

ARMONÍAS DESIGUALES

DATA SONIFICATION - SOUND INSTALLATION

"The goal was modest, seen in perspective today. It was to get a few meters of carpet for the pieces of the house that we were going to move in after we were married. We visited different stores and none of them wanted to sell. It wasn't that they didn't want to deliver the merchandise. They did not know at what price to charge it because they did not know what the replacement value would be. They knew it was going to be higher, but not how much higher. Selling with that uncertainty could be a decision that defined the bankruptcy of the business ".Zaiat, A. (2017, May 27). 1989 *El año caótico*.

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REPORT

How was your residency at AIR - ARTIST IN RESIDENCE Niederösterreich ?

Personally, after having done several residencies in different parts of the world, I think that a city like Krems is ideal for a residency. It has a perfect balance between nature and urban life, and the size of the city allows the artist to concentrate on his work, but also to maintain a minimum of social routine and urban life. I felt very comfortable in the get together activities and the museums and galleries visits. I think it is important to get in touch and get to know the other artists who participate in the program, as well as to contact curators from the region. I don't really find any disadvantages or criticisms of the program. I think it is very well organized and in my case it was successful. It would be interesting if the institution can help to promote the work done during the residency in future concerts or exhibitions within the Austrian territory.

What did you realize during your residency period ?

My residency was very productive, I was able to achieve the expected goals by the end of my residency period, with a working system, and a musical / sound result. During my residency, I did research gathering information on different aspects of the Argentine economy, and investigating options to convert these numerical values into sound. I experimented with the Max MSP software, creating a device to translate lists with numerical values to MIDI notes. The piece is ready to be presented as a installation, anyhow the research will continue to evolve and expand over time, trying to improve the translation data system, exploring different sonorities and developing the project.

The interface generates automatic music ,created without the intervention of a composer or an instrumentalist, simply created through data sonification. Being an electronic musical piece it is interesting to work with sounds of acoustic instruments, although this could change in the future. The fact of using MIDI to translate data and generate musical notes allows changing the timbral and aesthetics of the work in a very simple way.

As part of the creative process, it was found that this automatic musical system can be translated into scores, this allows that the sound piece could eventually be performed by instrumentalists. It is very interesting for the project the fact that being a generative music piece created through data sonification allows that an orchestra can play it, exploring borders and hybrids between genres and extending the possibilities of the work . (see extended description of the project below).

Parallel to the project I came to carry out, I was able to experiment and sample the Buchla synthesizer, I made recordings of different textures, sine waves and patch combinations, I made it interact with my acoustic instruments, Bawu (chinese flute), Clarinet, and gong and I was able to create some musical structures. Likewise, I was also composing music and recording with the piano.

What did you miss at the residency?

Nothing that was really lacking, nothing to add.

What do you appreciate at AIR - ARTIST IN RESIDENCE Niederösterreich?

I appreciate the human closeness, the predisposition and availability to help during the stay. I must add that the landscape of the region is incredible and thanks to the bicycle system that the residence has, I was able to travel it, undoubtedly (although not directly) a great contribution to artistic development, The exchange with the other artists was also very enriching, as well as appreciating the cultural panorama of Austria through the group activities carried out.

ARMONÍAS DESIGUALES

DATA SONIFICATION

PROJECT

Armonías Desiguales is a generative musical piece, created through data sonification, focusing its attention on the inflationary phenomenon in Argentina (where prices grow around 50% annually). It was developed during the residency AIR - Artist in residence Niederösterreich (Austria) with the collaboration of Chateau Ephemere (France) and Master of Sound Art (University of Barcelona).

A device created in Max Msp transforms indicators of the Argentine economy into sound materials: inflation index, poverty, unemployment, salary, devaluation, prices of specific products of the basic basket make up this complex socio-political framework. These data are extracted from official state sources (INDEC Instituto Nacional de Estadística y Censos de la República Argentina), and from informal sources such as prices in supermarkets, becoming variables used to generate music and automate musical parameters.

Each variable is assigned to an instrument (strings, clarinet and percussion) using samplers in Ableton live, Max translates lists of these numerical values into musical notes. The interface created generates automatic music made without the intervention of a composer or an instrumentalist, simply created through data. Being an electronic piece it is interesting to work with sounds of acoustic instruments, and explore the boundaries between generative music and orchestral music, since generally generative works are purely abstract without a musical discourse. The fact of using MIDI to translate data and generate musical notes allows changing the timbral and aesthetics of the work in a very simple way.

The project questions an economic model based on social inequality, a machine to create poverty that leaves 50% of the Argentine population living in marginality, where a monetary devaluation brutally reduces your economic capacity, your ability to survive, your reality is instantly transformed in just one second. As in a tonal modulation stands you in a new ground, and a reconfiguration of relationships, having high implications on people's character, behaviour and emotional stress. The installation tries to make audible a problem and transform it into a sound piece, loaded with atmospheric drama, the constant changes and transformations of economical reality are represented through tonal and timbral transformations.

The analyzed time periods can vary from a century: (exchange rate from 1914 to 2019), up to 3 months: price of bread for January, February and March 2020 from Carrefour supermarkets (only in the month of January the price was modified 21 times).

The narrative nature of the installation evidence different moments in the history, that are reflected through sound events, (eg: tympani sound announce each devaluation). Each variable follows its own cycle, the repetition of the cycles of different durations thus generate phase shifts and infinite harmonic combinations between the different instruments. The rise and fall of musical notes will be determined by the rise or fall of the economic factor (ex : if the price rises, the note rises in register, if unemployment falls, the note will fall in register).



