

VACA MUERTA AND ARGENTINE DEVELOPMENT

assessment of fracking and future outlook



Enlace por la
Justicia Energética
y Socioambiental



Enlace por la Justicia Energética y Socioambiental (EJES) [Socio-environmental and Energy Justice Alliance] is the collaboration of Argentine organizations Observatorio Petrolero Sur (Buenos Aires, Neuquén, and Río Negro provinces) and Taller Ecologista (Santa Fe province). Through an interdisciplinary and federal approach, our work currently focuses on the megaproject Vaca Muerta. We take into account the policies involved, and the territories and population affected in the long term. The strategic focus is on the economic, financial, e1^o2energy and socio-environmental aspects. Our objective is to expose the overlooked impacts and find a fair path to energy and economic transition

More information:
ejes.org.ar

Author: Gustavo García Zanotti

Editing: Marco Kofman y Mariana Fernández Massi

Traslation: Eugenia Monedero y Nancy Viviana Piñeiro

Design: Corpus Comunicación y Diseño Audiovisual (www.corpus.net.ar)

1. Non conventional hidrocarbons, 2. Vaca Muerta, 3. Public policies, 4. Financialization, 5. Capital flight

Rosario, Argentina. May 2019.

CC-BY-SA – Attribution-ShareAlike Details of the license can be found on the following website:
<http://creativecommons.org/licenses/by-sa/4.0/legalcode>

VACA MUERTA AND ARGENTINE DEVELOPMENT

assessment of fracking and future outlook

Gustavo García Zanotti¹
Socio-Environmental
and Energy Justice Alliance
(EJES)

Introduction

Discussing energy financing and its sustainability is essential for the economic development of Argentina. In the past few years, the extraction of energy resources from unconventional hydrocarbons has been at the heart of the debate. The US fracking boom in the last decade has been repeatedly underscored as the closest precedent (Rogers, 2013.) Looking at this experience, the Institute for Energy Economics and Financial Analysis highlighted the need for funding of 29 oil companies specialized in unconventional hydrocarbons: “Since its inception, the fracking sector has consistently failed to produce enough cash to satisfy its voracious appetite for capital. **From 2010 through 2018, the companies in our sample had an aggregate negative cash flow of \$181 billion.** Because of their negative cash flows, **many oil and gas companies have turned to debt and equity for capital infusions to keep their businesses afloat**” (emphasis added, Williams-Derry et al., 2018, p. 2.) This warns us against the ongoing need for funding of such productive projects and, therefore, against potential exposure to company over-indebtedness.

We would like to go deeper into the discussion over “financing for development,” a paramount issue for developing countries (see UNCTAD, 2012; ECLAC, 2018.) Those countries need large sums of money to enable a structural change in their production matrices. Their disjointed production structures bring about the need to import goods that are not produced locally. In a context of foreign currency shortage, these countries’ growth is impaired, which causes a negative impact on employment, wages, productivity, income distribution, and poverty. Having abundant, cheap energy thus becomes essential to enable development.

Foreign Direct Investment (FDI) is one of the available sources of financing for development. Most governments believe that the entry of foreign capital is a certificate of good standing for economies. In this regard, there is a tendency towards idealizing the effects of foreign investment on employment, tax revenues and economic growth. Capital behavior in the 21st century, however, is far from displaying unarguably positive features as its advocates claim. The reach of the so-called “trickle-down effect” on the entire population of a territory is usually very limited in any country, let alone in peripheral ones (Konings, 2001; Agénor and Montiel, 2015; Prasad et al., 2007; Carkovic and Levine, 2005.) In the oil sector, governments may spread this “trickle-down effect” even further through tax policies, which is how they –at all levels– manage to secure revenues. Their ability to do so is powered by their involvement in the sector through state-owned oil companies (UNCTAD, 2014a; Gómez Sabaini et al., 2017.) Capital’s free mobility ends up reversing the original flow of investments. Transfers from the periphery to the center have a twofold cause: First, capital flight. By “flight” we mean the outflow of foreign currency without a justifiable purpose based on production. These capital outflows worsen the foreign currency shortage, which fuels the need to resort to external financing.

Second, in today’s capitalism, the entry of foreign investment usually takes the form of loans coming from abroad. Such loans are exchanged between companies that belong to the same economic group or holding (in this case, the lender and the borrower share the same parent company) – i.e., they are

¹ PhD in Economic Development (Universidad de Quilmes,) Degree in Economics (Universidad de Rosario,) Postdoctoral Researcher (scholarship granted by the Argentine Council of Scientific and Technical Research, CONICET.)

intercompany loans. These loans have a series of negative effects on development. First, an investment becomes a debt and, as such, its amortization needs to be paid upon maturity. Second, the interest rates charged for the loans granted to developing countries are usually high because of the default risk involved. By using these interest rates, indebted companies reduce their profits and erode the foundation of their tax payments in peripheral countries, which increases the financial gains of the same economic group abroad. Finally, faced with a pressing need for company indebtedness, the international financial system acquires a decisive economic power. This is the system that will dictate the purpose and conditions of financing, the necessary profitability of productive projects, and the way in which capital flows in and out.

External debt cycles jeopardize the balance of foreign currency whenever the purpose of the loans makes it impossible to generate new foreign currency inflows (UNCTAD, 2015.) Pressure over the currency exchange systems of peripheral countries is explained by several reasons. First, interest-based foreign currency outflows are coupled with the repatriation of the principal upon maturity,. Second, if there is an over-indebtedness crisis, the risk of socializing the liabilities by way of state bailouts arises. Third, external debt may become explosive upon devaluation. When devaluation strikes, higher inflows of local currency are needed to repay debts expressed in foreign currency. A fourth element that aggravates the vulnerability of the economies that receive these investments is the settling of disputes over such debt. International forums like the ICSID (International Centre for Settlement of Investment Disputes) and the International Chamber of Commerce are biased towards private interests to the detriment of the sovereignty of developing countries (UNCTAD, 2014b.)

The productive development of Vaca Muerta raised expectations about it becoming a locomotive for growth based on hydrocarbons. These debates arise amidst the last globalization wave, through the popularization of Global Value Chains (GVCs) (Gereffi, 2014; Gereffi and Fernandez-Stark, 2011.) International agencies perceive GVCs as a path towards the development of countries that are not yet at that stage. According to this view, peripheral countries may be able to embrace globalization and enter the production segment deemed most convenient for them (Fernández, 2015; Werner et al., 2014.) The first step towards a big leap in that direction would be to specialize in those business branches in which the peripheral country features a fairly high relative factor endowment, whether it is related to natural resources or else based on the availability of cheap labor (see Marín, 2016; Pérez et al., 2014.) Going upwards in the value chain would happen gradually by adding greater technological capacity to the productive path chosen. Thus, developing countries would move up to increasingly complex activities with a higher added value. In this regard, it is perceived that economic development is available for any country willing to open its borders and lure capital in, with globalization being a synonym with growth and higher employment rates. This is how the last globalization wave was legitimized, and new forms of organizing production arose which meant dismantling domestic productive structures (see Arend, 2015; Tregenna, 2015.)

It follows that the creation and consolidation of tax havens became an essential mechanism to build GVCs. Low-taxation countries organize and centralize business and financial movements (UNCTAD, 2014b.) Tax havens are at the core of capital globalization and financialization. Control over subsidiaries and creditor-debtor relationships is centralized in those structures, and a large portion of corporate gains earned in developing countries end up being absorbed by those same companies in low-taxation countries, thus eroding the taxpaying capacity of these units in the countries where they produce.

In light of all this, **the purpose of this report** is to list the problems and challenges posed by the Vaca Muerta productive project in the Argentine economic development by looking at the performance of the companies with the largest investments in that formation so far: YPF and Tecpetrol. The State holds 51% of YPF's capital stock, while Tecpetrol includes foreign capital (Italian and Argentine.)

1. The Sector in Context

Unconventional hydrocarbon exploitation in Argentina has two clear precedents: A national one, which was the result of a deterioration in the balance of trade caused by an increase in energy imports, and an international one, associated with the development of fracking (mainly in the United States.) Thus, Vaca Muerta, as an unconventional formation, was portrayed in the public debate as a possible solution to the country's energetic and economic problems. This unconventional hydrocarbon formation covers the southern provinces of Neuquén, Río Negro, (southern) La Pampa, and part of Mendoza. According to the U. S. Energy Information Administration (2013), the formation makes Argentina the second economy with the largest shale gas reserves (following China) and the fourth in shale oil reserves in the world (after Russia, the United States, and China.)

In 2011, Argentina started suffering from a deficit in its energy balance of trade (Barrera et al. 2015.) The lack of investment in the sector worsened as the years went by. By then, the accumulation strategy implemented by the largest oil company in the country, YPF-Repsol, –a strategy associated with capital flight and minor productive investment– became an obstacle for the Kirchner administration, which sought “growth with social inclusion” (see Cantamutto, 2016, Pérez Roig, 2016.) The oil sector did not support the country's general growth with productive investments. The result of these low investment levels was an increase in hydrocarbon imports. To address this situation, YPF was partially nationalized, and an agreement was signed between YPF and Chevron.

