the commercial strategies of these actors.

*“(...) when we talk about commerce we obviously refer to everything, because a merchant grabs, grabs merchandising, if it does not go well we change merchandise, then we are aware of that, I have conducted toy sales for which I have travelled to Iquique, I have brought them, I have sell retail not wholesale, I have worked with local clothing which I have exported to Brazil, from there on the same manner I have brought other merchandise here to our country, uh... everything, uuh...*

*likewise with electrical appliances, I have worked with that, I have worked with blankets, I have worked with quilts, I have worked with shoes, as... I say, commerce goes with everything, I mean we are not with one and remain there, but we have to see from where we get more and what we can uuh... get more and rise up more in what we can (...)* (M.C., personal communication)”.

In this aspect it is underlined that the management of Popular Economy has evolved throughout time and that said changes are marked by generational aspects. The interviewees establish that the way of making business between parents and children has changed severely and even more if new generations are taken into consideration who currently are about 20 years old and who wish to provide a complete turn to the management of family companies based on the academia and the use of social networks to integrate their presence in a globalized world. The generational chain can be moved up to grandparents, who generally preferred remaining static in one occupation during their work life; whereas, parents have moved through different activities until finding the most suitable one to stabilize and generate capital. The children are those who support what their parents have built and make it grow. In a future, it is expected that the next generation is even more thriving economically.

*“(...) the children who continue (referring to the next generation), are who will get to the top of their economy, they will be millionaires”* (R.F., personal communication).

It is then established that the actors of the informal sector are not only more movable and strategic from what one would expect, but have also capacities that are being consolidated throughout time.

## **7.2 EMPIRIC FOUNDATION OF THE MODEL**

So, which are the factors are behind these Popular Economy success stories and this positive future panorama. According to the testimonies of the interviewees, two key elements that coincide with the proposed theoretic model were detected. On one hand, we find the so called managerial ability, and on the other, the importance of social networks for a group at the moment of making business. Curious thing is that these variables are delivered by two different generations, in the first case from the children and in the second from the parents and/or grandparents.

### **7.2.1 Presence and importance of ability, $a_i$ , in Popular Economy**

It was possible to evidence that the youngest generation of Popular Economy has a connection with academia. The way of expressing and the language used are complex and technical. During the interviews it was common for this group to quote some author in particular, exemplifying their explanations with some theory from their area of education or mention a book in which certain information was read. Likewise, it was a present detail mentioning that they were

“graduates” or that they “would be professionals” (In case of continuing their studies). Additionally, social networks belonging to *pasantes* from different folklore fraternities show that in many cases their children study abroad and are currently candidates for obtaining a superior degree or specialty abroad. Education also reaches knowledge of different languages that sometimes combine an innate bilingualism (Spanish-Aymara) with languages such as English, French, or Portuguese, depending on their use for business.

Is with all this knowledge that children address family business from another perspective; assessing their parents to generate changes within managerial tasks in an attempt to avoid making decisions “just like that” or “only based on experience”, but with strong theoretic arguments and making use of Information Technologies (TICs for its acronym in Spanish). In this sense, the new generation seems to intend demystifying the link between Popular Economy and informality and break the social stigma surrounding this topic.

*“Children want to take charge of everything and change many things. Not culturally but economically. For example, I remember some kids wanted to set restaurants of typical food from La Paz and that they were to open their fabric store to sell to pasantes from the following year. They wanted to leave the informality in which their parents were, who I believe were selling tv sets. And they wanted to open a fabric store way out of the informal (D.G., personal communication)”.*

Correspondingly to the model, we noted the existence of managerial ability in this sector from economy, which aspires even to informality. Nonetheless, what keeps the distinction of this sector with Popular Economy is above all the importance of social network and godfatherhood.

### 7.2.2 The importance of social networks, *S*

On the contrary, when referring to the importance of social networking within Popular Economy, it is usually established within the scope of folklore, it is bred by the generation of the parents to do business and the bond is inherited to the children. It was recurrent for the interviewees to claim that they were part of a fraternity or that they are connected to the folklore sphere and that by being so, a sense of belonging associated to comfort with stablished social circles was perceived. This fact is reaffirmed with the usage of possessive determinants in their expressions when referring to these subjects, “my fraternity”, “my block”, “my brothers”.

Currently, in folklore fraternities a large diversity of people can be found, from politicians, tv anchors, drivers (owners of 40-60 trucks), professionals in different areas even big and small merchants, being the latter group of higher preponderance.

