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After the currency crisis that began in the autumn and the long winter of 2018, little remains standing of the model of gradual redress of macroeconomic imbalances. Instead, a tough fiscal and monetary adjustment schedule, supported by IMF financing, tries to organize variables and cause its main symptom, inflation, to subside.

But, why is it important that this happens as soon as possible? The implemented schedule could face two certain limitations if inflation does not ease quickly. According to this model, the contractionary movement in both the fiscal and monetary lever leads to a shrinkage of the level of activity, with the consequent expected decline in prices (and in the equilibrium of the external sector due to a fall in imports).

However, if the inflation adjustment is delayed, the intensity and persistence of the adjustment to the level of economic activity could badly affect its political and social sustainability.

Further, to maintain zero growth in the monetary base, the Central Bank must offer a positive interest rate level, which implies nominal interest rates above the rate of inflation. While inflation does not fall rapidly, the amount of currency issued to meet interest payments on the Central Bank interest-bearing liabilities should be sterilized with new debt and, if those liabilities continue to grow in excess of the adjustment rate of the non-intervention trading band for the Argentine peso (that is, if the rate of inflation is persistently higher than the monthly exchange adjustment rate), it will pave the way for a further rise in the value of the dollar, with a potentially abrupt adjustment to the exchange rate, as occurred in the past, but in this case it could have implications beyond the foreign exchange market.

Although it’s true that there are idiosyncratic, inertial and relative price adjustment factors that could delay the fall in inflation, it is also true that the breadth of the non-intervention trading band and the current exchange rate level offer the possibility of a long enough time horizon for the convergence to take place and the degree of uncertainty is not such that it could result in a carry trade, with the consequent currency appreciation beyond sustainable levels. It is worth noting that as long as the nominal exchange rate increases, the band margin percentage will diminish, compared to its central trend.

In brief, the model is the key to achieving convergence in inflation performance at a compatible rate; first, with the exchange adjustment schedule established and, second, with a level of economic activity that is politically and socially sustainable. This will be defined in the coming months.

José María Segura
Chief Economist PwC Argentina
**Tracking**
The start of a new monetary policy

Argentina has a new monetary policy since October 1. The new authorities of the Central Bank of Argentina (BCRA) have introduced significant changes to the monetary policy to stabilize the exchange market and curb inflation.

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By 2030, trucking and logistics will be an ecosystem of autonomous vehicles directed by a digitized supply chain, combining driverless, wireless trucks and delivery hubs staffed by robots.

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**Global Coordinates**
Argentina, a Country with a Future?

In spite of the current administration’s attempts to raise optimism and hope, it seems we live in a climate of disappointment and failure. Now, why can we not take advantage of the potential we do have?
Argentina has a new monetary policy since October 1. The new authorities of the Central Bank of Argentina (BCRA) have introduced significant changes to the monetary policy to stabilize the exchange market and curb inflation.

Argentina started the year 2018 with an Inflation Targeting monetary policy, by which the monetary authority set an inflation target and used the interest rate as the main instrument to accomplish that target. Many parts of the world use this method, but it did not produce the expected results in our country.

After the currency crisis unleashed between April and May, (in the fifth months of the year the peso was devalued by 17% on average, compared with the previous month), and in view of the impossibility to resolve that crisis, the governor of the Central Bank handed in his resignation, and the inflation targeting framework came to an end. His successor, Luis Caputo, followed an aimless long-term monetary policy, in an effort to handle the exchange rate fluctuations and reduce the stocks of LEBAC, which when he took office in June exceeded one trillion pesos and accrued interest for approximately USD 1.2 billion per month, so as to stabilize the exchange market.

Towards the end of September, after the devaluation of the peso by 40% on average in two months and on the day before a new agreement was reached with the IMF, Luis Caputo resigned as governor of the BCRA and the new governor, Guido Sandleris, took office. Under the new scenario, the Central Bank adopted effective October 1 a new monetary policy framework, with control of monetary aggregates, and an exchange rate regime within crawling bands. The monetary authority has committed to not increase the monetary base, which comprises the amount of pesos in circulation and current account deposits in pesos at the BCRA, until June 2019. The monetary authority has also defined an intervention and a non-intervention zone for the nominal exchange rate, allowing the currency to float within a range of 34 to 44 pesos per US dollar (the non-intervention zone), with daily adjustments at a monthly rate of 3% until the year-end. In addition, it was established that no financial assistance would be granted to the Treasury for the rest of the year and 2019, a source of money that not so long ago had been very significant.

