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PRICE SETTING MECHANISMS IN COMPLEMENTARY CURRENCIES IN ARGENTINA'S REDES DE TRUEQUE

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ABSTRACT

Complementary currency systems are based on principles of solidarity and contestation of the regular currency systems, so their prices may differ from those in the regular economy. This study aims to explore that assumption and discusses in what ways and for what reasons some prices are different. Based on data collected in Buenos Aires during 2004, it researched the ways in which various prices in the Argentine *Redes de Trueque* followed those in the regular economy or internal considerations of the system, as relative supply and demand, production costs, and ethical and institutional factors. It found substantial evidence against the assumption that prices in the CCS were a direct conversion of prices in pesos. Each node was organised as a price network in which critical prices -namely those of groceries bought in pesos- were used as reference for other prices. The result was a power asymmetry in favour of those who had pesos to get supplies in supermarkets, but some traders refrained from obtaining the maximum profit and preferred to ask a "fair price". Notions of fairness and shared values, however, varied widely, like the effectiveness of the institutional controls put in place to keep prices down.

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INTRODUCTION

Prices are crucial in economic systems and have attracted the attention of economists for a long time. With the rapid replication of complementary currency systems around the world, experts start to wonder whether price setting processes would be different in complementary and regular currencies. Within economics, two main perspectives explain the formation of prices. The neoclassical approach sees prices as expressions of the relative scarcity of goods in markets, including money as a good, while the Keynesian school sustains that prices represent production costs plus a profit margin. In recent times, economic sociology has also generated approaches that are complementary to the former and brings ethical and moral components into the analysis of price setting, including the status attributed to the possession of certain goods, the institutional regulation of exchanges, the role of regulators, risks and uncertainties.

Complementary currency systems are based on principles of solidarity and contestation of the regular currency systems, so they may enhance the ethical and moral considerations in price setting. In what ways do they do that, if at all? Complementary Currency Systems, of which the Argentine Redes de Trueque (RT) are an example, are economic systems with a set of institutions that include the circulation of its own currency. This currency is issued in the particular embeddedness of local networks with a relatively high level of social cohesion and shared motivations. In the case of the Argentine RT, with mainly low income members, the issue of price formation was critical to examine how resources and benefits were distributed, as well as the implications of cumplementary currencies on inequalities and power asymmetries. Despite its relevance, price formation in complementary currency systems has received limited attention, possibly because it is assumed that prices in the CCS follow those in official currency. This is not necessarily the case and studies in Argentina highlight the existence of price variations between different networks and localities, noting that these differences gave way to speculation and arbitration but not analysing the causes for these variations (North, 2007; 2008; Gomez 2009; 2010; Plasencia y Orzi, 2005; Pereyra, 2006).

This article discusses pricing mechanisms in the Redes de Trueque between August 2004 and up to December 2006, which is the last period for which data has been collected and on which the RT still had a significant scale of 100.000 participants. The article aims at explaining price differences for common products in different localities and complementary currencies. It contends that no single type of exchange rate existed between the official currency and each of the complementary currencies, neither in a single locality nor in the same network. Prices were fixed in relation to various factors and reflected important inequalities in income and power. A number of non-economic factors came into play, such as social relationships, values shared or resisted among participants, and the inequalities and power asymmetries of different groups with and without access to official currency.

Data was gathered over three periods of fieldwork: the first trimester of 2003, the second half of 2004, and the last trimester of 2006. Extended open interviews with the principal network leaders and organizers facilitated the compilation of a list of nodes (exchange or market venues) that operated at that time. Forty four nodes were visited in different parts of the country, with special attention to dimensions like their scale of operation, articulation to other networks, location in poor and middle class neighbourhoods, and suburban and semi-rural localities. A semi-structured questionnaire was used in a survey with participants while they waited to enter the nodes or at times when they were not engaged in their trading activity, and resulted in a total of 386 questionnaires. The data collection was part of a bigger research project; the data used in this study focuses on three large nodes (above 200 participants) that used the same complementary currency, although mention to other nodes is also done where appropriate. This study also resorted to participatory observation information during trade hours. Three research assistants supported the data gathering.

The next subsection presents a number of perspectives on price determination in Economics and Economic Sociology. The objective is neither aimed at creating a debate on the different theories and their level of adequacy and applicability in explaining prices nor to dive deeply in any particular theory, but rather to provide a brief overview of each of them to draw meaning and rationale for the process of price determination in the Redes de Trueque. Sections three and four discuss the price setting mechanisms of different categories of commodities, respectively goods in excess demand in contrast to goods in excess supply, and products and services made specifically for sale in the Trueque. Section five analyses the embeddedness of price setting in power relations and shared values, while section six explores the role of interpersonal networks in the nodes.