In these activities local authorities participate; *“(…) everyone participates, we have seen Counselors, Congress members, Deputy Mayors (...)* (D.G., personal communication)”, and also

highly professional sectors: *“(...) there is a fraternity in which everyone is professional. Lets’ say that a block is only for lawyers, other only for engineers and so on (...) (J.A., personal communication)”*.

In accordance to testimonies, reasons for which people decide to join a fraternity or to participate in their events vary depending on the interests of each. Whilst faith and enjoyment of folklore are determinant to become a fraternity member, there are some who view this act as a great opportunity to grow labor wise, since a fraternity becomes in some sort of display case to know people and diversify the type of contacts whom in the future may become partners or potential clients.

*“(...) they need (referring to the fraternity members) to generate a network of contacts and in a patronal party well you have the brother in law, the nephew, the uncle, the friends and gradually you go generating better income due to the relation you have with them, so that is how it works (...) (R.F., personal communication)”*.

Nevertheless, the relationships surrounding business “are not built up with anyone” and in this aspect is where the concept of “godfatherhood” comes in.

*“(...) it is there (referring to the execution of business) precisely where godsons are made, [as well as ]patrons, godfathers, this and that, why? Because that is how they move and get, lets’ say, the doors open amongst themselves (...) (H.B., personal communication)”*.

During the interviews, the constant use of the words “godfather” and “godmother” (*Compadre* and *comadre*) was detected. With regards to the meaning of acquiring this denomination there are two different positions, although both make allusion to an emotional bond and commitment between equals. In the first place, becoming a godfather and godmother becomes a “title”, which according to a testimony, is acquired generally with the people with whom the party has been had (usually married couples) people with whom an endearment bond is created due to what was shared during the organization of several events that finally turns the circle into a family. Moreover, there are people for whom the title godfather or godmother is reserved for when there is a formal bond, for example, having a child been baptized. Despite the aforementioned, in the folklore sphere this term has been made popular as a substantive related to an endearment relation that involves a lot of trust.

*“(...) being around folklore (referring to a person), we know each other more and we begin to call or see each other as godfathers here and there, right? Which helps us a lot, because surrounding folklore there are many people that engage in different activities where we have professionals, businesspeople, merchants, everything, there are every kinds of people for which we help each other in accordance to our job (...) (M.C., personal communication)”*.

Per the information provided, these combined businesses are conducted sometimes searching for an increase in invested capital or because there is an individual who came to create a strong endearment bond with other offering a partnership so as to see the other grow and benefit them. It is assured that the bond unifying people to make this determination must be very strong. In fact, the one invited to be part of the business must be considered as practically member of the family, from this point is where the family blocks arise which have large fortunes behind their multiple commercial activities.

*“(...) for example, my father is importing a retro excavator from Peru lets’ say with something like 200 and so thousand dollars so I want this, I am the cousin of someone or the friend of someone, ‘oh it’s you, yes sure, don’t worry, take the excavator’ (...) (R.F., personal communication)”*.

In addition to an endearment bond between godparents that promote strategic alliances, there is also the fact of social prestige with which someone may count on within the social circle to be a potential partner or contact. For example, this could be the case of “*Pasantes*” whom in accordance to the interviewees enjoy a special type of respect from the fraternity members due to the responsibility they assume when organizing the party in a particular period *“(...) being a former pasante already gives you certain status, in other words (...) (H.B., personal communication)”*.

Having assumed this charge within a fraternity is a signal of economic stability, responsibility and social prestige for being chosen among the others. In accordance with the stories, there are fraternities that choose their *pasantes* with 5 even 10 years in advance, being the economic capacity to assume the costs of the party one of the reasons to define who they will be. In effect, *“(...) the choice is made based on the ability of an individual to cover (the expenses) and will not abandon them (...) (J.A., personal communication)”*.

*“(...) According to what we saw, they are people who have more money than the regular dancers or the people belonging to that fraternity (...) (D.G., personal communication)”*.

Once the process is finished successfully, prestige is earned as a result of complying with the responsibilities and obligations to the fraternity. This continues to make sense when it is associated with the great ability of managing resources required to organize social events that need budget structuring, which could easily reach 150 thousand dollars (for the first social gathering) and it is accompanied by other less relevant events with an expenditure varying from 20 thousand dollars and 25 thousand dollars (generally two of these parties are organized prior to the folklore entrance). It is clarified, that these amounts are divided between all the couples that form the *Pasantes* Board. In the success of these activities relies the reputation of the *pasantes* and their families.