Within this framework, the monetary authority will control the liquidity levels of the economy through Liquidity Bills (LELIQ1), by internally determining the value of the interest rate that strikes a balance between money supply and demand. In other words, the monetary policy now exerts a stricter control of the amount of money in the economy, at the cost of facing in the short term an interest rate that has stood at approximately 72% per annum. Commercial banks may use these short-term bonds to meet reserve requirements.

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1 7-day Liquidity Bills of the Central Bank in pesos, exclusively for banks
Exchange rate arrangements

Exchange rate arrangement with no separate legal tender: The currency of another country circulates as the sole legal tender. Adopting such an arrangement implies the complete surrender by the monetary authorities of control over domestic monetary policy.

Currency board: A monetary arrangement based on an explicit legislative commitment to exchange domestic currency for a specified foreign currency at a fixed exchange rate, combined with restrictions on the issuing authority to ensure the fulfillment of its legal obligation.

Conventional peg: The country formally (de jure) pegs its currency at a fixed rate to another currency or basket of currencies. The country authorities stand ready to maintain the fixed parity through direct intervention (that is, via sale or purchase of foreign exchange in the market) or indirect intervention (for example, via exchange rate related use of interest rate policy, imposition of foreign exchange regulations, exercise of moral suasion that constrains foreign exchange activity, or intervention by other public institutions).

Stabilized arrangement: Classification as a stabilized arrangement entails a spot market exchange rate that remains within a margin of 2 percent for six months or more (with the exception of a specified number of outliers or step adjustments) and is not floating. Classification as a stabilized arrangement requires that the statistical criteria are met and that the exchange rate remains stable as a result of official action (including structural market rigidities). The classification does not imply a policy commitment on the part of the country authorities.

Floating: A floating exchange rate can be classified as free floating if intervention (for example, via exchange rate market intervention may be either direct or indirect, and such intervention serves to moderate the rate of exchange and prevent undue fluctuations in the exchange rate, but policies targeting a specific level of the exchange rate are incompatible with floating.

Free floating: A floating exchange rate can be classified as free floating if intervention occurs only exceptionally and aims to address disorderly market conditions and if the authorities have provided information or data confirming that intervention has been limited to at most three instances in the previous six months, each lasting no more than three business days.

Monetary policy framework

Exchange rate anchor: The monetary authority buys or sells foreign exchange to maintain the exchange rate at its predetermined level or within a range. The exchange rate thus serves as the nominal anchor or intermediate target of monetary policy.

Monetary aggregate target: The intermediate target of monetary policy is a monetary aggregate such as M0, M1, or M2, although the country may also set targets for inflation. The central bank may use a quantity variable (central bank reserves or base money) or price variable (policy rate) as operational target.

Inflation-targeting framework: This involves the public announcement of numerical targets for inflation, with an institutional commitment by the monetary authority to achieve these targets, typically over a medium-term horizon.

Other monetary frameworks: The country has no explicitly stated nominal anchor, but rather monitors various indicators in conducting monetary policy.
The possibility for financial institutions to meet minimum cash requirements with LELIQs allows them to have interest-bearing reserves, which has somehow extended to the interest rates received by savers (Graphic 4). This reduces the demand for dollars and the exchange rate volatility in the short term.

By application of the new monetary policy, the nominal exchange rate stopped increasing, showing during the first two weeks of the month an appreciation of 11.4% (October 12 as against September 28). Likewise, country risk stabilized below 700 points, without increasing any further.