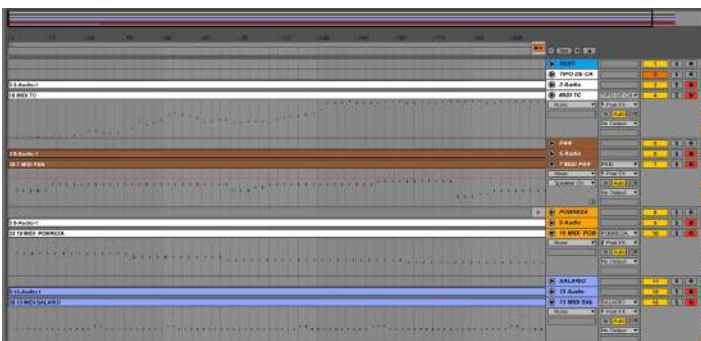
- To listen an extract from the sound piece [click here](#)
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Formats:

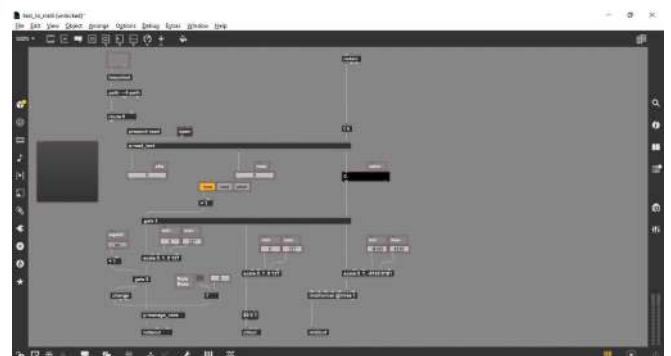
The piece can be assembled as a multi-channel installation where each instrument will occupy a speaker representing a socio-economic aspect of Argentina on the timeline, scattered in space and playing simultaneously forming infinite random harmonies. The work allows it to generate scores, with which it could be interpreted by instrumentalists, interacting with the installation itself or in a concert instance.



- To see a video of the installation format [click here](#)



MIDI MAP



MAX CAPTURE

Score /physical possibilities :

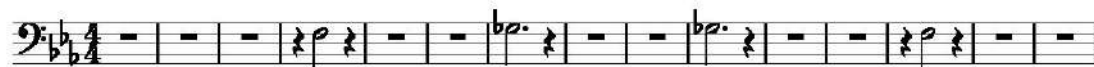
Here we can see a possible prototype of the score, the result of the conversion of the economy data (in this case the exchange rate) to MIDI notes generated by the Max patch. It could well function as a Particella of instrument, the present one serves only as an example, leaving this possibility open for the future.

Cello**Armonías desiguales**

Nicolás Melmann

Tipo de Cambio

♩ = 80



16



31



46



61



76



91



106



121



136



Socio-economic context:

IPC : Consumer's price index

INDEC: National Institute of Statistics and Censuses (Argentina) - Main data source

Armonías desiguales proposes working on the harmonic field, harmony understood as equality in the relationship between two parties, alluding to the proportional, the stable, the expected, and in turn the social inequality that generates the problem addressed in this research, creating as a result harmonies that they disregard the treatises of conventional harmony, creating through data these tensions, and dissonances, these unequal harmonies.

The Inflation level in Argentina is around 50% per year, ranking second in the world (just below Venezuela), only 10 countries in the globe have an inflation level above 6% per year. The accumulated inflation during the four years of the last president was 300%, which triggered the poverty and unemployment rates. The percentage of the population below the scarcity threshold went from 29% in mid-2015 to 40.8% last June - the highest since the 2001 crisis and the Argentine currency suffered a depreciation of approximately 500% in the last 4 years.

This phenomenon generates, among other things, a poverty rate that also oscillates 50%. The project tries to put on the table numbers that quantify human realities, realities that change abruptly, and are transformed as a consequence of continuous money devaluations and crises where your economic reality and your possibilities of interacting with the world can be dramatically modified instantly.

The sonification of the economic data gives the piece a certain formal transparency, there is a diegetic / direct correspondence between the economical fact and a sound event. As the ups and downs of the economy are a central concern in their lives, any argentine person can predict a large part of the movements that will occur in the piece, if he knows the historical moment from which the data is being taken, and its relationship with the sound parameters . Many of the crises in Argentina replicate international crises. In this sense, it is expected that the work will be accessible regardless of the nationality of the listener. Despite focusing on Argentina reality, the project aims to reflect the results of an exhausted global economic model, which of course oppresses many other countries in different ways, far from remaining in localities, it tries to reflect on the collapse of the capitalist model.

The project proposes to reflect on this unstoppable engine of inflationary crisis that seems chronic in the Argentine economy, these cyclical crises generate an infallible exclusion device, creating a society living in social injustice, violence, paranoia and psychic and emotional instability, where the only foreseeable thing is the crisis. This project works in some way as a complaint, as well as trying to transmit and make audible a problem rarely addressed in an artistic context in Argentina, projected to the rest of the world.

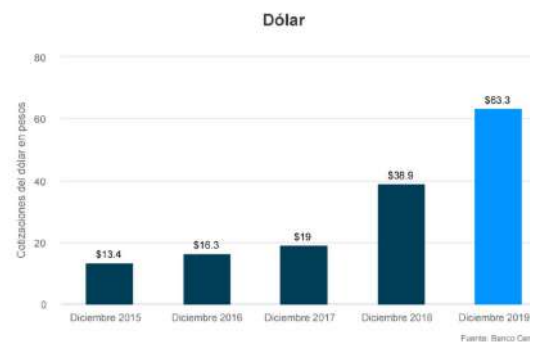
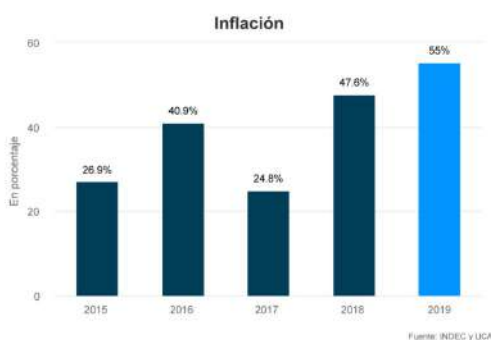
As a of personal reflection that inflation has implications in the way of being of the Argentine population, these drastic and sudden changes that occur in the economy shake the personal lives of its inhabitants, and constantly force people to change plans, redesign the everyday, adapt to new realities.