### **7.2.3 The capacity to share costs in a competitive market, $\mu$**

Amid the benefits of contact networks that can be weaved within folklore fraternities are cost reduction, market openings and assessment that can be received from a “godfather” with knowledge on the subject.

For instance, when generating associations between two individuals, it is possible to share capital investment in the future business.

*“(...) one time that the same person who offered me told someone else, other fraternity member, a friend of mine tells him ‘go ahead, just in case next week I’ll be going to China, lets’ go’ and the other says ‘wow comadrita you have to let me recover a little, I will gather capital and then I will go’ from then on, well, you can see that they start coming together to get more capital and bring stuff (...) (H.B., personal communication)”*.

In like manner, the alliances allow sharing transportation costs of the product or for translators’ contracts, especially for those who import merchandise from China.

*“(...) that thing of godfatherhood does work because most of them travel to China, now a big majority of our country goes to China which is now very common. There are these negotiations or container sharing, bringing from that place, there is a lot of help, as I tell you these are chosen people that really help because not all of us help each other (...) (M.C., personal communication)”*.

Finally, relevant information from this economy dynamic is that whilst there is a bond of endearment, there is constant clarification that businesses are not made aiming to “help each other” in the sense of giving things or benefits to others coming from another’s work, but that the alliance networks are weaved due to trustful relationships through which there is certainty that each will work hard to make a prosperous business. Concurrently, it is underlined that in the interior of this social circle the competitiveness spirit is extremely high and expressed in different ways. About the aforementioned, one of the interviewees indicated:

*“(...) many times constructors say, lets’ say ‘I will build my house’, I tell the architect ‘look here is a house that I have seen, that house; I want something like that but more, better than that’ (...) (R.C., personal communication)”*.

This vision of always desiring to surpass what “the other” has has been a motor for the group’s economic growth, for which competing would be a positive characteristic within this socioeconomic scenario.

## 8. CONCLUSIONS

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This investigation has documented and searched for the origin of a minority of prosperous informal merchants in Bolivian economy, those who define themselves as actors of Popular Economy not for their (mostly) informal nature, but for their organizational and institutional

capacity outside of State regulation. A brief description of the 2017 Household Survey reveals that the informal may be educated and have high incomes; that they are not generally associated in unions but they do participate in patronal parties and other folklore events. A formal applied microeconomics model is developed showing that the existence of prosperous Popular Economy actors can be explained as a result of the cooperative capacity to share costs at the same time of competing in the final product market. It is also shown that the investment in popular parties can be interpreted as a type signaling mechanism to form more valuable coalitions among prosperous merchants. Then, the model results are backed up and supported by ethnographic evidence collected between June and July, 2018. It is demonstrated that the actors of Popular Economy are instructed, prosperous, that collusions are formed amongst them and that suppliers' costs are mutualized.

The importance of the results leads to two academic general recommendations. First, the use of mixed technics, such as micro-ethnographies combined with microeconomic formal modeling may be highly informative for comprehending phenomenon for which massive data collection is too complex or induces the survey respondents to provide systemically wrong information. Second, the lack of reliable data is not enough justification to omit studying social phenomenon of great importance and interest for economic sciences. Furthermore, the use of ethnography turns out to be suitable when carrying exploration studies, which through the usage of substantiated technique, would allow creating contributions over relevant matters that demand a deeper approach from those who study them. In this case, the formation of merchant elites is at the center of the standard mechanisms of the economic development process (Amsdem, DiCaprio and Robinson, 2012). Observing this mechanism while it happens before our own eyes enables us to understand the general logic of economic development. It is a mistake to ignore it.

As for public policies, three points considered important are emphasized. First, noticing and understanding the sector is vital for a tax policy that makes sense. If these economic elites exist, it is fair for them to contribute to the Tax Revenue Service; nonetheless, a purely repressive policy would be less efficient given the important organizational capacity from the sector and their lobbying capacity. Tax burden should be accompanied by necessary bureaucratic easiness and by the adapted provision of public goods by the State, perhaps taking advantage of the importance given by the sector to image and reputation matters. If the will to contribute to public property called party is important, this effort can be channeled to the provision of other equally noticeable public property.

In second place, the development of productive organizations could amply take advantage from existing organizational structures in the form of fraternities and godfatherhood networks; there is no sense in longing to create new coalitions when those that exist are already efficient and have trust established upon them. For this reason, it is vital to understand the social logic that



are behind these organizations, as well as each of the social constructions structured within the groups, since these have valid and unbreakable foundations. Consequently, considering these factors as frivolous or archaic would be a mistake.