THEORIES ON PRICE DETERMINATION

Price formation has been explained differently within the main strands of Economics, each one focusing on a particular aspect of the production and distribution processes and their relationship to money. Neoclassical theories attribute prices to equilibria between markets' supply and demand. Prices reflect the relative shortage of goods and are assumed to express all the information required to carry out trade. Economic agents accept these prices as part of a reality that cannot be altered without affecting the optimal performance of markets (Dornbusch, 1994). The neoclassical perspective attributes a central role to prices as mediators between sellers and buyers, but does not offer a substantive explanation of the process by which prices are determined.

In addition, monetarist theory postulates that prices represent a relationship between the quantity of money in circulation and the quantity of products within an economy. It is not a theory of price formation per se, but seeks to explain variations in prices relative to money. According to this perspective, if the amount of money in circulation increases or the quantity of products decreases, the proportion of money and goods changes and this causes variations in prices (Dornbusch, 1994). This is a theory of inflation that assumes rather stable relative prices that are modified altogether according to an exchange relationship with money. In relation to CCS, it is often assumed that there is a more or less fixed relationship between prices in complementary currency and those in the regular economy, as if there was an exchange rate between them. The rapid expansion of notes in circulation due to forgery and improper management in the Redes de Trueque, for instance, is seen as one of these changes in the relationship between complementary currency and goods which caused hyperinflation in the Redes de Trueque and this in turn generated loss of confidence and the demise of the networks in 2001 and 2002 (Hintze 2003; Hintze 2005; Shea McClanahan 2005; North 2007; North 2008).

The Keynesian school explains prices as the cost of production plus the addition of a profit margin which depends on the market structure. In a monopoly market, the producer has greater liberty to set prices in comparison to producers participating in markets with many bidders (Bowles and Gintis 1993) or in which state intervention in prices is significant (Arestis, 2001). Downward revises the contributions of various scholars that follow this perspective (Downward 2000) and unveils that Hall and Hitch were pioneers in undertaking a series of interviews with business owners in 1939 and framed a theory of price determination of "total cost" (Hall and Hitch 1939). The authors sustained that under conditions of uncertainty, companies establish prices by adding a profit margin to the total costs because the objective is not to maximize profits by equating costs and marginal revenues but to ensure benefits over the long term, which requires a combination of rules of thumb and accountancy methods. In this way, prices result from the production process. Kalecki (1971) added that large companies acting as oligopolies determine prices based on their average cost of production in the short term as well as on their competitors' prices for similar products (Kalecki, 1971: 44, cited in Downward, 2000).

Within economic sociology, Jens Beckert (Beckert 2011) argues that there are other factors that affect pricing, namely its embeddedness in social relations, and not only considerations of supply and demand or cost recovery plus a profit. Beckert identified three strands of studies that focus on social networks, cultural values and institutions to explain pricing processes. The first group of studies focuses on social relationships and social networks that affect prices. Relationships of trust may priviledge doing business with known partners and this has an impact on prices. Uzzi (1999) in the United States found a similar pattern in the relationship of businesses with their banks: a trustworthy financial partner may offer access to information and a lower risk, so it is preferable to pay a bit more than to deal with an unknown bank. In a later study, Uzzi and Lancaster (2004) analysed the relationship between businesses and their corporate lawyers and found that fees paid to lawyers depended on the length of the business relationship between the parties. In turn, the search for social status motivates buyers of luxury goods to pay high prices that are unrelated to production costs or supply shortages. "Markets are structures that reproduce roles", Beckert asserts (2011: 765).

The second group of studies in Economic Sociology focuses on cultural values and the construction of social meanings. Zelizer (1979, 1981) studied the tension between cultural values and money and discovered that there is a group of 'objects' for which it is unacceptable to even fix prices, because that would violates fundamental social values. For example, in modern societies the sale of humans or of human organs is sanctioned, although they were normal in many societies in the past. The same reasoning applies to goods of high cultural, historic and religious value. At the other side of the expectrum, some prices depend upon meanings that are time and geographically bounded. Consumers pay a higher price for fair trade and organic food products because it fits cultural values of environmental preservation and social justice (Stehr and others, 2006). The willingness to pay more or less for a product merely because of the moment in which it was designed does not depend on production costs or shortages of supply, but relates to cultural practices that define it as a reason worth paying for.

A third group of studies, according to Beckert (2011), focuses on the ways in which institutions and power asymmetries between actors influence prices. Some businesses reflect in their prices their power over other market actors. For example, large enterprises may engage in price wars to drive smaller competitors out of the market, even incurring in losses of profitability (Roy, 1997). Max Weber already described prices as an instrument of market domination in Economy and Society (Weber, 1968). Power asymmetries are expressed in the form of quality standards, intellectual patents, franchises, requirements of after-sales service provision, and sanitary and environmental regulations among the various norms that regulate the process of price setting, and which also serve to exclude weaker competitors.

In summary, economic theory offers two perspectives on the formation of prices: the equilibrium between supply and demand, and the sum of costs plus a profit margin. Economic sociology focuses on the embeddedness of prices and Beckert identifies three factors that affect price formation: social networks, cultural values and institutions with power differences.