However, the balance in the levels of these variables is having an impact on economic activity, since the high interest rates restrict access to credit by companies, especially small and medium-sized enterprises, which are most affected for not having other short-term financing alternatives. This situation increases the risk of delays in the payment chains.
An indicator of the above is the percentage of rejected checks out of the total cleared checks3, which in the first 9 months of the year reached 5%, and the percentage of unpaid checks was 1.8%. As shown by Graphic 5, these are the maximum levels for the series in the period under consideration, and the critical moments were April, June and September, coinciding with the worst moments of the currency crisis.

Bank overdraft facilities are another means of financing of working capital for companies, and their cost has increased as a result of the higher benchmark rate (Graphic 6).

With the implementation of the new monetary policy, the Central Bank stopped the run on the currency in the short term to the financial market’s relief and showed its commitment to fulfill its goal to not allow monetary aggregates to grow, which shrank 0.9%, while M1 and M2 decreased 10.9% and 6.2%, respectively.

At the same time, the reduction of the stocks of LEBACs continue, and will reach zero by the end of the year. LELIQs, which will replace LEBACs, must be monitored to avoid situations of stress, as has occurred with LEBACs. By mid-October, the stocks of LELIQ exceeded $450 billion, which meant an interest accrual (at the current rate levels) of almost $27 billion per month.

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3 A cleared check is a check that has been verified by the drawer’s bank and its payment has been approved. Checks are rejected when after having been transferred to the clearing system (that is, the check has no observations), there are not sufficient funds in the drawer’s account to transfer to the payee’s bank.
To ensure stability of the peso, in the short term, the challenge is to reduce gradually the amount of pesos in circulation in the economy, to be able to properly adjust relative prices and give the necessary signals to avoid devaluation/deficit/crisis.

*Source: Prepared by the authors based on information from BCRA*
Industry Roadmap

Automation and digitalization of trucking: prospects of a new business model.

By 2030, trucking and logistics will be an ecosystem of autonomous vehicles directed by a digitized supply chain, combining driverless, wireless trucks and delivery hubs staffed by robots.

As a consequence of the technological advances, in a few years, the trucking industry will be an autonomous and digital ecosystem, with a fully automated model that will bring about changes in the current business models.

But what about the efficiency and the costs behind these changes? The study conducted by PwC Strategy&¹, which includes statistics with a focus on the European Union but shows trends that will likely be reflected at a global level, presents the following findings:

- Trucking logistics costs will fall by 47% by 2030, largely through reduction of labor.
- Delivery lead times will fall by 40%.
- Trucks will be in use on the road for 78% of the time, rather than the current industry average in Europe of 29%.

The process of matching the delivery of goods and the available trucks will be fully automated.

To stay competitive, original equipment manufacturers (OEM) need to expand their product portfolios to include new engines and focus production on autonomous long-haul trucks.

Large tech companies will become the major feature in the delivery market, with new technologies.

In this way, stakeholders, truck makers, long-distance freight transportation truck companies and suppliers, among others, will face a context of big transformations, where changes in trucking and logistics generated by technology will affect their future behavior.

In addition, the future logistics model will generate savings. Manufacturers will have to expand their product range to include new engines, such as the electric and the hybrid, which will reduce fuel costs significantly for trucking companies. Moreover, companies should focus production on autonomous long-haul trucks, thus reducing the labor cost as it will eliminate the need for a driver, but also the production cost of the vehicle, given that the cab is one of the most expensive parts of a truck.

Lastly, the third effect resulting from the technological advances will be an extension of the amount of time in a vehicle’s daily life that it is actually in use (the so-called utilization rate), which will translate into a productivity increase of long-haul trucks on the road.

The imminent changes that will come hand in hand with the disruptive technological advances threaten not only the business model of the truck manufacturers themselves, but also their customers’ and the leasing and logistics companies’. The entire ecosystem as we know it today is at risk (Table 1). Yet, it is essential that the industry acknowledges and works to keep pace with the incremental disruptive changes in technology and automation over the coming years — a transformation that will create a new and more cost-efficient supply chain by 2030.