What is inflation? How is it produced?

For a better understanding of the project it is necessary to clarify some conceptual aspects around the economy.

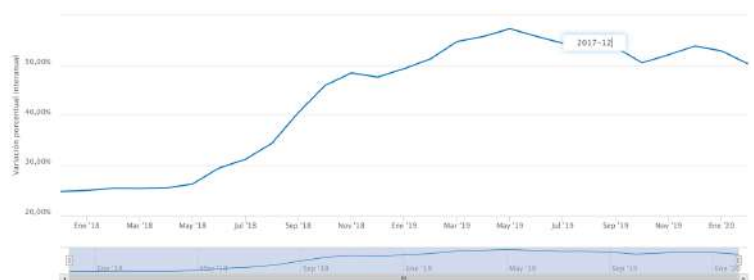
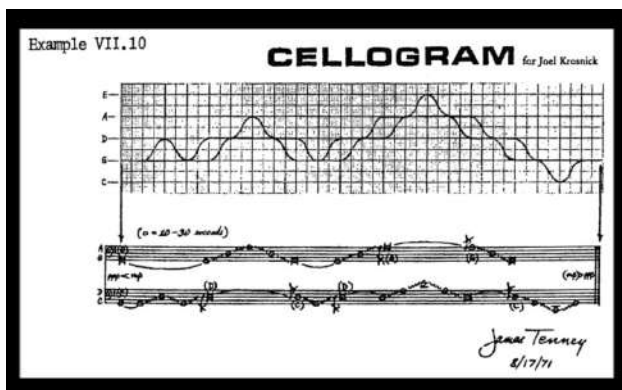
Inflation is a phenomenon of the economy that implies the increase in prices sustained over time, however, there is no single definition of inflation or a single causal factor, this is a tireless topic of debate among economists who argue different hypotheses and origins, the truth is that there are only 20 countries in the world with an annual inflation rate greater than 6%, among them is Argentina in second place (below Venezuela) according to an editorial note from the newspaper Perfil published in January (2020):

Official figures released this Wednesday (01/15/2020) indicate that inflation for the whole year 2019 in Argentina reached 53.8%, which was the highest annual variation in the last 28 years, when in 1991 the Price Index amounted to 84%. Compared to the world, our country's figure is the third highest, surpassed by Venezuela and Zimbabwe. In this way, the Argentine peso is the third banknote that lost the most purchasing power in the world during 2019. Within the region, Argentina is the only country with double-digit inflation, while the rest of the Latin American nations have, on average, a cost of living of 3.20%. (PERFIL, 2020).

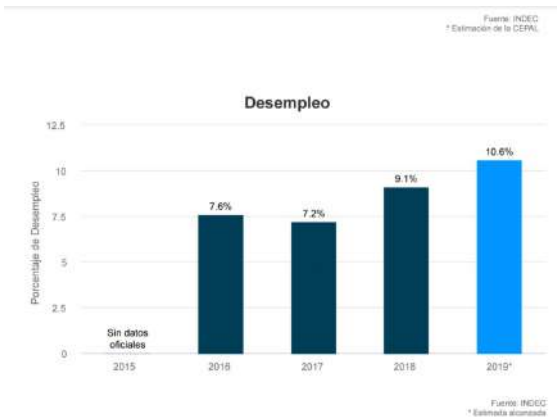


- Inflation - Source INDEC
- Money devaluation - Source INDEC

Analogy : Cellogram - IPC



- "Cellogram" James Tenney (1971),
- IPC 2018-2019



- Unemployment, source: INDEC



- Poverty and Indigence Index, source: INDEC

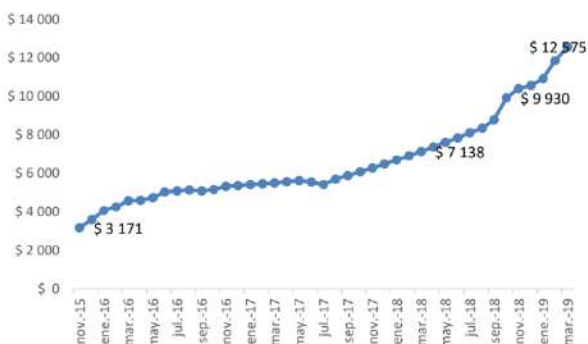


- Monthly IPC (Inflation), source: INDEC



- IPC (Inflation) annual accumulation, source: INDEC

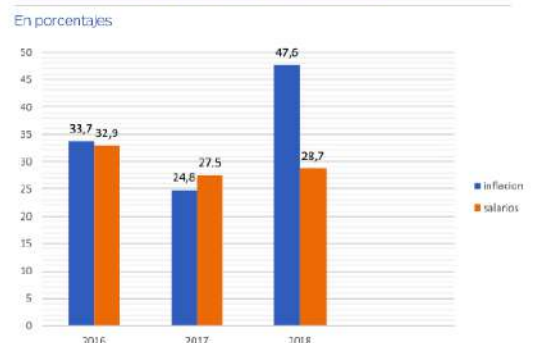
Gráfico 1 –Variación del costo de la canasta básica, octubre 2015 - febrero 2019 para una familia tipo



Fuente: elaboración CEPA

Increase in the basic food basket,
Source: Center for Political Economy Argentina CEPA

Gráfico 1. Variación anual de los salarios frente a la variación anual del IPC en el periodo 2016-2018



Fuente: elaboración propia en base a datos del INDEC.