SUPPLY AND DEMAND AS DETERMINANTS OF PRICES

The Redes de Trueque were semi-open economic systems, embedded in the regular economy yet partially separated from it by the use of complementary currencies (créditos) of voluntary acceptance among its members. Most observers of the Argentine Redes de Trueque assume that their prices followed those in the regular economy, as if partici-

Node	Locality and meetings	Origins	Characteristics of participants and coordinators	Content overview
Rocanegra	Camino General Belgrano (Lanús). Meetings held on Tuesdays and Thursdays at 14hs.	It was the abandoned regional fruit market. It was taken over by a grassroots' organization of picketers for various income generation initiatives like the node. Used créditos of the RGT.	A clear majority of participants were structural poor, had minimal assets and received state subsidies. Coordinators charged an entrance fee, afterwards barely intervened in exchanges. Infrastructure, security, hygiene and maintenance were deficient.	Inconvertible schemes; quite small openness to external economic activities
La aceitera/ El Comedero	Av. Calchaqui, (Quilmes Oeste). Meetings held on Wednesdays and Saturdays at 14 hs, Saturdays and Sundays 9:30.	It was an abandoned oil factory. It was taken over by collaborators of the RGT founders after 2001, so it was the main node of the RGT group and was used to launch its new créditos.	A mix of structural poor and new poor, in similar proportions, some travelling considerable distances to attend. Coordinators charged a hefty entrance fee, afterwards barely intervened in the exchanges. Infrastructure, security, hygiene and maintenance were minimal.	Inconvertible schemes with time currencies; frequent partnerships, especially with local governments
Cuartel IX	Camino Negro (Loma de Zamora). Meetings held on Wednesdays at 15hs and Saturdays at 14hs.	It was an abandoned regional fire station. The founders were local and had a fair bond with the founders of the RGT and to local politicians.	A clear majority of participants were structural poor, had minimal assets and received state subsidies. Coordinators charged a low entrance fee and then walked around the tables watching prices and hygiene. The pesos of the fees were used to buy groceries to sell in the node at low prices. Basic infrastructure, hygiene, security and maintenance were reasonable.	Convertible schemes; local businesses are included; interest of partnerships with local governments

Table 1. Characteristics of the three nodes visited

pants converted prices in official currency (pesos) into prices in complementary currencies (créditos), but that was not the case because there was no fixed exchange rate between the two currencies. The crédito was not tied to the peso and there was no collateral in pesos backing the créditos. Moreover, the Redes de Trueque nested a variety of rules and institutions that affected actors' decision-making, such as prices. Some products were made for sale in créditos and those prices were set within the nodes, while products that could not find buyers in pesos were effectively sold in créditos for prices unrelated to their scarcity or abundance. In absence of a straight relationship between prices in regular and complementary currencies, this study sets to unfold the factors that affect price setting in créditos.

The neoclassical theory of price determination as equilibrium between supply and demand was the point of entry of the study. A first distinction was thus made between basic needs, in excess market demand among the low-income public of the nodes, and second hand clothes, in clear excess supply in all the nodes visited. Three nodes were selected for the comparison because of their proximity, their use of the same crédito, and their similar scale in membership (details in Table 1). They differ in the enforcement of rules in the hands of the coordinators and the income strata to which the participants belonged.

A clear majority of participants were structural poor, had minimal assets and received state subsidies. Coordinators charged a low entrance fee and then walked around the tables watching prices and hygiene. The pesos of the fees were used to buy groceries to sell in the node at low prices. Basic infrastructure, hygiene, security and maintenance were reasonable.

At the beginning of the markets the researchers collected data on prices of five groceries with various vendors in the three nodes: 1) kilo of wheat flour, 2) kilo of sugar, 3) 1.5 litre bottles of cooking oil, mainly sunflower oil, 4) kilo of 'yerba' infusion dry leaves, and 5) cans of tomato paste. Many of the vendors had bought these products in local supermarkets in pesos and sold them in the nodes in créditos. Prices varied from one vendor to another within the same node; the cheapest one would sell faster than the most expensive one. The first observation was the absence of one exchange rate between créditos and pesos within the same day for each node; prices varied by hour and depended on the perceptions of different vendors. Some participants explained that they would often queue to enter the node for several hours before it opened in order to arrive first at the stalls selling groceries at lower prices. Price differences for each product, however, were rather limited (a maximum of 70% for tomato paste and a minimum of 10% for fluor). Price variations happen in the regular economy too, so products are sold for different prices by various vendors, and the same pattern is found in complementary currencies.