After the nationalization of YPF in 2012, investments in Vaca Muerta exponentially increased. In fact, the State-owned company partnered with private investors that would contribute the technology and financing necessary to secure productive growth. As part of those efforts, the first massive investment project was conducted in 2014-2015, including the YPF-Chevron agreement for the Loma Campana area. Later on, the deployment of investments in Vaca Muerta was supplemented with the development of the Fortín de Piedra area during 2017-2018 by Tecpetrol (part of the Techint group.) Thus, despite the change of direction introduced by the neo-conservative administration of the Cambiemos party, investments in Vaca Muerta never stopped.

The financing secured to develop these investments was significant. While the YPF-Chevron agreement started in 2014 with a disbursement of USD 3.27 billion in 2014-2015, representing 4% of oil production in 2015, Tecpetrol's investments reached USD 1.115 billion in 2017-2018, accounting for 6% of Argentina's aggregate gas production (based on the data published by the Office of the Secretary of Energy and Mining, which reports to the Argentine Presidency.) These investments involved energy projects that featured some differences. On the one hand, the Kirchner administration supported self-sufficiency through the state-owned company and perceived Vaca Muerta as a strategic asset. The Cambiemos administration, on the other hand, intended to displace YPF in order to transform hydrocarbon resources into a commodity.

As far as state subsidies are concerned, in 2013, the Stimulus Program to Surplus Natural Gas Injection (Resolution No. 1/2013 of the Commission for Strategic Coordination and Planning of the National Hydrocarbon Investment Plan) was implemented to keep the price paid to production companies in Vaca Muerta at a high level -- increasing production was paid USD 7.5 MMBTU.² This program was particularly favorable to the investments made under the YPF-Chevron agreement. In this regard, “YPF believes the new measures [taken by the national government] have helped lure strategic partners for the development of its unconventional resource base, like Chevron [...]” (YPF, p. 127.) This couples with the Investment Promotion Regulations for Hydrocarbon Exploitation (Decree No. 929/2013.) The companies that benefited under this Decree were authorized to export their production with 0% withholding rates. The Decree also allowed for free availability of the foreign currency earned from such production and, therefore, hydrocarbon exports were fueled to alleviate foreign exchange constraints.

The Macri administration introduced changes that affected oil sector players. The government decided not to renew the stimulus program mentioned above, which favored YPF, and created a new one with the intention of displacing YPF and encouraging private investments. The new subsidy, granted under the Stimulus Program for Investments in the Development of Natural Gas from Unconventional Reservoirs (Resolution No. 46-E/2017,) enabled the entry of new players, positioning them as the new beneficiaries of the sector. As a result, in 2018, Tecpetrol concentrated a large portion of the new subsidy. In addition, the gas wellhead price started following an upward trend that benefited all oil companies (see Resolution No. 212 – E/2016.)

² In 2013, the US Henry Hub gas benchmark price was between USD 3 and USD 4 MMBTU. Meanwhile, in the same year, the imported natural gas from Bolivia had reached USD 10 MMBTU, while the price of liquefied natural gas was USD 17 MMBTU. Thus, the subsidy for that year was convenient, although its value remained unchanged when prices dropped to USD 4 MMBTU and USD 5.7 MMBTU, respectively, in 2016.

2. What Are the Possible Sources of Funding for a Company?

A company may secure funding for a productive investment in three ways:

2.1. Self-funding:

The company uses its own funds and, thus, does away with the obligation to return any money in the future. These funds, in turn, can come from:

A. The company's own profits:

In this case, the company's productive investment comes from the profits accumulated in previous fiscal years. Of course, corporate profits need to be significant enough to finance those projects.

B. Disinvestment:

The company may self-fund more investments through the sale of non-strategic assets, i.e., funds coming from disinvestment are used in the acquisition of valuable assets for the company.

C. Capital Market

(an increase in the company's capital stock): The company may issue shares in the capital market. A company's shares are small portions of ownership over it. When a company issues shares, it must be willing to let new shareholders in, which may dispute political power against existing shareholders. That is why, in many cases, companies are reluctant to go down this road.

2.2. Loans (Debt):

The company undertakes financial obligations. Debt may be taken on from:

A. The Financial System.

Here, a bank would provide funds to the company through a line of credit. Large companies take syndicated loans many times. This happens when the amount of the loan is so large that no financial entity can lend it on its own. In these cases, a bank consortium would fund the company's investment.

B. The Capital Market.

The company may issue debt through corporate bonds. Here, debt would be owed to multiple creditors.

C. Intercompany Loans:

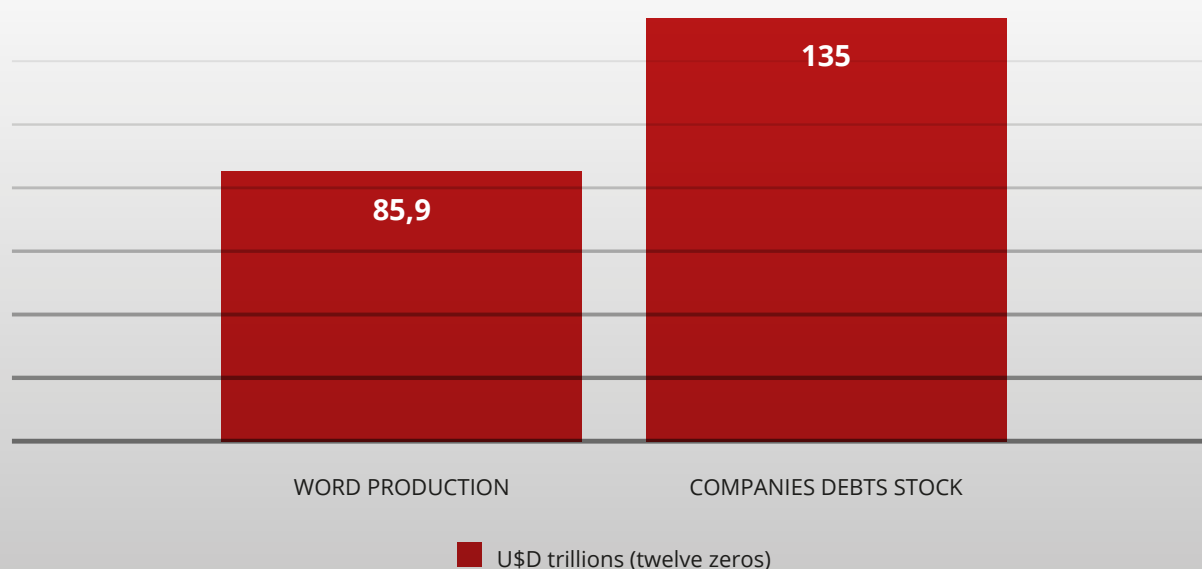
The company may borrow from another company within the same economic group or conglomerate. In this case, both the debtor and creditor are under the control of the same parent company.

2.3. State Subsidies.

As we will see below, the oil sector usually has access to a third source of funding and financing: Subsidies granted by states. A subsidy is a benefit in cash whose purpose is to increase productive investments and stimulate production. In general, these benefits are granted on condition that the company meet certain productive goals.

Box 1. Problems for Economic Development: Debt is an integral part of today's capitalism.

Figure 1: World Gross Production of Goods and Services, and Debt Stock of Financial and Non-Financial Companies Worldwide in USD trillion, 2018.



Source: EJS, World Bank, and Institute of International Finance.

In 2018, world production amounted to USD 85 trillion. The debt held by all financial and non-financial corporations reached, in that same year, USD 135 trillion. One year's world production would not be enough to cover for the liabilities of these companies.

It is worthy of note that corporate debt does not necessarily go to productive investments. Such debt may be used to purchase assets or existing companies, transfer capital abroad or make financial investments. These uses allow companies to speed up profits in the short term to the detriment of an increase in productive capacity – which would come from investing in machinery and tools.