- Salary ratio, IPC (Inflation) source: INDEC

Data collection:

It was necessary to make decisions as to which variables of the economy were most useful for the project, most representative of the crisis and inflationary movements in the country, as well as to compare different sources to arrive at an average as realistic as possible, on the other hand On the other hand, it was interesting to juxtapose data from the macro economy, (which are strong indicators of the socio-economic reality) with the prices of food products that give a more concrete and less abstract character to said reality, that is why values such as the price of the bread, or the evolution of the price of an empanada over almost 19 years.

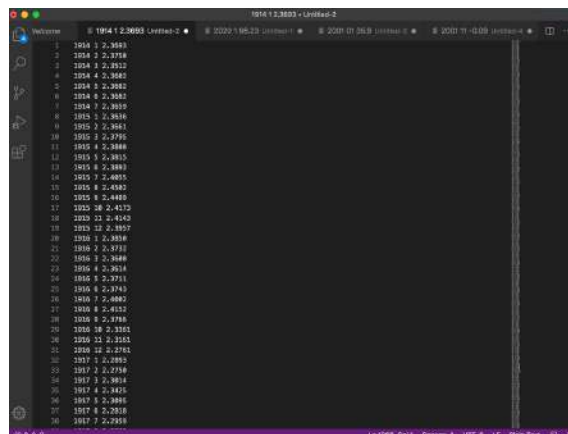
After investigating in the databases of INDEC and the UCA (Catholic University), which are the two major producers of censuses and data sources in the country, it was decided to opt for the following variables:

Used Data :

- Inflation - monthly measurement - December 2001 - February 2020 (196% inflation). [click here](#)
- Poverty - 6 months measurement - January 2001 - July 2019 (last figure 35.5%). [click here](#)
- Exchange Rate - daily measurement January 1914 - Dec 2019. [click here](#)
- Devaluation - multiple devaluations throughout history with peaks during the 70's and 80's [click here](#)
- Currency Exchange 1970/1983/1992 - reduction of zeros in the currency throughout history. [click here](#)
- Salary - monthly measurement - November 2001 - November 2019.
- Empanada - Pizzeria Firullay (Mar del Plata) December 2001 - Dec 2019 the value of the empanada started at AR \$ 1, currently it is AR \$ 36 (inflation of 3,600.00%). [click here](#)
- Bread - Carrefour Supermarket Listings for January - February and March 2020 The supermarket lists indicate that the prices of bread have varied 21 times in the same month (increase of 10% approx.).

IPC (consumer price indexes) registers price variations at a global level throughout the country with a monthly measurement base, the IPC involves food and non-alcoholic beverages, alcoholic beverages and tobacco, clothing and footwear, housing. Water. electricity and other fuels, home equipment and maintenance, health, transportation, communications, recreation and culture, education, restaurants and hotels, goods and services.

The IPC does not represent neither more nor less than inflation itself, the values used are an average of the price variations of these items with a monthly periodicity at the national level (containing all the provinces).



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1 1914 1 2,3683
2 1914 2 2,2378
3 1914 3 2,2522
4 1914 4 2,3685
5 1914 5 2,2982
6 1914 6 2,3681
7 1914 7 2,3629
8 1915 1 2,3636
9 1915 2 2,3681
10 1915 3 2,3795
11 1915 4 2,3688
12 1915 5 2,3815
13 1915 6 2,3889
14 1915 7 2,4895
15 1915 8 2,4382
16 1915 9 2,4489
17 1915 10 2,4172
18 1915 11 2,4142
19 1915 12 2,4857
20 1916 1 2,3838
21 1916 2 2,3811
22 1916 3 2,3888
23 1916 4 2,3814
24 1916 5 2,3751
25 1916 6 2,3743
26 1916 7 2,4882
27 1916 8 2,4522
28 1916 9 2,3788
29 1916 10 2,3505
30 1916 11 2,3505
31 1916 12 2,2781
32 1917 1 2,2782
33 1917 2 2,2756
34 1917 3 2,3824
35 1917 4 2,3815
36 1917 5 2,3886
37 1917 6 2,3828
38 1917 7 2,2781

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Visual Studio Code - Exchange List

- Historical exchange ARS Peso / USA Dólar 1914 - 2020 Argentine Banknotes [click here](#)

It can be seen how the currency depresses dramatically throughout history, how abrupt devaluations make the currency lose value, losing the purchasing power of the working class, the economy is tied to the dollar price .