The reasons why participants would sell their goods at a higher or lower price in the same node are not explained by neoclassical theory of supply and demand because these were constant within a node and should have derived in the same prices. During fieldwork, the researchers asked participants who sold groceries how they determined their prices. Half of them offered all five of the articles listed in table 2 and had bought them in pesos from near-by supermarkets to sell in the Trueque for créditos. Different vendors used different methods to fix their prices, irrespective of the demand for their goods on a particular day, because they used different "exchange rates" between currencies, had different perceptions of the excess demand and were guided by different ideas on the "right price" to ask, which means that they thought that it would be possible to ask for more créditos but that would not be "fair". In contrast, the majority of them referred to their exchanging activity in regular and complementary currencies as 'their work' and denominated this trade as "their business, like any other". Some commented that they had been vendors most of their lives and did not see their activity as being any different to any other apart from using several currencies.

Table 2. Prices for groceries listed in 'arbolito' credits

	Flour	Sugar	Oil	Mate Leaves	To-mato
Rocanegra	12-15	15-16	32-40	16-22	12-22
La aceitera	22-28	33	50-65	22-32	25-28
Cuartel IX	10-11	12-15	30-35	15-18	14

About a third of the participants who sold groceries, in turn, admitted that they had obtained the goods for free from charity donations, family members and state subsidies (for example, the program MasVida distributed groceries for infants). They thought that they should avoid charging "high prices" for goods that they did not pay for and many said that they guessed a price that would follow the prices for that product of other vendors in the node. Others used the calculation method of thinking what they hoped to obtain, like a certain quantity of pastries or toiletries they want to buy in exchange for the flour or oil that they had on sale. If they could not sell them by the end of the day, they could take them to other nodes.

While all three nodes surveyed used the same complementary currency and were located within an hour of each other, prices in créditos varied between them. This was the second observation in relation to prices and the differences between them allowed for speculation by participants that saw the arbitrage between nodes as an opportunity to make a profit. For instance, some would buy the flour subsidised with entrance fees in Cuartel IX for 10 créditos and sell it two days later at La Aceitera for 28 créditos. Participants could generally identify the vendors that did this, and a few actually refrained from trading with them. In addition, there was circulation of traders between nodes with a different choice of products. In La Aceitera, participants in a node that used the same complementary currency and was located as far as 150 kilometers away (in the city of Pergamino) explained that they were able to sell groceries in La Aceitera for prices far higher than what they would charge in their localities, so at the end of the day they would collect more créditos. All of them also tried to purchase goods which were in shortage in their nodes but with a wider choice at La Aceitera (toys, school supplies, second hand shoes and clothes). They travelled on a minibus that charged them half of the fare in pesos and half in créditos, and offered the service once a month. This movement allowed participants in more remote nodes to have access to goods that were common in an urban setting.

The excess demand for groceries was a constant problem in the Trueque since its beginning and was observed by other researchers (North, 2007; 2008). It resulted from participants' income poverty and their problems to cover basic needs in pesos. Some participants emphasised that they absolutely needed to buy them in the nodes because they only had créditos. The trade of groceries between one node and another reflected differences in levels of supply and demand, which derived in the price variations anticipated by the neoclassical economics literature. According to that perspective, however, relative differences in supply and demand per locality would disappear in the long run, as well as price variations that derive from them, because more vendors would move to the places where there is excess demand in order to obtain a higher profit. In complementary currencies these price differences between localities did not disappear because trading between locations was too costly, required transportation infrastructure and was often considered socially unacceptable.

So, despite considerable circulation of vendors between nodes and similar prices in the supermarkets where groceries were bought, prices did not converge to a specific level per node or type of complementary currency, as would have happened if an exchange rate existed. Within a node, supply and demand were constant and should have translated in a single price per product per node, but they did not because of the ways in which the goods were obtained and because the perceptions of the levels of supply and demand varied between participants.

Another factor that caused variations in prices related to the embeddedness of prices. About halft of the participants with groceries referred to "fairness" in their price setting, independently from the ways in which they had obtained the goods. An elderly poor woman in Cuartel IX fixed prices in relation to her need and her perceptions of the needs of others. She explained that she received a box of groceries from the municipality which included oil and sugar. "I have diabetes and cholesterol, so I cannot use those things. There are many things in the package that I cannot use, but it helps me anyway, because I bring these groceries to the Trueque, I sell them, and with the créditos I buy other things that I can eat. But I always remember that the box was given to me for free and there are people with children who need food, so I don't charge the full price. You cannot do that", she said.

So while some participants saw the nodes as markets in which different levels of supply and demand per locality offered an opportunity to make a profit, others considered values and "the others' need" when fixing their prices, more in line with Beckert's (2011) conceptualisation of prices as embedded within a shared morality. Participants' willingness to apply some sense of social justice diverged, however, and this contradicts the neoclassical economics' assumption that sellers invariably charge the highest price possible to maximise profits –some did and some did not, and many did not know what the maximum possible price was–. Certainly, in absence of a reference exchange rate between currencies, vendors of basic groceries were the primary "price setters" of each node and their considerations to fix prices affected all other prices. They were the stronger side of the market, as referred by Bowles and Gintis (1993).