3. What Needs Funding?

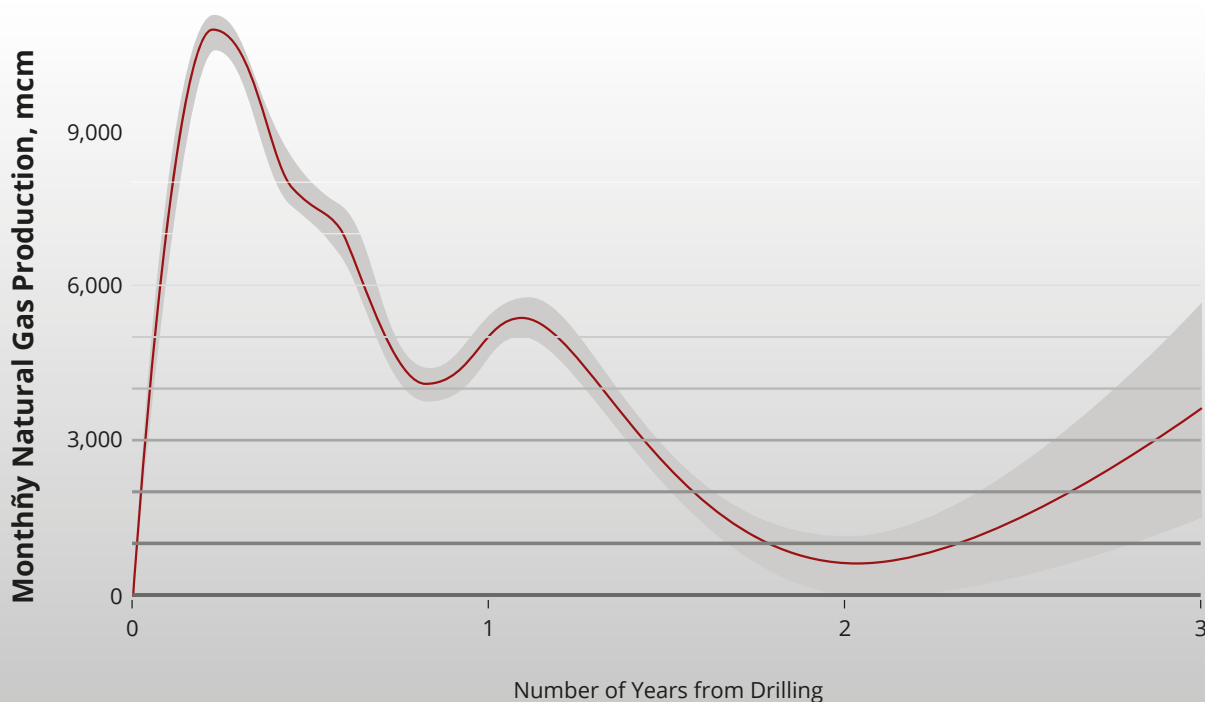
Drilling costs –from equipment rental, software purchases, drilling machines, among others– are the main productive investment of an oil company. The total amount of the required productive investment depends on: a) the drilling cost, b) the number of wells needed to reach the target production, and c) the evolution of well productivity in time. This last one is particularly relevant. By productivity we mean the amount of hydrocarbons that can be extracted during a definite period of time. This is known as the life of the well, which therefore has a production curve that changes over time. In general, at an early stage of their life cycle, oil wells may increase production as a result of higher pressure in the subsoil. As the well ages, however, the amount of oil that can be extracted from it will decrease.

Highly productive oil wells with a slow aging rate require fewer drilling investments. Conversely, when the well ages quickly or earlier than expected, drilling more wells on an ongoing basis will be necessary for the company's total production to increase in time. This will require financing in the medium and long term, which is usually the case with unconventional wells.

In sum, a higher demand for financing triggers problems and poses a challenge for developing countries. The lines of financing for developing countries are far from numerous and their cost is usually high. Moreover, if self-funding is the source used to finance the investment, the consumers of such hydrocarbons (industries, transportation, businesses, stores, households) will have to pay a high price and will ultimately be the ones financing those investment levels.

Box 2. Problems for Economic Development: Well Productivity in Vaca Muerta

Figure 2: Tecpetrol, Fortín de Piedra area, province of Neuquén, Argentina: Mean Productivity of natural gas of unconventional wells throughout the years, and confidence interval (gray area), in mcm



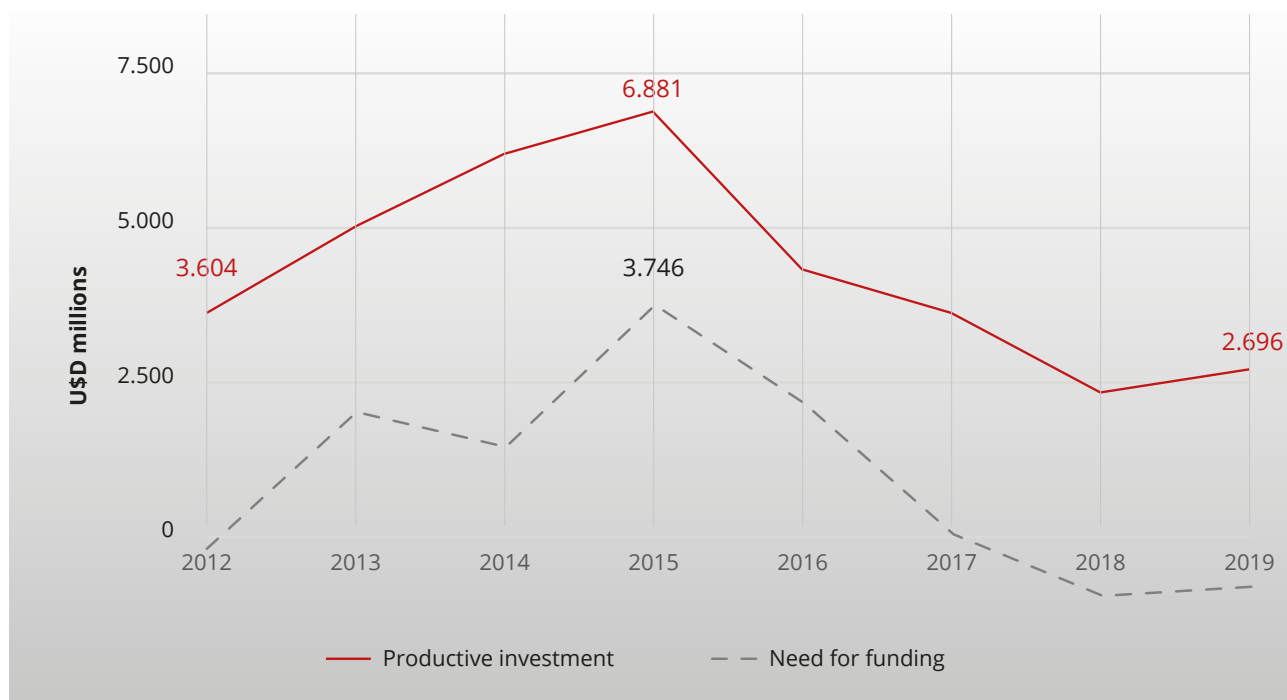
Source: EJES, Office of the Secretary of Energy of the Argentine Republic.

As can be observed, the expected productivity of Vaca Muerta's unconventional wells shows a period of increase in production (young wells) of around three months. Once a well has been drilled, it is expected for it to reach its peak after 90 days, with a decline in productivity from then on. After a year of having reached its peak, a well is expected to produce 40% of what it used to. After two years of drilling, a well will only produce 2% of its peak production. After drilling, mature wells are usually reactivated to stay productive over a longer period of time. This is clearly observed in the second peak after a year of drilling.

4. Do Companies Generate Enough Cash Flow to Fund their Own Investments?

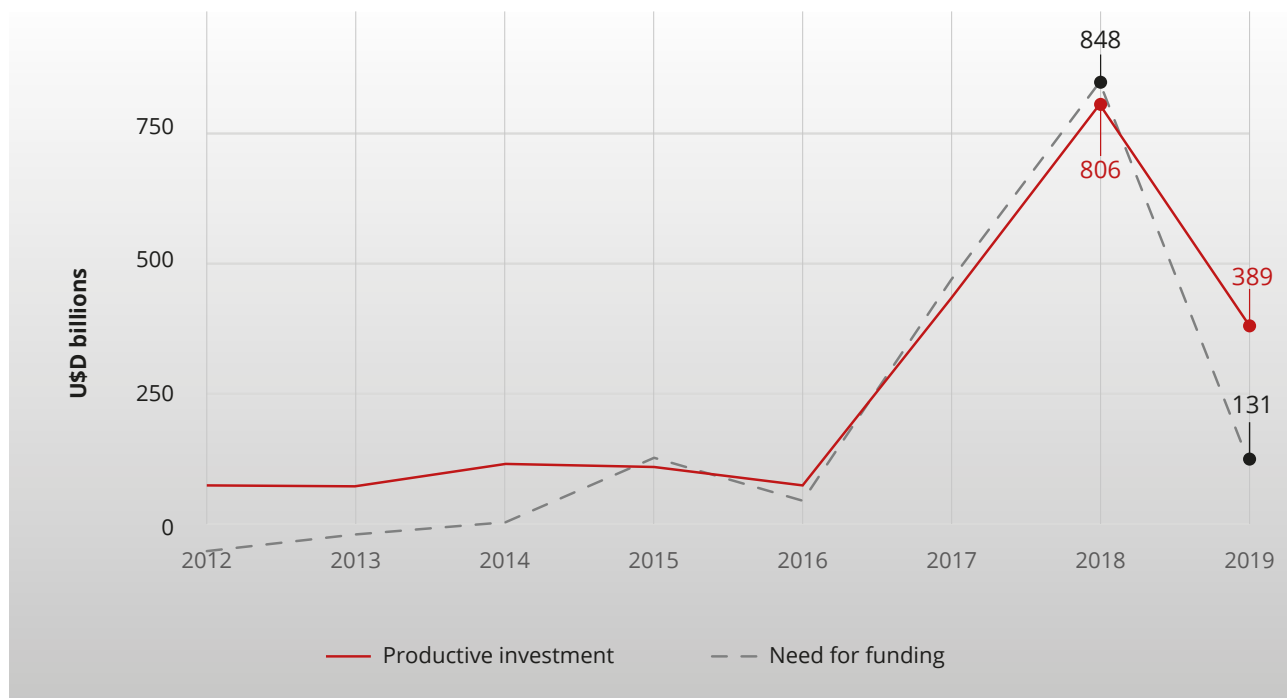
Oil companies need funding to increase investment as a result of drilling. They are not able, however, to generate a self-funding flow that allows them to support such investment. The indicator of a company's need for funding shows how much of their investment they are unable to cover with their own cash flows. As Figures 3 and 4 below show, YPF and Tecpetrol had a significant need for funding in those years when their investments grew. Again, the cash flows of YPF (2014-2016) and Tecpetrol (2017-2018) were not enough to support the increase in their investments.