	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
1940	4,3952	4,3042	4,2805	4,3514	4,4167	4,5497	4,6033	4,4400	4,3091	4,2654	4,2616	4,2423
1941	4,2335	4,2459	4,3283	4,2771	4,2209	4,2206	4,2129	4,2044	4,2314	4,2419	4,1956	4,2165
1942	4,2340	4,2382	4,2284	4,2262	4,2464	4,2561	4,2305	4,2175	4,2253	4,2174	4,2339	4,2401
1943	4,2421	4,2307	4,1963	4,0924	4,0009	3,9892	3,9904	3,9991	3,9997	3,9981	3,9966	3,9912
1944	3,9899	3,9940	4,0152	4,0181	4,0293	4,0277	4,0489	4,0424	4,0294	4,0330	4,0269	4,0407
1945	4,17	4,09	4,02	4,05	4,07	4,07	4,03	4,00	4,01	4,12	4,16	4,15
1946	4,22	4,19	4,19	4,17	4,12	4,09	4,13	4,10	4,14	4,13	4,17	4,21
1947	4,20	4,18	4,16	4,15	4,19	4,19	4,32	4,58	4,61	4,65	4,49	4,48
1948	4,51	4,44	4,44	4,59	5,10	5,63	6,01	6,54	7,16	8,87	8,53	8,50
1949	9,84	9,06	9,06	9,56	10,01	9,56	9,36	9,81	11,88	13,02	15,21	15,86
	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
1950	15,20	14,80	13,90	13,75	13,95	13,74	15,50	17,25	18,05	19,65	19,55	16,50
1951	16,85	15,50	18,20	19,50	25,50	24,10	24,50	28,60	29,50	27,90	27,75	27,00
1952	28,60	26,50	24,50	25,00	23,10	21,25	21,50	20,40	19,80	20,50	21,00	23,15
1953	23,25	22,75	22,85	23,75	23,80	23,60	23,85	21,95	22,75	22,25	19,80	20,10
1954	22,25	22,60	23,25	25,00	26,00	25,50	26,15	26,25	26,50	26,50	26,95	26,70
1955	27,85	28,10	28,40	29,50	31,85	33,25	30,75	31,50	27,00	29,15	32,50	36,00
1956	40,50	42,85	40,50	37,80	35,20	32,60	30,20	32,50	30,80	32,10	34,90	36,55
1957	37,40	36,70	40,50	37,00	40,25	40,75	42,50	43,85	43,00	39,25	37,00	37,20
1958	37,25	38,25	40,50	42,00	42,30	42,10	42,50	46,50	54,25	73,50	71,50	70,50
1959	65,30	68,70	68,40	80,80	88,80	84,90	86,00	83,50	82,50	82,30	83,10	83,30
	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
1960	82,90	82,70	82,90	83,40	82,80	82,50	82,60	82,60	83,00	82,70	82,85	82,65
1961	82,75	82,60	82,90	83,50	82,80	82,60	82,75	83,50	83,25	83,45	83,30	84,20
1962	83,55	83,40	83,80	99,50	112,50	133,00	118,40	126,30	128,80	139,60	148,40	134,10
1963	134,40	135,20	140,30	137,20	138,80	139,00	134,00	134,60	149,60	146,80	140,80	132,50
1964	134,25	130,90	138,25	142,70	140,40	156,55	174,15	169,35	161,22	166,05	179,41	192,89
1965	215,00	323,38	217,88	227,00	248,00	276,20	285,71	272,34	258,18	233,07	225,00	233,90
1966	247,37	238,16	228,88	222,78	234,90	238,29	224,65	227,98	247,35	256,18	266,78	270,60
1967	282,22	295,77	345,24	348,18	348,75	349,25	350,00	349,75	349,75	349,50	349,50	350,00
1968	350,00	350,00	349,75	349,50	350,00	349,50	349,50	350,00	350,00	350,00	350,00	350,00
1969	350,00	349,75	349,50	350,25	351,75	352,00	351,25	351,75	351,75	351,50	351,50	352,25

	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
1970	3,4975	3,5000	3,4850	3,4950	3,5125	4,0100	4,0100	4,0075	4,0175	4,1650	4,2900	4,3350
1971	4,2750	4,1750	4,3350	4,6350	4,8050	5,2550	5,3750	5,8050	6,9050	8,8500	9,7750	9,4000
1972	10,15	10,35	10,00	10,15	11,95	11,75	11,20	13,00	13,70	12,00	11,88	11,25
1973	12,13	11,45	11,43	12,50	12,50	10,88	10,10	10,95	11,10	10,60	10,58	11,20
1974	11,90	12,30	12,40	13,30	14,40	14,90	16,60	17,55	18,70	20,05	20,90	22,00
1975	22,65	23,45	28,35	36,45	47,00	53,00	66,50	76,00	110,00	142,50	132,50	127,50
1976	196,00	270,00	325,00	255,00	245,00	247,50	250,00	263,00	247,00	245,50	273,00	276,00
1977	297,50	332,50	342,50	364,50	372,50	390,00	411,50	437,50	468,50	510,50	550,50	599,50
1978	636,50	679,50	717,50	759,50	765,50	783,50	797,50	832,50	861,50	911,50	956,50	998,00
1979	1048,50	1098,50	1151,50	1202,50	1257,50	1310,50	1365,50	1414,50	1463,50	1515,50	1567,50	1611,50
	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
1980	1659,50	1698,50	1745,50	1782,50	1819,50	1854,50	1872,50	1910,50	1932,50	1946,50	1972,50	1997,50
1981	2038,50	2267,50	2485,50	3200	3625	7050	7200	7300	7590	9050	11100	10400
1982	10300	10000	11850	14800	21250	24250	58500	49000	47500	55000	63500	68000
1983	69250	80000	93250	93500	98500	11,50	14,75	19,30	25,90	24,10	24,15	25,65
1984	35,25	44,85	52,85	58,40	65,65	73,65	82,25	108,50	121,80	139,25	180,50	205,00
1985	266,00	356,00	464,00	557,50	673,00	0,855	0,950	0,950	0,900	0,930	0,865	0,875
1986	0,885	0,865	0,925	0,910	0,890	0,880	0,925	1,165	1,213	1,265	1,425	1,668
1987	1,613	1,720	2,035	2,070	2,060	2,145	2,553	3,083	3,625	4,045	4,36	5,10
1988	5,50	6,18	6,48	7,35	9,21	11,32	12,65	14,40	14,96	15,08	15,60	16,41
1989	17,72	28,20	47,90	79,00	290	540	665	665	650	723	1020	1950
	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
1990	1870	5750	4675	4925	5005	5310	5465	6305	5730	5570	5170	5820
1991	9250	10275	9630	9833	9923	9993	9973	9973	9903	9913	9909	10028
1992	0,9905	0,9899	0,9934	0,9895	0,9895	0,9915	0,9919	0,9910	0,9911	0,9911	0,9928	0,9916
1993	0,9991	0,9991	0,9997	0,9978	1,0001	0,9983	0,9996	1,0013	1,0013	0,9991	0,9975	0,9984
1994	0,9984	1,0015	1,0011	0,9986	0,9985	0,9974	0,9984	0,9991	0,9993	0,9990	0,9999	1,0014
1995	1,0006	1,0017	1,0009	1,0011	0,9986	0,9989	0,9994	0,9984	0,9989	1,0003	0,9992	1,0016
1996	0,9992	0,9998	0,9997	0,9995	1,0000	1,0006	1,0012	1,0001	1,0002	0,9995	0,9989	1,0005
1997	0,9985	0,9993	0,9994	0,9995	0,9993	1,0005	0,9998	0,9996	0,9995	1,0022	1,0007	1,0014
1998	0,9988	0,9989	1,0007	1,0001	0,9997	0,9997	1,0002	1,0019	1,0001	1,0035	0,9999	1,0010
1999	1,0003	0,9999	0,9987	0,9994	1,0014	1,0049	0,9997	1,0004	0,9990	1,0000	1,0070	1,0014