In third place, and this is related to the aforementioned, among some conventional economy sectors a rooted skepticism towards the capabilities of Popular Economy actors to generate positive contributions to the economic development remain (Opinion, July 27<sup>th</sup>, 2018). This investigation suggests approaching the complexities of Popular Economy from a fresh point of view, destined to comprehend social ascend mechanisms, organizational capacity, and cultural relevance. In fact, it cannot be ignored that guidelines to show a new face of Popular Economy are already being drawn by passionate scientific investigations (among others, Tassi et al., 2013; Müller, 2017), by defending a concept that has a cultural center, and not an exclusive association with informality. Going hand in hand to this scientific task, it is important to work in the value of cultural contributions that are brought by popular means. Interestingly, tailors, gastronomy enthusiasts, painters, musicians, architects and other talented people have already started with this task.

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## ANNEX 1: EULER'S THEOREM FOR HOMOGENEOUS FUNCTIONS

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Let the continuous function  $f(\mathbf{x}): \mathbf{x} \rightarrow \mathbb{R}$  be differentiable in all  $\mathbf{x} \in \mathbb{R}^n$  and homogeneous of degree  $k$ . The homogeneity is given by  $f(\lambda \cdot \mathbf{x}) = \lambda^k f(\mathbf{x})$  for any scalar  $\lambda > 0$ .

### Euler's Theorem for Homogeneous Functions

If  $f(\mathbf{x})$  is a continuous function, differentiated and homogeneous of degree  $k$  then

$$\frac{\partial f(\mathbf{x})}{\partial \mathbf{x}} \cdot \mathbf{x} = k \cdot f(\mathbf{x}).$$

Proof:

$$\begin{aligned} f(\lambda \cdot \mathbf{x}) &= \lambda^k f(\mathbf{x}) \\ \Rightarrow \frac{\partial f(\lambda \cdot \mathbf{x})}{\partial \lambda} &= \frac{\partial \lambda^k f(\mathbf{x})}{\partial \lambda} \\ \Rightarrow \frac{\partial f(\lambda \cdot \mathbf{x})}{\partial \mathbf{x}} \cdot \mathbf{x} &= k \lambda^{k-1} f(\mathbf{x}) \end{aligned}$$

When we leave  $\lambda = 1$  we obtain the desired expression.

## ANNEX 2: CONDITIONS TO OBTAIN A MAXIMUM

---

Given the economic benefit function  $\pi_i(\mathbf{x}_i) = I_i(\mathbf{x}_i) - C_i(\mathbf{x}_i)$ , vector  $\mathbf{x}_i^*$  is a maximum if

$$\mathbf{x}_i' \mathbf{H}_{\pi_i} \mathbf{x}_i < 0$$

In which  $H_{\pi_i}$  is the negative-defined Hessian matrix of  $\pi_i(\mathbf{x})$  evaluated in  $\mathbf{x}_i$ . Note that  $d(\mathbf{x}_i)$  is homogeneous of degree  $-\mu$ , then  $C_i(\mathbf{x}_i) = d(\mathbf{x}_i) \cdot \mathbf{x}_i$  is homogeneous of degree  $1 - \mu$ . By extension of the Euler's homogeneity theorem for second derivatives (Annex 2), we have:

$$\mathbf{x}_i' \mathbf{H}_{\pi_i} \mathbf{x}_i = \xi(\xi - 1)I_i(\mathbf{x}_i) - (1 - \mu)(1 - \mu - 1)C_i(\mathbf{x}_i)$$

The sign of this expression is negative if

$$\xi(\xi - 1) + (1 - \mu)\mu \frac{C_i(\mathbf{x}_i)}{I_i(\mathbf{x}_i)} < 0$$

By (6), we have:

$$\xi(\xi - 1) + (1 - \mu)\mu \frac{\xi N}{N - \mu} < 0$$

Solving for  $N$ , we have

$$\frac{(1-\xi)\mu}{1-\xi-\mu(1-\mu)} < N$$

Given that  $1 < N$ , we obtain

$$\frac{(1-\xi)\mu}{1-\xi-\mu(1-\mu)} < 1$$

We conclude that a sufficient condition for  $\mathbf{x}_i^*$  to be a maximum is

$$\xi + \mu < 1$$

### ANNEX 3: EQUALITY OF MARGINAL PRODUCT VALUE FROM SUPPLIES

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We want to demonstrate that if the number of supplies  $J$  is finite, then

$$\sum_S \frac{\partial I_i(\mathbf{x}_i; a_i)}{\partial x_{ij}} = S \frac{\partial I_i(\mathbf{x}_i; a_i)}{\partial x_{ij}}$$