### Table 1:

<table>
<thead>
<tr>
<th>New technologies will create a more cost-efficient logistics supply chain by 2030</th>
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<tbody>
<tr>
<td><strong>Current technology</strong></td>
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<tr>
<td>Virtual platforms</td>
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<td>Warehouse robots</td>
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<tr>
<td>Partially automated trucking</td>
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<tr>
<td>Electric vans</td>
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<tr>
<td>Logistics moility-as-a-service (MaaS) introduced</td>
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<td>Drone-automated inventory taking</td>
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<tr>
<td>Platooning begins</td>
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<tr>
<td>Significant share of electric vans</td>
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<tr>
<td>Nearly all hub-to-hub logistics done by MaaS</td>
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<tr>
<td>Processes (except commissioning) automated</td>
</tr>
<tr>
<td>Partially autonomous trucks, requiring driver</td>
</tr>
<tr>
<td>Commercial delivery drones</td>
</tr>
<tr>
<td>All hub-to-hub logistics drone by MaaS</td>
</tr>
<tr>
<td>Processes for standard delivery 100% automated</td>
</tr>
<tr>
<td>Fully autonomous trucks without driver</td>
</tr>
<tr>
<td>Synchronized, heterogenous delivery fleet</td>
</tr>
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</table>
The Effect of a Devaluation in the Balance of Trade

Devaluations improve the balance of trade of countries, as is usually argued, although, in general, the reply to whether this result is sustainable over time is not so clear. Recent Argentine history can provide elements to understand whether a devaluation can have lasting effects in the balance of trade or not.

Generally, devaluation of the exchange rate is a medium to correct the deficit in the balance of trade of a country’s current account. This mechanism operates by increasing the internal price (in pesos) of imports and reducing the average external price (in US dollars) of exports, discouraging pesos and promoting dollars, thus improving the net result. Some theories have it that improving the balance of trade is a combination of a sufficiently great price elasticity of demand1 and a low price elasticity of supply. There is a significantly reduced amount of products and services purchased abroad, when their price increases and the amount of products and services sold abroad is only reduced somewhat when their price slightly declines.

However, the result of devaluation is often empirically ambiguous, depending on the country and period considered. Even when meeting conditions and improvement finally occurs, at first the balance of trade could be affected before it subsequently improves: with both a short-term and a long-term effect. The “J curve” effect, as indicated by its name, the course of the curve supposes that, after a devaluation, the deficit in the balance of trade will deepen in the short-term, due to the increase in the cost of imports; a situation that will subsequently reverse, with exports driving a positive result.

This mechanism starts with an initially worsening trade balance due to a rise in internal prices of imports, on one side, while the amounts tend to react late due to the technological characteristics of the production process. On the other side, the fact that the amounts exported are rigid at first, their prices in local currency do increase.

Therefore, the implications of a devaluation of the real exchange rate might be different in the short and long run.

For the case of Argentina, currently facing a deficit in the balance of trade and recently suffering a significant devaluation of its currency, it is relevant to assess the relationship in the short- and long-term existing between both variables.

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1 A measure of the sensitivity or responsiveness of the demand for a product in the event of price change.
From theory to practice

The objective of this work is to assess, empirically, through an econometric model, the impact of a devaluation of the real exchange rate on Argentine foreign trade. For this purpose, the balance of trade is set as a model based on the real exchange rate, local GDP and GDP of the rest of the world. For determining the existence or not of a relationship between the real exchange rate and the trade balance, we used quarterly information from January 1997 to June 2018 from the BCRA, INDEC and the US Federal Reserve Bank of St. Louis.

The series selected for the analysis of this model were: the ratio of the value of exports (X) and imports (M), whose effect is assessed in view of the variation of the real exchange rate; the Argentine GDP\(^2\) (a variable that indicates internal demand, whose a priori effect is ambiguous, as its rise increases imports due to the need for inputs, but it may also generate a substitution effect by reducing them), US GDP is the proxy chosen to indicate the effect on net exports of an increase in demand abroad, and the real multilateral exchange rate (REER), elasticity would be obtained for the dependent variable (X/M) in the event of variations in the Argentine GDP, US GDP and real exchange rate, with evaluation done on a logarithmic basis\(^3\).