	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
2000	0,9996	0,9987	0,9991	0,9987	1,0009	0,9984	0,9990	0,9986	0,9989	0,9999	1,0004	1,0014
2001	0,9992	0,9996	1,0009	1,0001	0,9994	1,0010	1,0290	0,9974	0,9989	1,0029	1,0038	1,1499
2002	1,9500	2,0000	2,9500	2,9750	3,6000	3,8500	3,6900	3,6100	3,7400	3,5150	3,6200	3,4050
2003	3,2050	3,2050	2,9750	2,8250	2,8550	2,8000	2,9150	2,9450	2,9050	2,8500	2,9700	2,9400
2004	2,9750	2,9150	2,8650	2,8450	2,9600	2,9550	2,9750	3,1050	2,9850	2,9750	2,9450	2,9750
2005	2,9240	2,9380	2,9170	2,9100	2,8830	2,8870	2,8610	2,9110	2,9100	3,0020	2,9660	3,0320
2006	3,0660	3,0740	3,0820	3,0480	3,0850	3,0860	3,0720	3,0970	3,1040	3,0890	3,0680	3,0620
2007	3,1070	3,1000	3,1000	3,0900	3,0770	3,0930	3,1210	3,1560	3,1500	3,1420	3,1450	3,1490
2008	3,1580	3,1610	3,1680	3,1640	3,0990	3,0250	3,0440	3,0300	3,1350	3,3880	3,3730	3,4530
2009	3,4880	3,5670	3,7200	3,7140	3,7490	3,7970	3,8300	3,8510	3,8430	3,8190	3,8110	3,8000
	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
2010	3,8350	3,8590	3,8780	3,8880	3,9290	3,9310	3,9400	3,9500	3,9600	3,9570	3,9880	3,9760
2011	4,0080	4,0300	4,0540	4,0800	4,0900	4,1100	4,1450	4,2000	4,2050	4,2360	4,2810	4,3040
2012	4,3325	4,3540	4,3790	4,4125	4,4700	4,5270	4,5850	4,6387	4,6975	4,7635	4,8370	4,9160
2013	4,9780	5,0455	5,1206	5,1885	5,2835	5,3863	5,5062	5,6713	5,7908	5,9082	6,1405	6,5180
2014	8,0188	7,8855	8,0010	8,0008	8,0785	8,1315	8,2138	8,4013	8,4335	8,5030	8,5280	8,5505
2015	8,6330	8,7215	8,8197	8,9219	9,0035	9,0987	9,1976	9,2987	9,4258	9,5180	9,6609	12,9399
2016	13,8910	15,8315	14,6975	14,2850	13,9825	15,0385	15,0010	14,9262	15,3595	15,1650	15,8665	15,8680
2017	15,8985	15,4750	15,3805	15,3885	16,0940	16,6220	17,6450	17,3370	17,3130	17,6350	17,3050	18,6145
2018	19,6350	20,1150	20,1150	20,5305	24,9610	28,9365	27,4210	36,9000	41,2900	35,9000	37,7315	37,6530
2019	37,2990	39,1260	43,3615	44,3000	44,7695	42,4800	43,8200	59,5000	57,5925	59,5700	59,9250	59,8700
	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Sep	Oct	Nov	Dic
2020	60,2750	62,1300	62,5325									

Empanada: It is interesting for the project to integrate index data at the macro level of the national economy, together with prices of products direct to the consumer, so that simpler and more concrete dimensions are taken on the values of increases in specific products of daily use, and how This can affect the daily life and economy of a simple working-class family.

So much so that it was decided to use the brochures of the Firullay Pizzeria in collaboration with the artist Nicolás Berenz who compiled and kept them for 19 years for her work "Look what promos", registering throughout this period an increase in the number of Empanada. 1 to AR \$ 36 over 19 years (36 times its value increase). The empanada is a culturally powerful food that involves Argentine tradition and folklore, which is why it is symbolically and graphically interesting to include it in the project.