Figure 3. YPF: Need for funding (difference between productive investment and available cash flow) and productive investment in USD billion, 2012-2019.



Source: EJES, financial statements for several fiscal years.

Figure 4. Tecpetrol: Need for funding (difference between productive investment and available cash flow) and productive investment in USD million, 2012-2019.



Source: EJES, financial statements for several fiscal years.

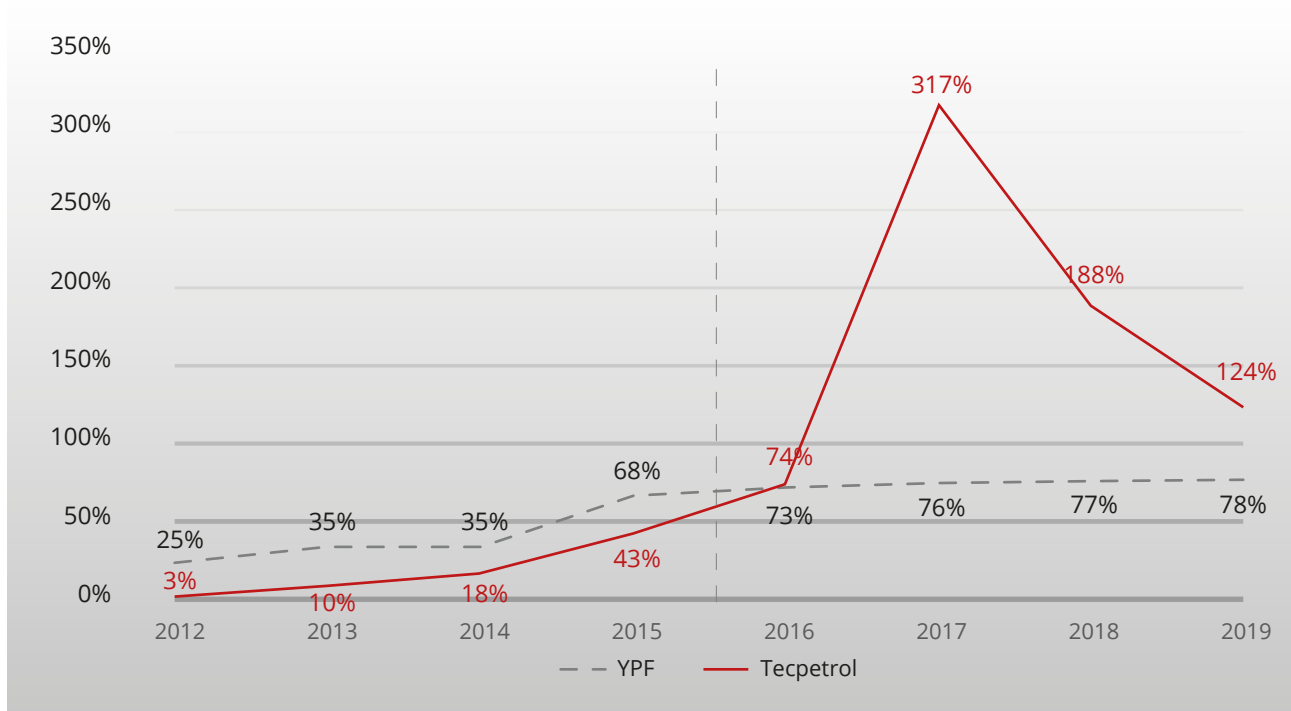
Box 3. Problems for Economic Development: Reliance on external financing

Any investment project needs to factor in a first stage with certain level of financing (depending on its turnover), which could extend until the project is advanced enough to create the necessary income to repay debt. An investment project is said to have reached maturity when the income obtained is higher than the expenses incurred in replicating it. There is a possibility, however, that every policy analyst must take into account: What would happen if the project generated no income to repay debt? This is what happened in the US oil sector and, unlike the United States, a developing country could never “print” the foreign currency it would need to face such debt.

5. What Are Vaca Muerta's Sources of Financing?

The main source of financing of the companies that made the largest investments in Vaca Muerta is debt. YPF made significant investments in 2014-2015 in the Loma Campana area. As can be observed in the following Figure, its level of debt considerably increased at first and then remained stable. Likewise, Tecpetrol's highest investments were made in 2017, financed with loans that pushed the company further into debt.

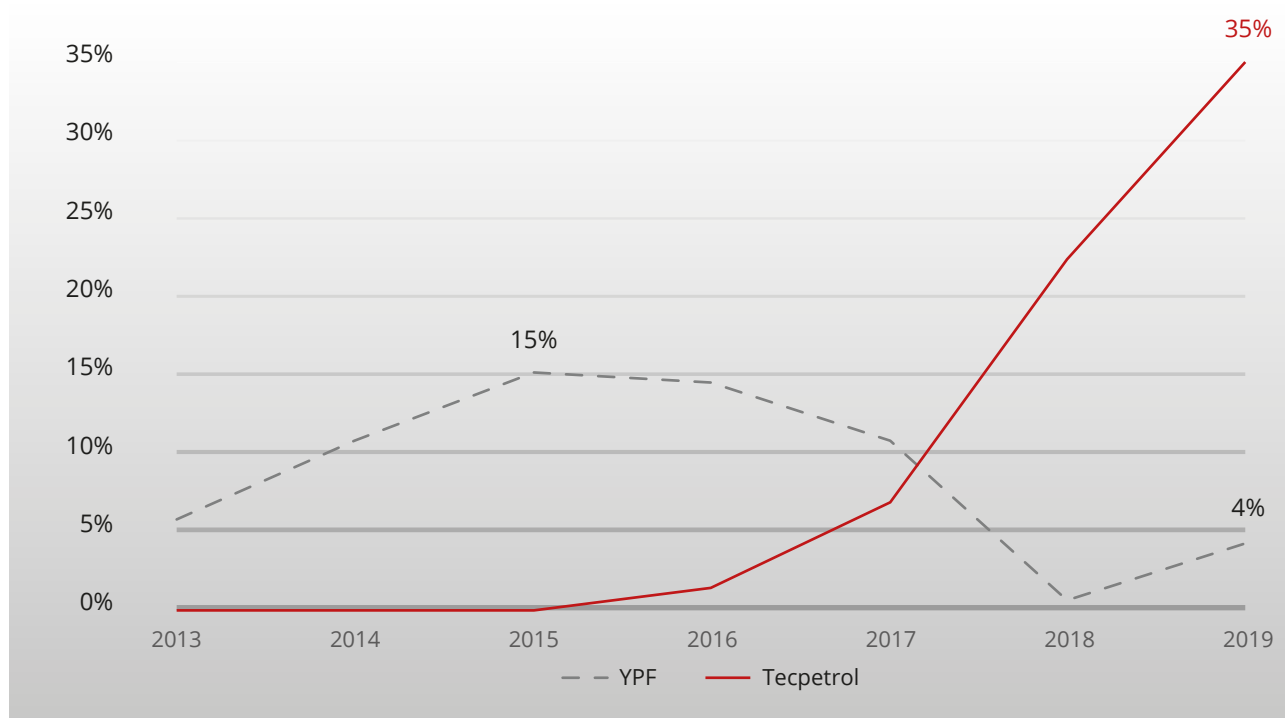
Figure 5: YPF and Tecpetrol: Debt Level as the Ratio between Financial Debt Stock and Company Sales, in % (2012-2019).



Source: EJES, financial statements for several fiscal years.

State subsidies were another source of financing. They accounted for 15-30% of the companies' turnover. Again, YPF's largest investments were made in 2014-2015, while Tecpetrol's were carried out in 2017-2018.

Figure 6. YPF and Tecpetrol: State Subsidies Received over Company Turnover, in % (2012-2019).



Source: EJES, financial statements for several fiscal years.

Box 4. Problems for Economic Development: Reliance on access to financing

One of the challenges faced by the Argentine energy sector is improving the sources on which financing is based. Being a peripheral country, there is a high possibility for Argentina to become dependent upon the sources of financing mentioned above, in the sense that those sources may turn into a trap for long-term underdevelopment.