The reduced form of the equation\(^4\) of the proposed model is as follows:

\[
\ln \left( \frac{X}{M} \right)_t = \alpha_1 + \alpha_2 \ln (REER) + \alpha_3 \ln (GDP_{ARG}) + \alpha_4 \ln (GDP_{US}) + \epsilon_t
\]

The impact of variations in the real exchange rate on the balance of trade may be ambiguous: this means that the coefficient \(\alpha_2\) may be both positive and negative. If a devaluation or depreciation of the national currency occurs, then the real exchange rate increases, and the rise in the competitiveness in prices for the country should result in higher exports and fewer imports (“volume effect”). However, the higher the real exchange rate, the higher the value of each import unit (“value effect of import”), which would tend to decrease the balance of trade.

To prove this relation, an estimate was made\(^5\) resulting in the following equation whose estimated parameters were statistically significant\(^6\):

\[
\ln \left( \frac{X}{M} \right)_t = 4.389 + 0.547 \ln (REER) - 1.274 \ln (GDP_{ARG}) + 1.144 \ln (GDP_{US})
\]

Results for the long-term show that the relation of the (X/M) ratio as to the REER shows little elasticity. Thus, a 1% variation in the REER, keeping constant the rest of the variables, generates a variation in the (X/M) ratio of 0.55% in the same direction. That is, the direct effect of a devaluation of the exchange rate in Argentina generates improvement in the balance of trade result.

As to elasticity of the (X/M) ratio in relation to the Argentine GDP, we noted that a variation of 1% in this variable reduces the (X/M) ratio for the period by 1.274%. In the case of the (X/M) ratio elasticity as to US GDP, we noted that a 1% variation in this variable, keeping constant the other variables, increases the (X/M) ratio by 1.14%.

From the analysis performed, we infer that the long-term effect of a variation in the domestic GDP is greater than the long-term effect of a variation in the real exchange rate. Therefore, the dynamics of the growth of internal demand tend to prevail over the result in balance of trade for Argentina.

\(^2\) We employed the variation of the real GDP basis 1993 to create the series for the years 1997 to 2003, at which time the series basis 2004 began, both provided by INDEC.

\(^3\) To estimate price elasticities of the ratio (X/M) as to REER and GDP of Argentina and US, we use the exponential model, where the powers are the elasticities estimated, and using logarithmic transformations.

\(^4\) Where the E, is the error term

\(^5\) At the time of preparing the econometric model through the classic least squares method, the assumptions of Gauss-Markov were analyzed to determine the efficiency of the estimators at issue. The condition of stationary variables was also proven and the co-integration of variables was tested through the Engle-Granger test.

\(^6\) At 5%.
Furthermore, an impulse-response test was made to assess the relation in the short-term of a change in the real exchange rate over the balance of trade (to verify or not the existence of the “J curve” effect).

In graphic 3, in the case of Argentina the “J curve” effect is not verified. That is, in the short-term, a devaluation tends to improve the balance of trade result (for two quarters); however, subsequently, this relation is rapidly reversed. This result is rather usual and observed in similar analyses for other countries.

In view of the results obtained, in the short-term there is a positive impulse-response effect contrary to the theory of “J curve”, one might infer that this could happen in the case of Argentina due to the production and export of a great deal of agriculture manufactured products with internationally given prices and import of most of the industrial inputs. The impact of the devaluation generates an immediate increase in costs that, due to the high pass-through that characterizes Argentina, is transferred to internal prices of the economy generating a decline in the REER and adversely influencing the (X/M) ratio, as seen from the second quarter in graphic 3.

The fact that the initial impulse of the REER later generates negative responses of the (X/M) ratio might have other explanations, where the reason why export volumes do not increase under a depreciation of the currency is the existence of global chain values that imply that the countries now need to import to produce exports and, often, export inputs which are re-exported by their commercial partners. For this reason, the consequences of a devaluation of the currency for the export volumes depend on the types of ascending and descending interconnections with other countries in the exporters’ production process. In other words, it depends on the source of all imported inputs (direct and indirect) and on the destination of the end consumption.