- "Mira que promos" Nicolás Bernez [click aquí](#)

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 100
DOCENA de EMPANADAS	\$ 1100
MUZZARELLA	\$ 600
3 MUZZARELLAS	\$ 1700
SUPER MUZZARELLA	\$ 750
CALENTITOS	\$ 350

TALCAHUANO 432 - Tel.: 481-0333
BOLIVAR 2350 - 491-3633
PEÑA 3984 - Tel.: 475-7894 - 475-5065
ENVIOS A DOMICILIO \$ 1,50

DIC. 2001

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 170
DOCENA de EMPANADAS	\$ 1750
MUZZARELLA	\$ 1000
3 MUZZARELLAS	\$ 2700
SUPER MUZZARELLA	\$ 1200
CALENTITOS	\$ 500

TALCAHUANO 432 - Tel.: 481-0333
BOLIVAR 2350 - 491-3633
PEÑA 3984 - Tel.: 475-7894 - 475-5065
ENVIOS A DOMICILIO \$ 1,50

ENE. 2002

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 180
DOCENA de EMPANADAS	\$ 1900
MUZZARELLA	\$ 1200
3 MUZZARELLAS	\$ 3300
SUPER MUZZARELLA	\$ 1400
CALENTITOS	\$ 650

TALCAHUANO 432 - Tel.: 481-0333
BOLIVAR 2350 - 491-3633
PEÑA 3984 - Tel.: 475-7894 - 475-5065
ENVIOS A DOMICILIO \$ 2,00

FEB. 2002

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 190
DOCENA de EMPANADAS	\$ 2000
MUZZARELLA	\$ 1200
3 MUZZARELLAS	\$ 3300
SUPER MUZZARELLA	\$ 1400
CALENTITOS	\$ 700

TALCAHUANO 432 - Tel.: 481-0333
BOLIVAR 2350 - 491-3633
PEÑA 3984 - Tel.: 475-7894 - 475-5065
ENVIOS A DOMICILIO \$ 2,00

ENE. 2003

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 200
DOCENA de EMPANADAS	\$ 2200
MUZZARELLA	\$ 1300
3 MUZZARELLAS	\$ 3600
SUPER MUZZARELLA	\$ 1500
CALENTITOS	\$ 750

TALCAHUANO 432 - Tel.: 481-0333
BOLIVAR 2350 - 491-3633
PEÑA 3984 - Tel.: 475-7894 - 475-5065
ENVIOS A DOMICILIO \$ 2,00

ENE. 2004

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 225
DOCENA de EMPANADAS	\$ 2500
MUZZARELLA	\$ 1500
3 MUZZARELLAS	\$ 4200
SUPER MUZZARELLA	\$ 1700
CALENTITOS	\$ 900

TALCAHUANO 432 - Tel.: 481-0333
BOLIVAR 2350 - 491-3633
PEÑA 3984 - Tel.: 475-7894 - 475-5065
ENVIOS A DOMICILIO \$ 2,00

ENE. 2004

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 240
DOCENA de EMPANADAS	\$ 2600
MUZZARELLA	\$ 1600
3 MUZZARELLAS	\$ 4500
SUPER MUZZARELLA	\$ 1800
CALENTITOS	\$ 1000

TALCAHUANO 432 - Tel.: 481-0333
BOLIVAR 2350 - 491-3633
PEÑA 3984 - Tel.: 475-7894 - 475-5065
ENVIOS A DOMICILIO \$ 2,00

ENE. 2005

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 275
DOCENA de EMPANADAS	\$ 3000
MUZZARELLA	\$ 1700
3 MUZZARELLAS	\$ 4900
SUPER MUZZARELLA	\$ 2000

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TALCAHUANO 432 - Tel.: 481-0333
BOLIVAR 2350 - Tel.: 491-3633
PEÑA 3984 - Tel.: 475-7894 - 475-5065
ENVIOS A DOMICILIO \$ 2,00

ENE. 2007

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 375
DOCENA de EMPANADAS	\$ 3800
MUZZARELLA	\$ 2400
3 MUZZARELLAS	\$ 6800
SUPER MUZZARELLA	\$ 2700

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TALCAHUANO 432 - Tel.: 481-0333
BOLIVAR 2350 - Tel.: 491-3633
PEÑA 3984 - Tel.: 475-7894 - 475-5065
ENVIOS A DOMICILIO \$ 3,00

ENE. 2010

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 400
DOCENA de EMPANADAS	\$ 4200
MUZZARELLA	\$ 2500
3 MUZZARELLAS	\$ 7100
SUPER MUZZARELLA	\$ 3000

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TALCAHUANO 432 - Tel.: 481-0333
BOLIVAR 2350 - Tel.: 491-3633
PEÑA 3984 - Tel.: 475-7894 - 475-5065
ENVIOS A DOMICILIO \$ 3,00

ENE. 2011

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 450
DOCENA de EMPANADAS	\$ 4500
MUZZARELLA	\$ 2600
3 MUZZARELLAS	\$ 7400
SUPER MUZZARELLA	\$ 3000

CORRIENTES 1874 - Tel.: 493-7282
TALCAHUANO 432 - Tel.: 481-0333
BOLIVAR 2350 - Tel.: 491-3633
PEÑA 3984 - Tel.: 475-7894 - 475-5065
ENVIOS A DOMICILIO \$ 3,00

ENE. 2012

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 500
DOCENA de EMPANADAS	\$ 5000
MUZZARELLA	\$ 2700
3 MUZZARELLAS	\$ 7700
SUPER MUZZARELLA	\$ 3200

CORRIENTES 1874 - Tel.: 493-7282
TALCAHUANO 432 - Tel.: 481-0333
BOLIVAR 2350 - Tel.: 491-3633
PEÑA 3984 - Tel.: 475-7894 - 475-5065
ENVIOS A DOMICILIO \$ 3,00

ENE. 2013

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 600
DOCENA de EMPANADAS	\$ 6500
MUZZARELLA	\$ 3200
3 MUZZARELLAS	\$ 9000
SUPER MUZZARELLA	\$ 3700

CORRIENTES 1874 - Tel.: 493-7282
TALCAHUANO 432 - Tel.: 481-0333
BOLIVAR 2350 - Tel.: 491-3633
PEÑA 3984 - Tel.: 475-7894 - 475-5065
ENVIOS A DOMICILIO \$ 5,00