While basic groceries were in excess demand in all nodes, second-hand goods were in excess supply. Some of the items were not particularly sought after, so vendors normally returned home with unsold goods. There was a great variety of clothes on sale, among which cotton jogging trousers for children and jeans for men in good condition were present across all the nodes, so these items were chosen for the price comparison. These prices also varied substantially (prices were up to four times higher) and Table 3 presents the averages per node. Almost half of the participants with clothes on sale said that they followed the prices "of the others", while another third related to the prices of the groceries they were hoping to buy (Table 2) and the remainder could not give a clear explanation. A participant in Rocanegra said that she was hoping to purchase a bottle of oil with the credits she would obtain from selling her second-hand jeans, which she had received from a neighbour for whom she worked as a cleaner. This participant had tried to directly barter the jeans for oil, but the seller of the oil was not interested in the trousers so the exchange did not go through. She was eventually willing to sell the jeans for "whatever amount of créditos I can get, in order to buy food". This obviously increased the variability and unpredictability of the prices of second-hand goods and transferred price setting powers to the vendors of groceries.

The origin of the goods on sale partially explains the price-setting methods of second-hand clothes. As much as 70% of the vendors of second-hand clothes had got them as gifts from other persons, family members and charities, namely religious groups. Among them, 15% sold clothes they had found as waste in the streets and public places. One participant made a living as a waste-picker, mainly scavenging for bottles and cardboard, but at some point she started collecting clothes and toys to sell in the Trueque. "I find it incredible what the rich throw in the garbage. Sometimes I find clothes, shoes or things that are in good condition. In the mornings I wash everything, in the afternoon I come to the Trueque and sell them for prices similar to the others, in order to buy food and other things I need. At night I go out with my cart and pick through waste. I am always busy and wouldn't allow anyone to call me unemployed. What is unemployment like?", she affirmed.

	Adult Jeans	Children's jogging pants
Rocanegra	35	20
La aceitera	50	30
Cuartel IX	30	20

Table 3. Price of second-hand clothes

The third finding of the study related to sellers of second-hand goods, who asked for prices that varied substantially in relation to the way in which they had obtained them, their assessment of the interest and capacity of the buyer to pay for the goods, and their own need to obtain créditos to pay for groceries.

PRODUCTS BASED ON OWN LABOUR

In addition to industrially manufactured goods traded in the nodes in créditos, about a third of the goods on sale in the Trueque were specifically produced for the Trueque, so they had a more distant relationship to considerations of supply and demand for groceries or to notions of an exchange rate with the regular currency. Producers combined their own labour, necessary to make goods, with ingredients bought in pesos in supermarkets or in créditos in the nodes, and used their household utilities paid in pesos (gas to bake bread in an oven, electricity to make garments with a sewing machine, etc.). While the previous section centred on supply and demand as determinants of prices for manufactured goods, this section will focus on goods that were produced for and exchanged in complementary currency. The link between the production and the pricing methods was best studied by the postkeynesian pricing theories.

The researchers monitored prices of goods with a labour component that could be found in all nodes, namely French bread and ready-to-bake pizza dough. The prices of these products varied substantially per node and between nodes, even more than the prices of groceries but less than the prices of second-hand goods. The maximum variation was noted for prices in créditos of the pizzas, in La Aceitera they would sell for 330% of the sale price in Cuartel IX. Participants that produced goods generally indicated that they calculated the reward for their labour was an addition to the costs of the inputs. They explained that they added the cost of the ingredients and "a little more for my work", which is consistent with the postkeynesian theory of price determination that was advanced by Hall and Hitch (1937) and Downward (2000), based on a profit-margin added to the production cost. How much was "a little bit" depended mostly on the perceptions of the participants, again, and oscillated around 25%.

In the case of services, participants mostly referred to a general equivalent such as flour or sugar. Table 5 shows relative prices of produced goods in terms of a kilo of sugar, which was used in the research as a general equivalent to calculate prices. Table 5 also shows the hourly rate for child care and gardening because those were services on offer in all three nodes.

Table 5. Prices for services and products sold at La Aceitera

Prices in k of sugar	Kilo of bread	Pizza dough	Baby-sitting (female labour)	Gardening (male labour)
La aceitera	0.7	0.9	0.75	1
Regular market	1.3	2	2	3

The comparison of relative prices shows that labour in the Trueque was paid substantially less than in the regular economy, and this finding stands for goods as well as for services. While the relative prices of French bread and sugar in the Trueque was 0.7 (that means that the price of 1 kilo of bread was equivalent to 0.7 kilo of sugar), the relative prices of those two goods were 1.3 in a supermarket in regular currency (1 kilo of bread would cost as 1.3 kilos of sugar). Upon suggesting that labour was rewarded less in the Trueque than in the peso economy, participants noted that they "cannot charge more" because potential buyers did not have sufficient income to pay more. Besides, they took into account a number of non-economic aspects. "I don't have a job, so I prefer to have some créditos when I sell my bread, over nothing at all. At least I don't stay at home depressed and I buy the flour in the node, anyway", a participant said. It is worth noting that women normally received a smaller pay for child care than men did for gardening, although these services have the same price in the regular economy.