The question that follows, then, is what would the best financing option be? Choosing one source over another is the result of many conflicting economic interests. On the one hand, the international financial system exerts pressure to influence the production matrix through debt mechanisms. On the other, the State needs energy development for the well-being of its population and is therefore compelled to grant subsidies to oil companies. A distinction should be drawn between the consequences of granting subsidies to a private company and a state-owned one. In the latter case, the general balance between winners and losers is usually offset, as the State is granting a subsidy to a company that belongs to it.

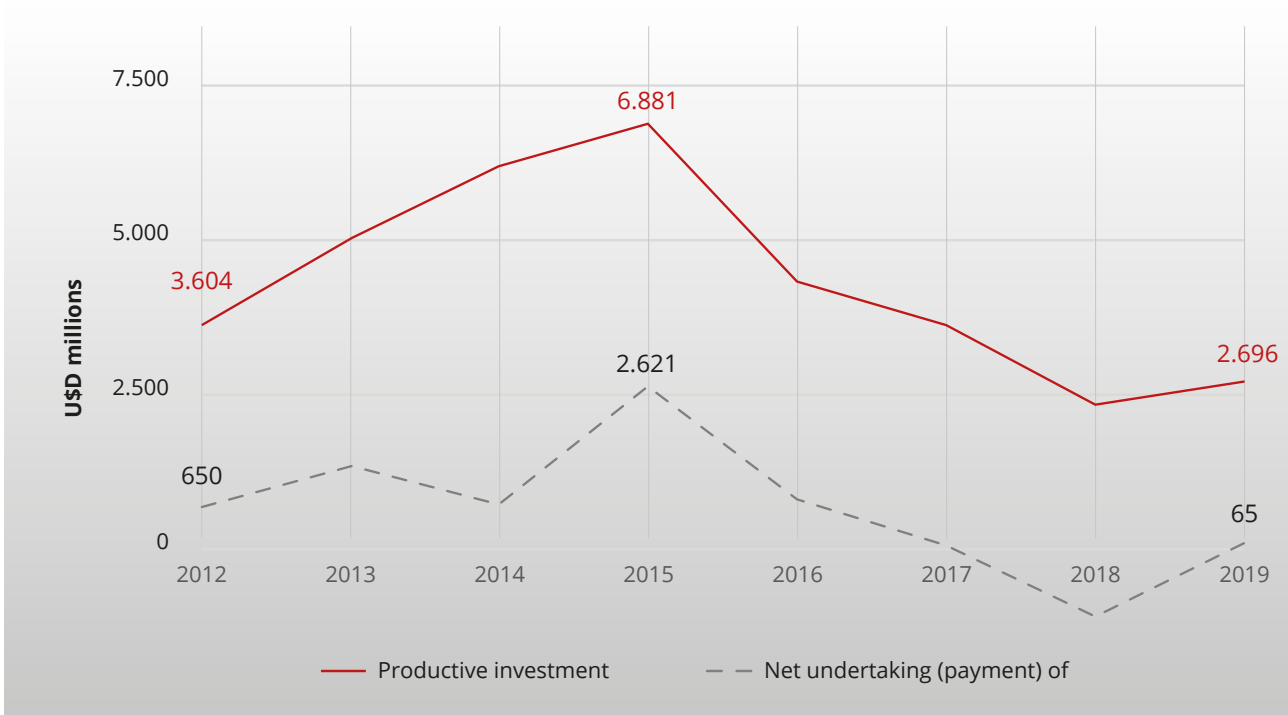
It is often argued that we should “live with what is ours.” Developing countries like Argentina have countless, valuable assets that have been transferred abroad through capital flight. Those assets were created through the hard work of all of its people and were wasted in terms of economic and productive development. As a result of financialization and financial international legislation, in practice, “living with what is ours” is not an option for peripheral countries.

6. How Much Financing Did Companies Get?

6.1. Debt

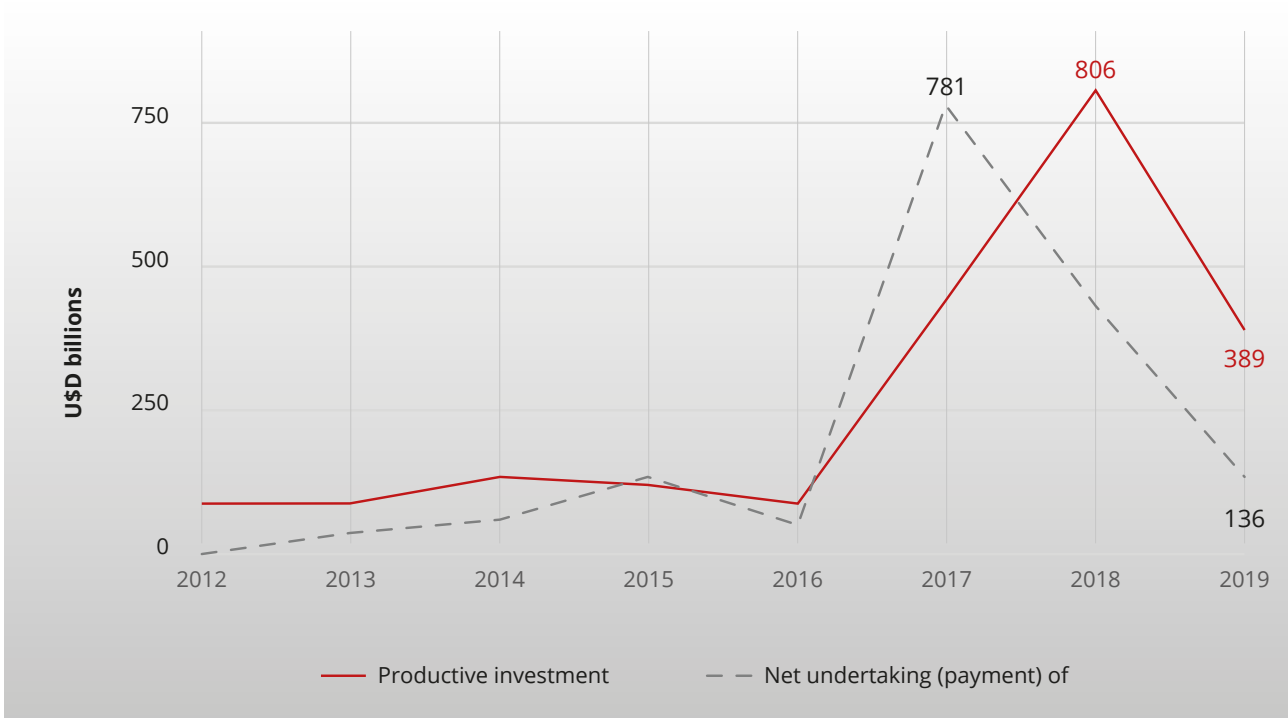
As companies were unable to generate the necessary cash flows to fund their investments, they had to take on debt. The debt undertaken by the companies (YPF and Tecpetrol) increased as their investments rose. Financial debt covered the largest portion of those companies' need for funding.

Figure 7. YPF: Net Debt Undertaking and Productive Investment, in USD billion (2012-2019).



Source: EJES, financial statements for several fiscal years.

Figure 8. Tecpetrol: Net Debt Undertaking and Productive Investment, in USD million (2012-2019).



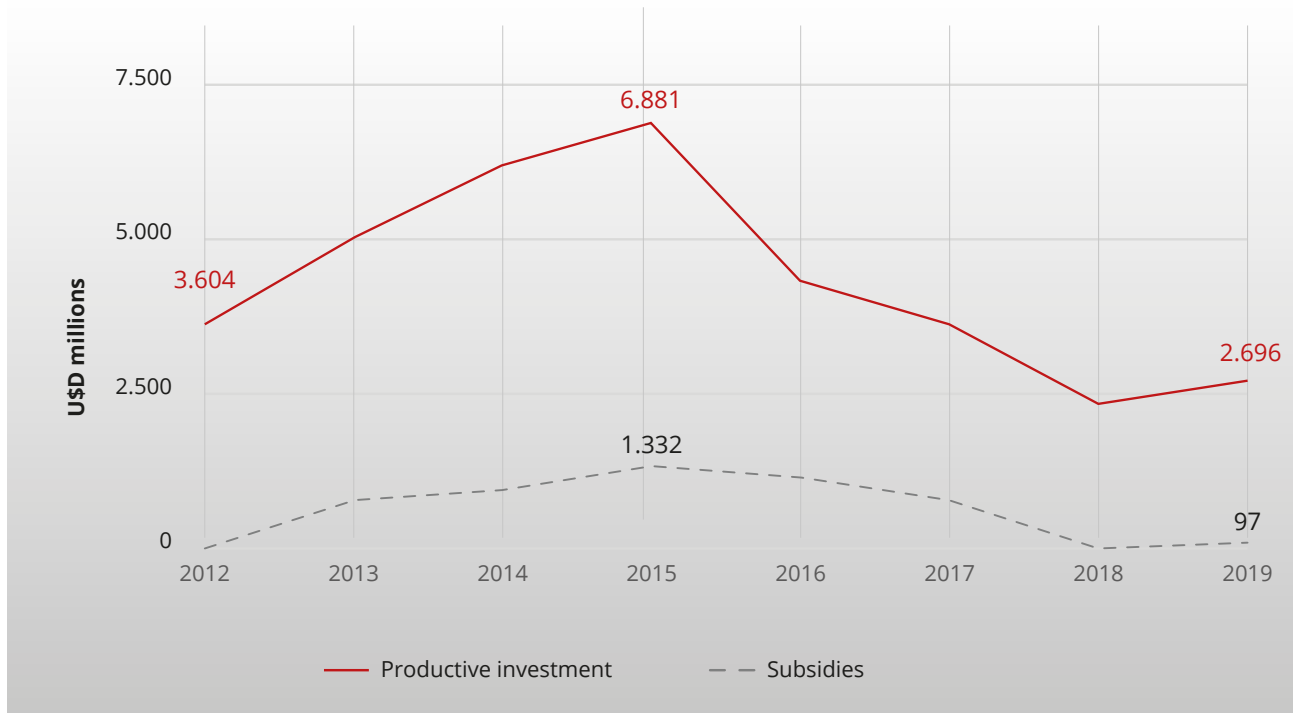
Source: EJES, financial statements for several fiscal years.