Note  $x_j$  the finite number of supplies  $j$  existent, so that  $x_j = \sum_S x_{ij}$ . We could rewrite the income function  $I_i(\mathbf{x}_i; a_i) = p \cdot F_i(\mathbf{x}_i; a_i)$ , in which  $F_i(\mathbf{x}_i; a_i) = q_i$  is the production function of  $q_i$  final goods. We have that

$$\frac{dx_j}{dq_{kj}} = \sum_{i \in S} \frac{\partial x_{ij}}{\partial F_i(\mathbf{x}_i; a_i)} \cdot \frac{dq_{ij}}{dq_{kj}} = 0$$

As  $\frac{dq_{ij}}{dq_{kj}}$  is the marginal rate of transformation of a product in itself (agents compete in the same sector), its elements in absolute value are worth 1. Given that the vector of the marginal productivity inverse is orthogonal to a regulation vector 1, we have that all the elements from that vector have the same magnitude.

### ANNEX 4: PROFIT-ABILITY ELASTICITY

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For the theorem of the surrounding, we have that:

$$\frac{d\pi_i(\mathbf{x}^*; a_i)}{da_i} = \left. \frac{\partial \pi_i(\mathbf{x}^*; a_i)}{\partial a_i} \right|_{\mathbf{x}_i = \mathbf{x}_i^*} = \left. \frac{\partial I_i(\mathbf{x}_i^*; a_i)}{\partial a_i} \right|_{\mathbf{x}_i = \mathbf{x}_i^*} \quad (5)$$

Now, let's define the elasticity of the economic benefit of company  $i$  in relation to  $a_i$  evaluated in  $\mathbf{x}_i^*$  by

$$\varepsilon_{a_i}^{\pi_i} \equiv \frac{d\pi_i(\mathbf{x}_i^*; a_i)}{da_i} \cdot \frac{a_i}{\pi_i(\mathbf{x}_i^*; a_i)}$$

Using (5) and noting and multiplying by  $I_i(\mathbf{x}_i^*, a_i)/I_i(\mathbf{x}_i^*, a_i)$  we obtain

$$\varepsilon_{a_i}^{\pi_i} = \frac{\partial I_i(\mathbf{x}_i^*; a_i)}{\partial a_i} \cdot \frac{a_i}{I_i(\mathbf{x}_i^*, a_i)} \cdot \frac{I_i(\mathbf{x}_i^*, a_i)}{I_i(\mathbf{x}_i^*, a_i) - C_i(\mathbf{x}_i^*)}$$

By Euler's homogeneity Theorem, we can reduce this equation to:

$$\varepsilon_{a_i}^{\pi_i} = \alpha \cdot \frac{1}{1 - \frac{C_i(\mathbf{x}_i^*)}{I_i(\mathbf{x}_i^*; a_i)}}$$

Using (3) we obtain

$$\varepsilon_{a_i}^{\pi_i} = \frac{\alpha(N - \mu)}{N(1 - \xi) - \mu}$$

## ANNEX 5: LIST OF INTERVIEWEES

AUTHORITIES	FORMAL BUSINESSPEOPLE	SMALL BUSINESSPEOPLE	POPULAR ECONOMY ACTORS	ACADEMIA MEMBERS
JD Man Section Chief from the Productive Development and Plural Economy Ministry	JT Man Great businessman from the food industry	JM Woman Merchant	RC Man Businessman in the hotel and tourism industry Multiple businesses in different areas	NT Anthropologist with specialization in Popular Economy. Author of "Hacer Plata sin Plata".
	RB Man Medium-small businessman in	PA Woman Microentrepreneur - convenience store	RF Man Worker in the tourism industry	FW Sociologist Specialist in Plural Economy,



	the commerce industry		Researcher of the neo-andean architecture	solidary and communitarian
	RM Man Medium businessman from the leather industry	MC Woman Microentrepreneur - commerce	MC Woman Businesswoman and designer in the <i>Chola</i> fashion industry from La Paz	
			HB Man Former <i>pasante</i> Lawyer	
			JAMujerCholita Anchor in telecommunication media Student of Social communication	
			DG Woman Writer in a folklore magazine Daughter of the telecommunication media owner	