The different rewards for labour in créditos and in pesos hinted that the Trueque was less appealing in economic terms but rewarded participants with a pleasant activity and social relations. For example, some would buy groceries in supermarkets and would exchange them only with participants who used them as inputs to produce food, of which they were regular buyers. In the Billinghurst node, a participant who made pastries wrote her weekly needs and passed the list to another participant who had a low-waged job. This participant would go to a supermarket, buy the items in the list and exchange them with the baker for a given quantity of pastries and pies that they had previously agreed on. The baker had all the ingredients necessary to make pastries, some of which were pre-sold to that trading partner, and she would sell the rest in the node. This activity was her primary source of income. Both participants were interviewed separately to discuss the exchange. The buyer spent six pesos in the supermarket to buy ingredients and exchanged them for a tray of pastries that, according to his calculations, cost him nine pesos in a neighbourhood formal bakery, meaning that he had saved three pesos. The baker calculated that the cost of the ingredients was "around five pesos", but since she did not have access to pesos, she could not have bought them anyway. She would sell the tray of pastries in the node for the equivalent in ingredients of eight pesos, so the baker considered that her labour had generated an income in créditos equivalent to three pesos. This means that her small production scale, the impossibility of accessing pesos and the fact that they were sold in créditos put her pastries at a lower price than in a bakery, yet it was the only way in which she could transform her labour capacity into an income. The currency in which her income was valued did not seem important to her and these two traders had actually developed an incipient friendship. These combinations of trade and friendship are discussed in section 5.

THE EMBEDDEDNESS OF PRICES: AUTHORITY AND MORALITY

The moral embeddedness of price determination affected individual perceptions of supply and demand, as well as the level of mark-ups that could be considered acceptable. Moreover, the informal authorities of the nodes also exercised pressure on prices based on these loose notions of fairness. Institutions in the Trueque were informal, coupled with barely any state presence, and the coordinators of the nodes were the main authority figure at the local level. The participants accepted their legitimacy, however informal, by virtue of being the ones that had organised the nodes and set some of the rules prevalent in them, like the time and date when markets were gathered, the crédito used, the collection of fees, and the products and participants that were allowed or banned. The authority of the coordinators was seen not only as legitimate but often as desirable, even if they did not always exercise it as the participants expected.

In practical terms, when the prices in créditos for groceries were perceived as too high, some of the coordinators pressured vendors to lower their prices and they advised the participants to refrain from buying until prices were reduced. At times they even expelled sellers with prices considered abusive. Coordinators controlling prices were observed in the Cuartel IX de Lomas de Zamora, and also in Barrio Billinghurst in General San Martín. Their efforts were partially successful in practice: at times vendors would lower their prices, while at others they refused to do so and took their commodities to nodes where coordinators were less active. In turn, buyers sometimes admitted that they needed the groceries on sale so direly that they were willing to pay any prices for them, which validated high prices for groceries, and indirectly, for all the prices in the node. The powerbase of the coordinators was quite limited and whoever had access to official money to buy groceries in supermarkets was in a position to exploit those who depended upon the Trueque for their survival. Regular money granted them market power over those who only had products, créditos or their labour for sale. Nevertheless, the nodes where coordinators made use of their authority and intervened to control prices were generally cheaper than nodes with less active coordinators. The downside to this was that cheaper nodes attracted those who speculated and held créditos to purchase products at lower prices and resell at higher prices in more expensive nodes. So, coordinators needed to be active in various fronts and the tools they had to exercise their authority were, like everything in the Trueque, the informal institutions (unwritten and uncodified) that derived from tacit or implicit agreements.

The nodes did not appear to be spaces for the construction of a specific morality but to recapture cultural values that many defined as lost, like "the respect for each other we used to have" (interview with an elderly male vendor). The perceptions regarding the morality and fairness of the Trueque, however, varied greatly among participants and many described the nodes as spaces of fierce competition and survival of the fittest. About 25% of the participants agreed with the statement that the Trueque was "like any other business", no difference between the economy in créditos and the one in pesos, and said that they set the prices that maximized their profits "in the same way that everyone else does". At the same time, 52% took into account the "needs of others" and expected others to do the same because, they insisted, "we cannot keep on ripping each other off". A minority of 11% held an image of the Trueque as an economy with a shared ideology or morality. Strongly ideological statements referring to a "fair economy" were rare among participants, although common among the organisers. The remainder of the participants interviewed did not have a particular opinion.