To conclude, although it is possible that under certain circumstances the improvement in the competitiveness of the price generated by a depreciation of the real exchange rate may improve the balance of trade in part. For this improvement to be lasting, an enhancement of the quality of products and processes and an opening of new markets, implying more competitive exports worldwide, irrespective of the local currency price are needed.

Source: Prepared by the authors
Note: the horizontal axis measures periods in quarters and the vertical axis variation in percentages.

7 Cholesky Impulse-response test
Global Coordinates

Argentina, a Country with a Future?

By Juan M. Procaccini

In spite of the current administration’s attempts to raise optimism and hope, it seems we live in a climate of disappointment and failure. Now, why can we not take advantage of the potential we do have?

Many Argentines continually think that our country has no solution, no future and, certain another crisis is looming. This view leads us to be extremely shortsighted in our actions without thinking in the medium to long-term, to project sustainable growth, investment and development.

Argentina is an extremely rich country. With considerable land (it ranks as the eighth largest territory in the world), with abundant fertile soil and potable water; it produces agriculture commodities to feed more than 400 million people. It has also a huge variety of energy resources, from being the second shale gas reservoir in the world to excellent solar and wind factors for the development of renewable energies. It has one of the most sought after minerals in the world – lithium- forming with Bolivia and Chile the “lithium triangle” which accounts for 80% of the world reserves, and has as well many other mineral resources with huge export potential. By simply observing that we share the Andes with Chile and this country exports nearly USD 35 billion per year compared to just USD 3 billion exported from Argentina, this huge potential is evident.

Besides the abundance in natural resources, our country has highly qualified human capital, with a remarkable and favorable position within Latin America. A young and well-trained population are fluent in English with entrepreneurial skills who are highly flexible, and ready to adapt to change.

So, why can’t we transform into a thriving, growing country with sustainable growth and economic well-being? The reason is that these wonderful resources and skills have to be developed in line with a significant and sustained investment that requires a long-term vision. What is key to attract this type of capital is to be both politically and economically reliable and predictable. We have a country that in the last sixty years spends more than it generates, an issue that must be resolved.

After having lived through an exchange and financial crisis, one of the strongest since 2001, a new process for surmounting the fiscal deficit is about to come. This could lead to a recession that would be felt until mid-2019. Yet again long-term investment would be postponed.

However, we have a unique opportunity ahead: to change this short-term vision; to respect our commitments to the IMF; and all parties, both politicians and unions, to agree on the 2019 budget. Think as entrepreneurs, although the situation is difficult, and as entrepreneurs increase investment and job creation. It is the only way to regain the world’s trust.

Becoming a developed Argentina with sustainable growth is possible if we can change our vision, with a strong direct foreign investment on average levels in the Latin America region (4% of GDP). If this goes undone, we will be no more than a developing country with potential.
**Activity and Prices**

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>jun-18</th>
<th>jul-18</th>
<th>aug-18</th>
<th>sep-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP, var % y/y</td>
<td>2.6%</td>
<td>-1.8%</td>
<td>2.9%</td>
<td>-4.2%</td>
<td>-</td>
<td>-</td>
<td>nd</td>
</tr>
<tr>
<td>CPI Federal Capital, var % y/y</td>
<td>26.9%</td>
<td>41.0%</td>
<td>26.1%</td>
<td>29.8%</td>
<td>31.0%</td>
<td>33.6%</td>
<td>39.5%</td>
</tr>
<tr>
<td>CPI San Luis, var % y/y</td>
<td>31.6%</td>
<td>31.4%</td>
<td>24.3%</td>
<td>30.2%</td>
<td>32.9%</td>
<td>35.5%</td>
<td>43.3%</td>
</tr>
<tr>
<td>Industrial Production, var % y/y</td>
<td>nd</td>
<td>-4.6%</td>
<td>1.8%</td>
<td>-8.1%</td>
<td>-5.7%</td>
<td>-5.6%</td>
<td>nd</td>
</tr>
<tr>
<td>International Reserves (end period, USD mn)</td>
<td>25,563</td>
<td>39,308</td>
<td>55,055</td>
<td>61,881</td>
<td>57,996</td>
<td>52,658</td>
<td>49,003</td>
</tr>
<tr>
<td>Implicit exchange rate (M0 / Reserves)</td>
<td>24.41</td>
<td>20.90</td>
<td>18.18</td>
<td>16.87</td>
<td>18.39</td>
<td>22.95</td>
<td>25.50</td>
</tr>
<tr>
<td>$/USD, end period</td>
<td>13.01</td>
<td>15.85</td>
<td>18.77</td>
<td>28.86</td>
<td>27.34</td>
<td>37.12</td>
<td>38.03</td>
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**External Sector**