6.2. Subsidies

In both companies under analysis, there was a high correlation between the subsidies granted and the level of investment. As investments grew, so did subsidies.

The purpose of these economic benefits was to stimulate company production by setting goals: Any company that reached them would be rewarded. Subsidies were granted in Argentine pesos based on the currency exchange rate, although in some cases, they were received in the form of government bonds expressed in US dollars.

Figure 9. YPF: Subsidies Received and Productive Investment in USD billion (2012-2019)



Source: EJES, financial statements for several fiscal years.

Figure 10. Tecpetrol: Subsidies Received and Productive Investment in USD million (2012-2019)



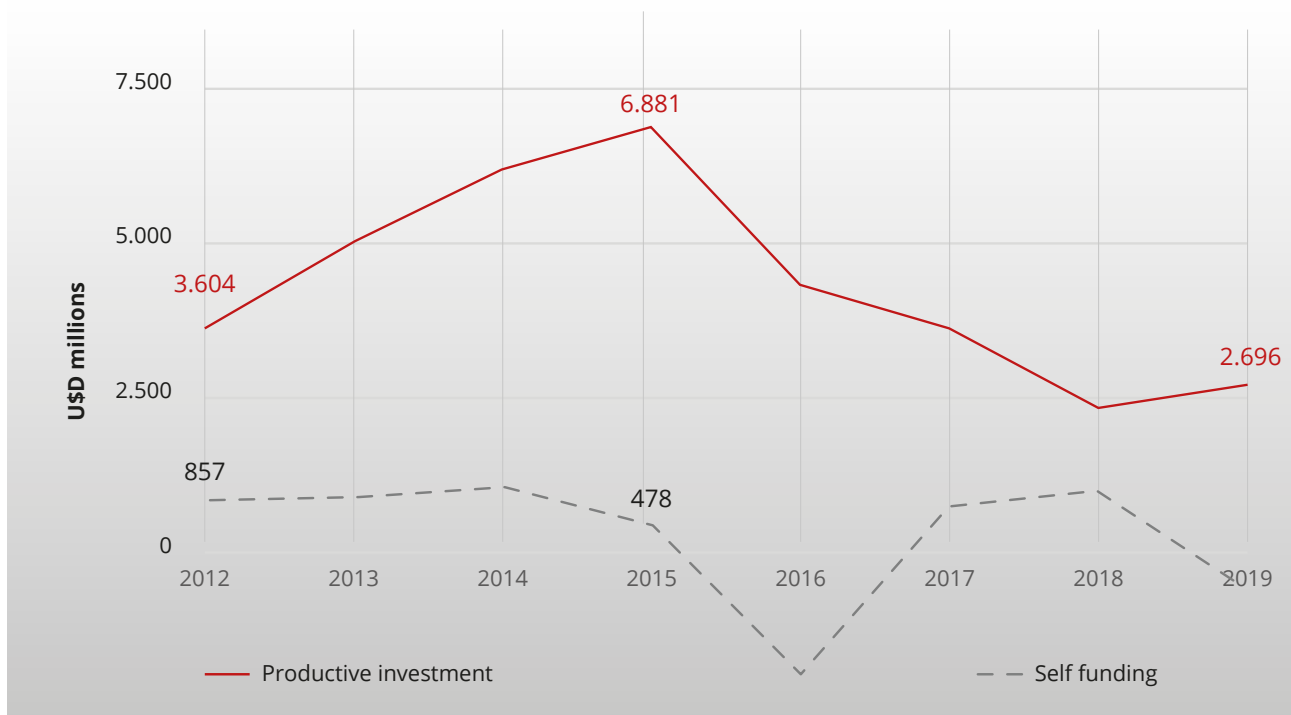
Source: EJES, financial statements for several fiscal years.

6.3. Self-Funding

Finally, these companies' profits did not correlate with the evolution of productive investments. During investment decision-making processes, companies usually consider profit evolution in previous years. Corporate boards of directors reserve funds over accumulated profits to fund future investments. The higher those reserve funds are, the less the company will need to resort to debt –and since the first option has no cost at all, it will be able to invest more.

This lack of correlation between investments and self-funding may have several causes. First, projects may have not yet matured and, therefore, they would not allow for higher benefits – i.e., the productive project is not as profitable as expected in the short-medium term. Second, debt service costs may have taken up a large portion of operating profits (from the core activity) and, thus, net profits (after servicing debt) would not grow as expected. Third, sector-related or macroeconomic issues may be involved which are alien to how companies behave: the prices of hydrocarbons, currency exchange rates, interest rates, among others.

Figure 11. YPF: Self-Funding (Profit for the Year) and Productive Investment in USD billion (2012-2019)



Source: EJES, financial statements for several fiscal years.

Figure 12. Tecpetrol: Self-Funding (Profit for the Year) and Productive Investment in USD million (2012-2019)



Source: EJES, financial statements for several fiscal years.

Box 5. Challenges for Development: Debt is determined by its own purpose

The use of financing has been widely called into question in that it should serve a higher social purpose. However, debt is determined by its own purpose. The use of financing is not interchangeable. In other words, such financing would not exist if it were intended for something else.

Financing is the result of relations between economic interests. Therefore, this argument goes deep into the mechanics of the national and international financial system and, to a greater extent, into how a developing country is subject to the very nature of how the world's economic system works.

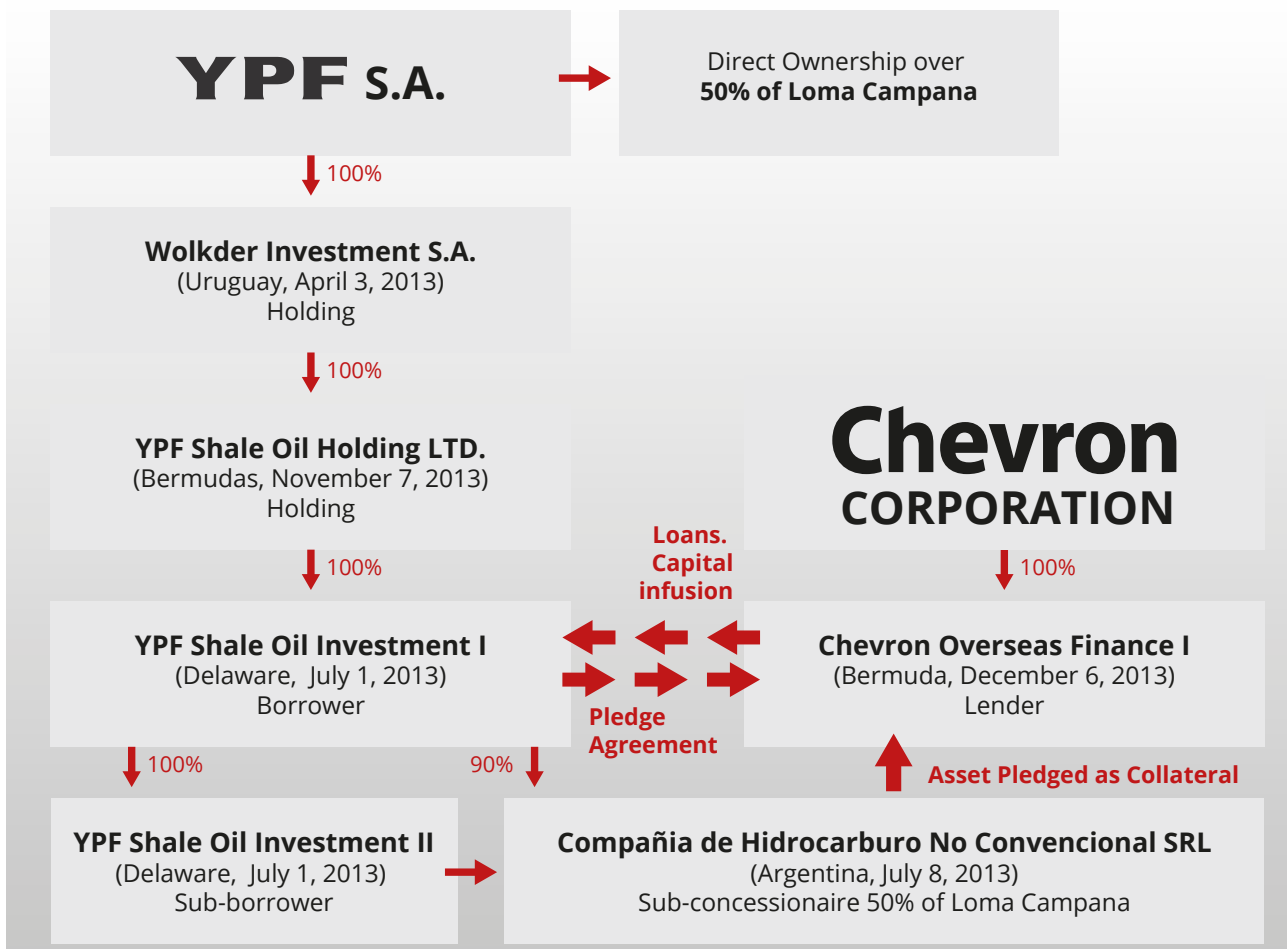
7. Who Do Companies Take On Debt From?