The notion of social justice or fairness relates to the values studied in economic sociology (Beckert, 2011; Stehr, 2006). What was considered "fair" in the Trueque translated into expressions such as "no one should leave the node as looser" or "everyone has a right to earn a little without taking advantage of the others" (interviews with female vendors in Cuartel IX and La Aceitera, respectively). Participants generally perceived that the regular economy in pesos was "less fair" because it did not take into account the necessity of the buyers to access certain critical goods or the capacity of vendors to resign the maximum profit while setting prices. Moreover, they felt that the regular economy had excluded them and pushed them to a situation of unsatisfied needs and wants, so they had to try and make a living in the Trueque with complementary currency. The feeling of being excluded from the regular economy was the extent of what participants had in common with the others and anything beyond that was created on a person-to-person basis.

THE HUMAN FACTOR AND RECIPROCITY

While shared values and representations of fairness stayed in the background in the nodes, interpersonal relationships affected price setting behaviour in the ways advanced by Beckert (2007). Some vendors would set different prices for different buyers, according to whether they knew them or liked them or not, and referred to them with affection, often calling them "the friends of the node". These participants constructed small networks of interpersonal relations and trading, in which exchanges were closed and prices were lower than those offered to the general public. The participants who belonged in these small networks had been regular members of the nodes for a number of years and had established a reputation as producers or vendors for a number of reasons (quality, hygiene, fair prices and so on). They placed orders with one another – always the same vendors- for certain quantities each week. They completed these exchanges first, and later placed the remaining items for sale to other participants, whom they did not know or for which they had little affinity. Some vendors shared that they had sold their entire production before entering the node and stayed mainly for the social contact. Their prices were fixed internally within the networks, in reference to groceries purchased in the supermarkets with a minimal mark-up, and escaping in a certain way the power and influence of those who had access to pesos and indirectly set the nodes' prices. The exchange of breads, pastries, empanadas, pies, pizza dough and pasta in this manner was observed in all the nodes.

Participants also made references to "sharing" and "belonging" to particular networks within the nodes. A prosumer in Billinghurst would produce cannelloni stuffed with different fillings based on the orders received. She once made a large quantity for the baptism of a participant's niece and explained, "That is the beautiful part of the Trueque. It isn't only about the sales but about sharing things with each other like a family moment". Individuals who engaged in interpersonal networks in the nodes would also help each other in different ways. For example, one of the participants would go to purchase while another would stay at the table to keep an eye on products or help with sales. They would lend one another small sums of créditos and would celebrate birthdays or other social events together. Women who performed unpaid work at home and the elderly emphasized that meeting people in a similar situation of economic exclusion was important and beyond the economic impact of what they could trade. Participants were asked how many people formed part of their interpersonal networks. While the majority was unable to give a precise answer, they estimated between 10-20 people.

The embeddedness of exchanges in networks of interpersonal relations hence restricted the mark-up added to costs. Prices were invariably lower for those who were part of the closed networks than for the others. Some participants would not even sell any of their products to strangers. "I don't sell anything to exploiters who double their prices in créditos because they destroy the Trueque. I know I will manage to sell everything, anyways", said a 78 year old woman who sold homemade croissants in Cuartel IX. These interpersonal networks existed mainly in the larger nodes with several hundreds of participants.

CONCLUSIONS

This study found multiple answers to the question of what determined prices in complementary currencies in the Argentine Redes de Trueque. There is substantial evidence against the popular assumption that prices in créditos were a direct transformation of prices in pesos, as if an exchange rate existed. Prices in créditos varied between nodes, even if these were in the same locality or used the same currency. Moreover, prices differed within one node and for different buyers from a single seller.

This study has arranged goods on sale by categories and explained the prices in each category by a combination of theoretical perspectives. The first price category was of industrially manufactured goods resold in the Trueque. Among these, groceries were the main example of goods in excess demand and second-hand clothes were in excess supply. These prices varied within a node because vendors of groceries had different perceptions of the excess demand on that specific day and venue and had different appetites for obtaining the maximum profit possible. Traders referred to their individual notions of the "right price" to ask for, and even if they hinted that it would be possible to ask for higher prices, they thought that these would not be "fair". Some participants got groceries for free and calculated their sale prices by what they hoped to obtain in exchange, similarly to sellers of second-hand goods, who took the prices of "the others" as their main reference to set prices. While Neoclassical theory considers prices as equilibria between supply and demand levels, transactions in the Trueque were made at several prices that co-existed with permanent excess supply and demand because trade was embedded in diverse values and power relations and responded to mixed personal motivations and perceptions. Heterogeneity in price-setting mechanisms is present in the regular economy, too, even if it is guided mainly by profit maximisation, as shown by Beckert's review (2011). CCS accommodate for a range of price diversity and mixed motivations in one market.

In absence of an exchange rate between complementary and official currencies, vendors of basic groceries were the primary "price setters" and indirectly fixed a price level for the node. There was a clear power asymmetry in favour of those who had pesos to get supplies in supermarkets over those who did not have them, and depended on the Trueque for their survival. Regular money granted them market power over those who only had goods, créditos or their labour for sale. The use of a complementary currency, therefore, does not automatically overwrite the power asymmetries that favour agents with goods in excess demand in any economy, what Bowles and Gintis (1993) termed the "strong side of the market". However, complementary currencies facilitate proximity at the local level and constrain competition, so they also trigger a sense of fairness among vendors that can afford to do so when they are confronted with the realities of lower-income buyers.