<table>
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<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
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<th>jul-18</th>
<th>aug-18</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Exports, USD mn</td>
<td>56,784</td>
<td>57,879</td>
<td>58,427</td>
<td>5,099</td>
<td>5,385</td>
<td>5,179</td>
<td>5,013</td>
</tr>
<tr>
<td>Imports, USD mn</td>
<td>60,203</td>
<td>55,911</td>
<td>66,899</td>
<td>5,458</td>
<td>6,174</td>
<td>6,310</td>
<td>4,699</td>
</tr>
<tr>
<td>Comercial Balance, USD mn</td>
<td>-3,419</td>
<td>1,969</td>
<td>-8,472</td>
<td>-359</td>
<td>-789</td>
<td>-1,131</td>
<td>314</td>
</tr>
<tr>
<td>Currency liquidation by grain exporters, USD mn</td>
<td>19,953</td>
<td>23,910</td>
<td>21,399</td>
<td>3,225</td>
<td>2,701</td>
<td>1,605</td>
<td>1,311</td>
</tr>
</tbody>
</table>

**Labor***

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<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>jun-18</th>
<th>jul-18</th>
<th>aug-18</th>
<th>sep-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployment, country (%)</td>
<td>nd</td>
<td>7.6</td>
<td>7.2</td>
<td>9.6</td>
<td>-</td>
<td>-</td>
<td>nd</td>
</tr>
<tr>
<td>Unemployment, Greater Buenos Aires (%)</td>
<td>nd</td>
<td>8.5</td>
<td>8.4</td>
<td>11.4</td>
<td>-</td>
<td>-</td>
<td>nd</td>
</tr>
<tr>
<td>Activity rate(%)</td>
<td>nd</td>
<td>45.3</td>
<td>46.4</td>
<td>46.4</td>
<td>-</td>
<td>-</td>
<td>nd</td>
</tr>
</tbody>
</table>

**Fiscal**

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>jun-18</th>
<th>jul-18</th>
<th>aug-18</th>
<th>sep-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income, $mn</td>
<td>1,537,948</td>
<td>2,070,154</td>
<td>2,578,609</td>
<td>298,853</td>
<td>293,894</td>
<td>293,418</td>
<td>295,818</td>
</tr>
<tr>
<td>VAT, $mn</td>
<td>433,076</td>
<td>583,217</td>
<td>765,336</td>
<td>92,127</td>
<td>91,454</td>
<td>98,116</td>
<td>103,570</td>
</tr>
<tr>
<td>Income tax, $mn</td>
<td>381,463</td>
<td>432,907</td>
<td>555,023</td>
<td>90,350</td>
<td>59,703</td>
<td>68,701</td>
<td>59,398</td>
</tr>
<tr>
<td>Social Security System, $mn</td>
<td>401,045</td>
<td>536,180</td>
<td>704,177</td>
<td>69,789</td>
<td>89,033</td>
<td>69,916</td>
<td>70,650</td>
</tr>
<tr>
<td>Export Tax, $mn</td>
<td>34,822</td>
<td>55,305</td>
<td>69,259</td>
<td>8,243</td>
<td>9,767</td>
<td>10,787</td>
<td>10,249</td>
</tr>
<tr>
<td>Primary expenses, $mn</td>
<td>1,427,990</td>
<td>1,790,789</td>
<td>2,194,291</td>
<td>264,254</td>
<td>230,113</td>
<td>213,504</td>
<td>229,933</td>
</tr>
<tr>
<td>Primary result, $mn</td>
<td>-291,660</td>
<td>-343,526</td>
<td>-404,142</td>
<td>-56,664</td>
<td>-14,280</td>
<td>-10,356</td>
<td>-22,854</td>
</tr>
<tr>
<td>Interest, $mn**</td>
<td>120,840</td>
<td>185,253</td>
<td>308,048</td>
<td>45,382</td>
<td>60,547</td>
<td>6,504</td>
<td>53,535</td>
</tr>
<tr>
<td>Fiscal results, $mn</td>
<td>-282,180</td>
<td>-474,786</td>
<td>-569,050</td>
<td>-88,866</td>
<td>-62,380</td>
<td>-14,517</td>
<td>-55,858</td>
</tr>
</tbody>
</table>