The agreement signed with the multinational Chevron in 2013 is YPF's closest precedent of exploiting Vaca Muerta through debt. The US company's role was that of a lender. The productive development of the Loma Campana area (in the province of Neuquén) required a strong flow of capital to extract hydrocarbons through the unconventional technique of fracking. To that effect, a series of "shell" companies were created, registered merely as a zip code in a tax haven. Their sole purpose was to direct capital from their place of origin to oil production, and vice versa. Both YPF and Chevron created offshore companies to absorb financial loans so they could take on debt from one another (intercompany loans.) The tax havens chosen included Uruguay, Bermuda, and the state of Delaware (USA).

Chevron's business was solely financial. Capital was infused in the form of loans from one of its company structures in Bermuda. Chevron set a 7% interest rate on the principal lent to YPF's offshore companies. Such interest rate, however, could become higher: If a productive project earned profits, Chevron's offshore structure in Bermuda would get 50% of those profits. Thus, Chevron managed to ensure a minimum financial gain of 7% over the principal lent, while profits would have no limit if the hydrocarbon extraction turned out to be profitable.

Likewise, a series of companies owned by Tecpetrol organized in tax havens gave intercompany loans to Tecpetrol in Argentina. As the company required more financing in the country, several lines of credit were opened with different affiliates in tax havens (notably, the Netherlands, Luxembourg, Panama, and Uruguay.)

Figure 13. YPF: Structure of companies in tax havens that grant intercompany loans to one another.



Source: Socio-Environmental and Energy Justice Alliance, YPF-Chevron Agreement.

Figure 14. Tecpetrol: Structure of companies in tax havens that give intercompany loans to one another.



Source: EJES, Argentine Antitrust Commission.

Box 6. Challenges for Development: Capital in haven

When we talk about tax havens and capital flowing across these offshore areas, we should bear in mind the problems they could create in the near future. First, these capital flows are speculative in nature with almost no intention to foster development. Thus, the productive investment necessary for the energy sector to take off could transform into a financial business that only creates financial revenue. In this regard, capital flows from, and goes back to, tax havens, with peripheral countries being unable to retain it. These constant capital inflows and outflows are a heavy burden for developing countries, as they exert even more pressure on their foreign currency constraints.

Second, companies in tax havens foster tax evasion, tax avoidance, and capital flight. Generally, tax-haven structures allow for the centralization of speculative capital outflows. Subsidiaries organized offshore set a financial machinery into motion that serves the interests of multinational companies and international financial capital only.

Third, as we have already discussed, the State granted subsidies to oil companies. These beneficiary companies have used large amounts of money to repay debt to other companies abroad. The fact that such subsidies are used by companies to repay debt to firms in tax havens does not seem to be neither ethical nor fair from a social standpoint.

8. What Problems May Arise in the Future with These Public-Private Forms of Financing?

8.1. Devaluation.

Increase in debt expressed in local currency.

Sudden devaluation processes threaten macroeconomic stability in general and corporate finance in particular. By devaluation we mean an increase in the currency exchange rate. In this case, the US dollar has a higher value against the Argentine peso. Argentina suffered from successive episodes of devaluation in the past few years: January 2014, December 2015, April 2018, and August 2018 (to name a few.)

Companies that owe debt in US dollars will have to repay it in the same currency. Upon devaluation, they will need more pesos to repay a fixed amount in dollars. In this scenario, companies see their debts increase, even though the loans in dollars are the same.

Consequently, the cost of debt in dollars will increase. Companies will be reluctant to keep on undertaking debt and, without new loans, productive investments will fall.

In addition, in the face of devaluation, the systemic risk of indebtedness (default risk) by the different State levels, and companies alike, could dramatically increase. This means that the exchange rate will rise if new debt in dollars is undertaken.

On the other hand, as already explained, the subsidies were granted by the State in Argentine pesos subject to the exchange rate. Any variation in such rate would jeopardize the State's fiscal sustainability. Upon devaluation, the federal government would have to grant larger amounts of Argentine pesos to cover for the same debt amount in dollars.

8.2. Systemic Risk.

Increases in Interest Rates.

There is an increase in the systemic risk of a debt when creditors have negative expectations about the possibility of being paid back. Credit rating agencies (generally led by international banks) are entrusted with the assessment of such risk. This means that the state sovereignty of developing countries is usually subject to the interests of the international financial capital, under the scrutiny of these agencies.

Companies' debt interest rate expresses the default risk and is determined by the interest rate at which the national State undertakes financial obligations. If the national State manages to stabilize the economy, by applying macroprudential policies (for example, regulating capital flows, taking on debt at low rates, fostering economic growth,) the systemic risk rate will decrease. Otherwise, the State and the companies will be affected, and the interest rate will increase.

Following the 2018 devaluation, the interest rate rocketed. By way of example, in 2017, Tecpetrol managed to issue debt through corporate bonds at a rate near 5%. Intercompany loans were repaid at a 4% rate that same year. These loans were very convenient for the firm. However, once the currency exchange crisis hit in 2018, intercompany-loan interest rates went up to 7-8%, meaning the cost of taking on debt doubled.

8.3. Over-Indebtedness Crisis.

Problems with Financing.

At this point, it becomes difficult to pinpoint a precise indicator (with its respective value) that may confirm a company's over-indebtedness. Debt processes mirror power relations between debtor and creditor.

Over-indebtedness means a company is unable to take on new debt without jeopardizing its financial sustainability. In these cases, the company will prioritize paying principal and interest over any productive investment. This is apparent when renegotiating the debt becomes imperative (for example, reorganization proceedings.)

On the one hand, the weight of financial liabilities over sales shows the ability (or lack thereof) to generate new income to cover them. On the other hand, the need for funding underscores companies' scarce capacity to generate cash flows to meet their investment needs. In the case of YPF and Tecpetrol, all of these indicators have "worsened" with the increase in productive investments, which attests to their over-indebtedness risk.

As these companies are too big to be forced into bankruptcy, States might go to their rescue. This policy is far from new in the history of the world's economy and Argentina's in particular. The bailout of companies (financial and non-financial) to save them from indebtedness was commonplace during the 2008 world crisis. In Argentina, companies were bailed out by nationalizing the debt they had undertaken during the last few years of the civic-military dictatorship (mainly in 1982-1983) and by dropping the convertibility system (2002).

The energy sector is a priority for the production and progress of all other sectors of an economy. A crisis in this industry would put the State on alert because, if it did not bail out companies, energy production—and with it, the production of all other sectors—would be in jeopardy.

8.4. Balance of Foreign Currency:

Lines of the Balance of Foreign Currency Where Exchange Constraints in the Energy Sector Are Tighter.

The balance of foreign currency shows a country's foreign currency inflows and outflows. Inflows may be finance-related, when foreign currency flows into the economy as a result of loans received; capital-investment related, when they increase the capital stock of a company (FDI); or business-related, as a result of exports. Likewise, financial outflows may be rooted in the respective amortization payments of loans, acquiring foreign currency for speculative purposes (capital flight or purchase of assets abroad); in trading, when goods are imported; or in the transfer of profits abroad by the subsidiaries of transnational companies.

In 2013, the sector showed high levels of hydrocarbon imports that heightened foreign currency constraints. After investments were made in the sector, however, the balance went from a deficit to a surplus. In 2016-2017, the oil industry altogether featured a surplus in the balance of foreign currency. Two simultaneous events were responsible for this. On the one hand, imports fell due to import substitution (2013-2015) and the economy became less dynamic under the Cambiemos administration (2016-2019.) On the other hand, foreign currency inflows grew as a result of loans received from foreign entities.