The second price category was of goods that were produced specifically for sale in the Trueque. The Keynesian perspective of price formation was preferred because it relates the price-setting to the production process. Vendors of these goods added the costs of the ingredients and a small percentage for their work and a price comparison showed that this mark-up in the Trueque was lower than in the regular economy both for goods as for services. A lower mark-up in complementary currency goes in line with its restricted circulation, and the status of the nodes as secondary outlets for traders who are unable to sell their goods in regular currency. It also signals more flexibility than the regular economy because complementary currencies allow participants to take into account their buyers' incapacity to access goods in the regular economy. In general, an economic activity in complementary currency appears as a less attractive option for those vendors engaged in the maximization of profits but it is the preferred option for those looking exactly for a less demanding and less competitive space. CCS give those producers the chance to participate in a social space with a pleasant activity while earning a small income at the same time.

Institutional controls and shared values embedded trade and affected prices. The authority of the coordinators was used to keep prices in check in the nodes in similar ways as discussed by Polanyi (1992) and Beckert (2011) in the regular economy. The legitimacy of the coordinators of the Trueque derived from their role as organisers of the scheme and was mostly accepted. However, not all coordinators exercised their role as regulators and not all vendors were prepared to charge anything but the maximum possible, so they moved to other nodes where price restrictions did not apply. Prices in complementary currency are difficult to control in this way precisely because it is a scheme of voluntary participation from which vendors can opt out at any time. In turn, CCS are based on a set of assumptions of goodwill, so they are rarely endowed with enforcement mechanisms or rules to control opportunistic behaviour. These controls are left to notions of fairness or a shared morality, like the consideration of the needs of both buyers and sellers, but these do not necessarily perform.

In principle, the use of complementary currency facilitates the creation of an economy embedded in notions of fairness and sustainability, in which the needs of all could be taken into account, but in the case of the Argentine Trueque the notions of fairness and morality and the realistic chances of practising them varied widely. Some participants described the nodes as spaces of fierce competition and survival of the fittest, while others projected a rather idyllic image of recovering moral values. The use of complementary currency, on its own, was not enough to create social cohesion and, in fact, where social cohesion pre-existed, the use of créditos seemed to make further progress in promoting an economy of shared values. The feeling of exclusion from the regular economy was the extent of what most participants had in common with the others and anything beyond that was created on a person-to-person basis.

The final factor affecting prices relates to reciprocity and the combination of exchange and gift considerations in networks, as studied in Economic Sociology by Uzzi and Lancaster (2004), for example. Vendors set different prices for various buyers, according to their relationship with them, the time they had known each other, and so on. The interpersonal pricing mechanisms shaped sub-networks with a limited amount of participants who refered to each other with affection and to the others as strangers. Women who performed unpaid work at home and the elderly emphasized that meeting people in a similar situation of economic exclusion was important for them and beyond the economic impact of what they could trade.

A repeated expression in terms of pricing mechanisms was "following the others" and this was particularly problematic, because most of "the others" did the same, so everyone used each others' prices as references. Each node was thus organised as a price network in which critical prices -namely those of groceries bought in pesos- were used as references for other goods on sale in the node. If those reference prices were different across nodes, then the rest of the prices would also differ because each node was a price network. In addition, critical prices per node varied according to the sellers' perceptions of supply and demand, notions of fairness and so on, and these differences created more than one level of prices co-existing in each node at any given time. The smaller interpersonal sub-networks were a second layer of price networks in which sellers discriminated their prices.

It is precisely in the creation of small price networks with mixed motivations that complementary currencies are different from regular currencies. On the one hand, price setting mechanisms do not vary substantially between regular and complementary currencies. Prices show power asymmetries and sellers of goods in excess demand can make binding decisions and take advantage of those with goods in excess supply or only their labour to sell. In both types of currencies the respective authorities may intervene to push prices down, and vendors may set different prices for different buyers, depending on how close or familiar they are. On the other hand, CCS are less demanding and less competitive than the regular economy. They have lower barriers of entry and looser standards, are more inclusive of producers who are unable to sell their goods in regular currency and do not automatically sanction those who have inaccurate perceptions of excess demand or may be inclined to ask for a "fair" lower price. CCS blend motivations, so they offer a chance to producers who are excluded from the regular market and cannot run losses, but who may not wish or may not be able to maximise profits. Moreover, vendors in CCS are individuals, who are confronted face to face with the personal situation of the buyers. A personalised relationship between buyers and sellers may exist in the regular economy too, but within a mixed landscape in which traders are often large and anonymous companies who have no direct contact with their trade partners. The absence of a single price per product in complementary currency is the consequence of these blended motivations that embed price setting processes, in addition to lower competitive pressures and personalised trade relationships.

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