OCT. 2013

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 600
DOCENA de EMPANADAS	\$ 6500
MUZZARELLA	\$ 3500
3 MUZZARELLAS	\$ 1000
SUPER MUZZARELLA	\$ 4000

CORRIENTES 1874 - Tel.: 493-7282
BOLIVAR 2350 - Tel.: 491-3633
TALCAHUANO 432 - Tel.: 481-0333
R. PEÑA 3984 - Tel.: 475-7894
ENVIOS A DOMICILIO \$ 5,00

DIC. 2013

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 750
DOCENA de EMPANADAS	\$ 8000
MUZZARELLA	\$ 4500
3 MUZZARELLAS	\$ 1250
SUPER MUZZARELLA	\$ 5000

PEÑA 3984 - 475-7894 - 475-5065
TALCAHUANO 432 - 481-0333
ENVIOS A DOMICILIO \$ 5,00

ENE. 2014

FIRULLY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS	\$ 800
DOCENA de EMPANADAS	\$ 8500
MUZZARELLA	\$ 4500
3 MUZZARELLAS	\$ 1250
SUPER MUZZARELLA	\$ 5000

RODRIGUEZ PEÑA 3984
Tel.: 475-7894 / 475-5065
facebook: Pizzeria Firullyay
ENVIOS A DOMICILIO \$ 5,00

FEB. 2014

FIRULLAY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS \$ 8.50
DOCENA de EMPANADAS \$ 90.00
MUZZARELLA \$ 47.00
HAMBURGUESA COMPLETA \$ 35.00
SANDWICH DE MILANESA COMPLETA \$ 40.00

RODRIGUEZ PEÑA 3984
Tel.: 475-7894 / 475-5065
facebook: Pizzeria Firullay
ENVIO A DOMICILIO \$ 5

MAR. 2013

FIRULLAY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS \$ 9.50
MUZZARELLA \$ 50.00
PORCION de PAPAS FRITAS \$ 35.00
HAMBURGUESA COMPLETA \$ 40.00
SANDWICH DE MILANESA COMPLETA \$ 45.00

RODRIGUEZ PEÑA 3984
Tel.: 475-7894 / 475-5065
facebook: Pizzeria Firullay
ENVIO A DOMICILIO \$ 5

OCT. 2015

FIRULLAY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS \$ 10
MUZZARELLA \$ 55.00
PORCION de PAPAS FRITAS \$ 35.00
HAMBURGUESA COMPLETA \$ 45.00
SANDWICH DE MILANESA COMPLETA \$ 50.00

RODRIGUEZ PEÑA 3984
Tel.: 475-7894 / 475-5065
facebook: Pizzeria Firullay
ENVIO A DOMICILIO \$ 5

NOV. 2015

FIRULLAY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS \$ 11
MUZZARELLA \$ 55.00
PORCION de PAPAS FRITAS \$ 35.00
HAMBURGUESA COMPLETA \$ 45.00
SANDWICH DE MILANESA COMPLETA \$ 50.00

RODRIGUEZ PEÑA 3984
Tel.: 475-7894 / 475-5065
facebook: Pizzeria Firullay
ENVIO A DOMICILIO \$ 8

ENE. 2016

FIRULLAY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS \$ 12
MUZZARELLA \$ 65.00
PORCION de PAPAS FRITAS \$ 40.00
HAMBURGUESA COMPLETA \$ 50.00
SANDWICH DE MILANESA COMPLETA \$ 60.00

RODRIGUEZ PEÑA 3984
Tel.: 475-7894 / 475-5065
facebook: Pizzeria Firullay
ENVIO A DOMICILIO \$ 10

FEB. 2016

FIRULLAY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS \$ 13
MUZZARELLA \$ 65.00
PORCION de PAPAS FRITAS \$ 40.00
HAMBURGUESA J-Q-T-H COMPLETA \$ 50.00
J-Q-T-H SANDWICH DE MILANESA COMPLETA \$ 60.00

RODRIGUEZ PEÑA 3984
Tel.: 475-7894 / 475-5065
facebook: Pizzeria Firullay
ENVIO A DOMICILIO \$ 10

FEB. 2016

FIRULLAY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS \$ 14
MUZZARELLA \$ 70.00
PORCION de PAPAS FRITAS \$ 45.00
HAMBURGUESA J-Q-T-H COMPLETA \$ 55.00
J-Q-T-H SANDWICH DE MILANESA COMPLETA \$ 65.00

RODRIGUEZ PEÑA 3984
Tel.: 475-7894 / 475-5065
facebook: Pizzeria Firullay
ENVIO A DOMICILIO \$ 10

ENE. 2017

FIRULLAY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS \$ 15
MUZZARELLA \$ 75.00
PORCION de PAPAS FRITAS \$ 45.00
HAMBURGUESA J-Q-T-H COMPLETA \$ 55.00
J-Q-T-H SANDWICH DE MILANESA COMPLETA \$ 65.00

RODRIGUEZ PEÑA 3984
Tel.: 475-7894 / 475-5065
facebook: Pizzeria Firullay
ENVIO A DOMICILIO \$ 10

OCT. 2017

FIRULLAY
Pizza
EL MEJOR AMIGO DEL HOMBRE

EMPANADAS \$ 36
MUZZARELLA \$ 210.00
DOCENA de EMPANADAS \$ 390.00
HAMBURGUESA J-Q-T-H COMPLETA \$ 170.00
J-Q-T-H SANDWICH DE MILANESA COMPLETA \$ 200

RODRIGUEZ PEÑA 3984
Tel.: 475-7894 / 475-5065
223 3124205
facebook: Pizzeria Firullay
ENVIO A DOMICILIO \$ 35

DIC. 2019