**Financial - interest rates***

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>jun-18</th>
<th>jul-18</th>
<th>aug-18</th>
<th>sep-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Badlar - Privates (%)</td>
<td>27.54</td>
<td>20.04</td>
<td>23.18</td>
<td>30.44</td>
<td>34.39</td>
<td>35.15</td>
<td>41.75</td>
</tr>
<tr>
<td>Term deposits $ (30-59d Private banks) (%)</td>
<td>27.95</td>
<td>19.51</td>
<td>21.80</td>
<td>28.63</td>
<td>32.60</td>
<td>33.42</td>
<td>39.78</td>
</tr>
<tr>
<td>Mortgages (%)</td>
<td>22.85</td>
<td>19.70</td>
<td>18.61</td>
<td>22.92</td>
<td>30.17</td>
<td>33.95</td>
<td>36.91</td>
</tr>
<tr>
<td>Pledge (%)</td>
<td>26.03</td>
<td>20.82</td>
<td>17.42</td>
<td>21.76</td>
<td>23.62</td>
<td>21.32</td>
<td>24.84</td>
</tr>
<tr>
<td>Credit Cards (%)</td>
<td>39.97</td>
<td>44.45</td>
<td>42.21</td>
<td>44.71</td>
<td>47.22</td>
<td>47.31</td>
<td>49.93</td>
</tr>
</tbody>
</table>

**Commodities****

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>jun-18</th>
<th>jul-18</th>
<th>aug-18</th>
<th>sep-18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soy (USD/Tn)</td>
<td>347.3</td>
<td>362.6</td>
<td>358.9</td>
<td>340.0</td>
<td>312.6</td>
<td>316.7</td>
<td>306.4</td>
</tr>
<tr>
<td>Corn (USD/Tn)</td>
<td>148.3</td>
<td>141.1</td>
<td>141.4</td>
<td>143.6</td>
<td>137.5</td>
<td>141.1</td>
<td>138.7</td>
</tr>
<tr>
<td>Wheat (USD/Tn)</td>
<td>186.4</td>
<td>160.3</td>
<td>160.2</td>
<td>184.0</td>
<td>186.4</td>
<td>197.8</td>
<td>185.1</td>
</tr>
<tr>
<td>Oil (USD/Barrel)</td>
<td>48.8</td>
<td>43.3</td>
<td>50.9</td>
<td>67.3</td>
<td>70.6</td>
<td>67.8</td>
<td>70.1</td>
</tr>
</tbody>
</table>

* Quarterly figure. The year corresponds to Q4
** includes instractor public interest
*** data 2012/13/14 corresponds to the daily weighted average of December
**** One moth Future contracts, period average
p: provisional

Source: INDEC, Secretary of Finance, Ministry of Economy, BCRA, AFIP, Unión por Todos, CIARA, CBOT, NYMEX.
## Our services

### Macroeconomic analysis
- Monthly/quarterly report
- Conferences
- Projections and data

### Sectorial/Quantitative
- Follow up and projection by sector
- Quantification of demand
- Applied econometrics
- Revenue forecast
- Surveys

### Litigation
- Support of experts' reports relating to economic matters
- Dumping
- Antitrust

### Regulatory
- Tax benefits
- Benefit/price structure
- Quantification of impacts

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