The sustainability of this sector-policy scheme could be affected, as the inflow of foreign currency came exclusively from debt undertakings. This will only make financial outflows higher because of debt servicing, thus reverting the surplus reached, which has been the case in the past few years.

Moreover, despite foreign currency outflows, the convenience of developing the energy sector based on unconventional hydrocarbons might be justified by the savings in foreign currency it would produce as against hydrocarbon imports. In this regard, investments in the sector would bring about a lower demand for foreign currency as opposed to that required for hydrocarbon imports. Plus, import substitution would create a series of multipliers in economic activity.

Table 1. Oil Sector in Argentina: Balance of Foreign Currency in USD billion (2013-2019)

		2013	2014	2015	2016	2017	2018	2019
Outflows	Finance	1.622	3.254	2.934	2.266	3.085	4.287	5.269
	Profits	80 M	156 M	39 M	155 M	330 M	92 M	78 M
	Trading	9.669	9.874	5.9	4.326	4.232	3.255	3.075
Inflows	Finance	1.039	3.812	4.897	7.023	5.673	2.647	3.368
	FDI	521 M	820 M	470 M	785 M	455 M	534 M	320 M
	Trading	5.778	4.891	2.782	2.036	2.09	2.174	3.184
	Balance	-4.032	-3.762	-723	3.098	571 M	-2.278	-1.55

Source: EJES, Argentine Central Bank.

8.5. Foreign Currency and Indebtedness:

Future Debt Maturities (Risk of Debt Socialization and State Bailouts.)

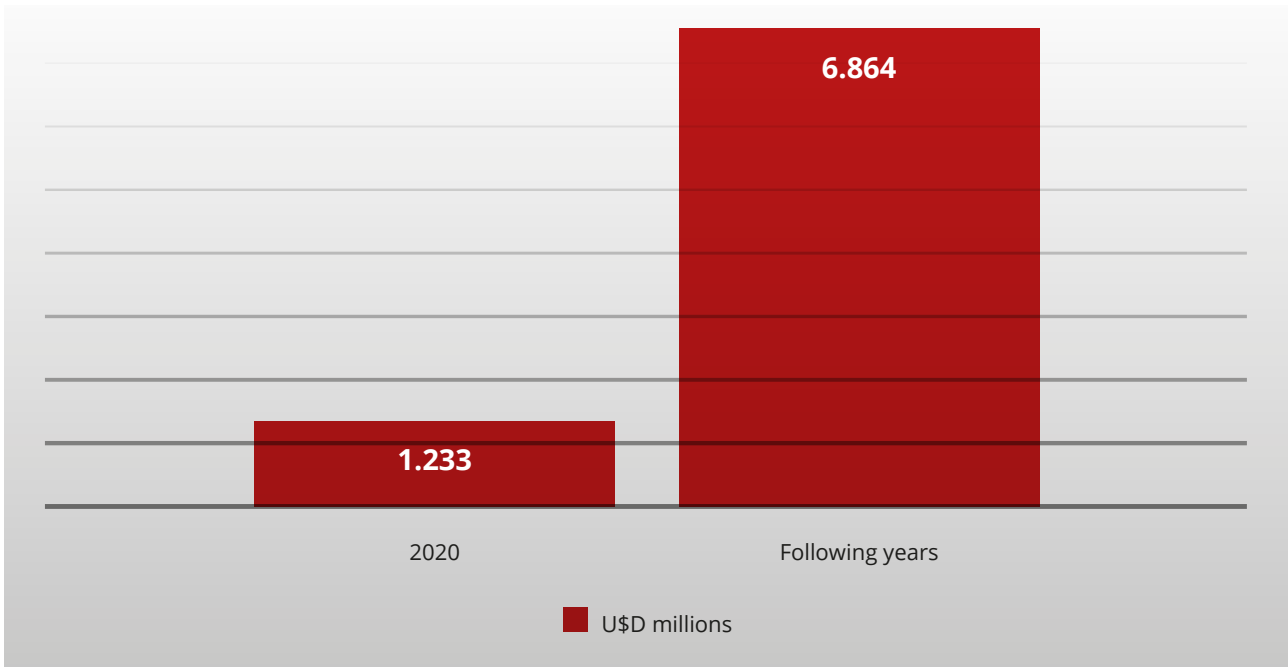
The companies under analysis feature a maturity profile of debt in dollars that will call for foreign currency in the short term. This problem could worsen, as the different state levels (nation-

al and provincial) are in the process of renegotiating their debt.

YPF, in particular, will have to repay USD 1.233 billion (debt expressed in dollars) in 2020 and USD 6.864 billion in the following years. Meanwhile, Tecpetrol will have to pay USD 558, USD 45, and USD 668 million in 2020, 2021, and 2022, respectively.

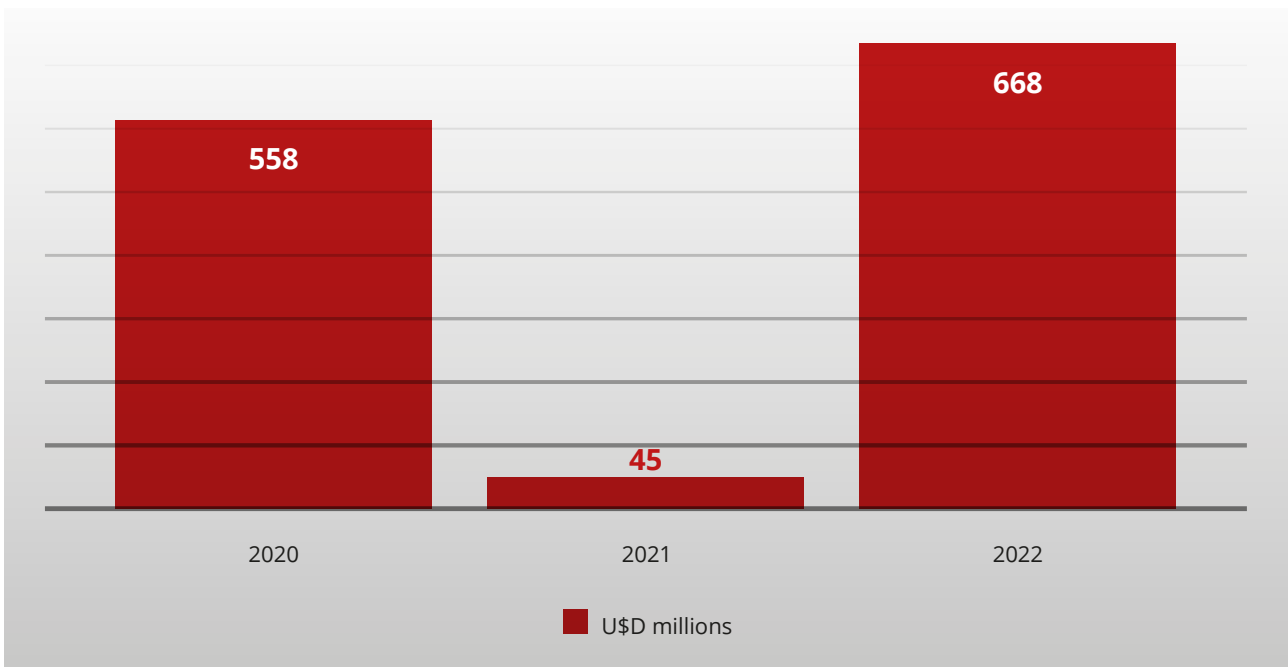
This evolution in liabilities could call into question the future demand for foreign currency by the development model chosen. The indebtedness policy creates a foreign currency burden that could turn out to be excessive.

Figure 15. YPF: Maturity Profile of Debt Expressed in US Dollars



Source: EJES, financial statements for several fiscal years.

Figure 16. Tecpetrol: Maturity Profile of Debt Expressed in US Dollars (2020-2022)



Source: EJES, financial statements for several fiscal years.

8.6. Loss of Sovereignty.

Problems of Jurisdiction, Tax Havens, and Vulture Funds.

The largest portion of financial loans originate in offshore companies created in tax havens. This poses a series of challenges for the sovereignty of developing countries. The YPF-Chevron

agreement expressly states that any dispute arising between the parties will be submitted to the International Chamber of Commerce. Moreover, many companies operating in Vaca Muerta are controlled by foreign companies. If the State were to change its energy policy in general, and its subsidy policy in particular, such ownership would give way to the possibility of the parent company filing for the arbitration of the International Centre for Settlement of Investment Disputes.

In this regard, upon a delay in the payment of subsidies between the company and the State, Tecpetrol argued in its balance sheet that: “Tecpetrol Internacional S.L.U. and Tecpetrol Investments S.L.U. (formerly, Tecpetrol Internacional S.A.,) as shareholders of Tecpetrol S.A., could file a claim with international tribunals.” (Tecpetrol, 2019, p. 57).

In addition, ownership based on a tax-haven structure provides more legal certainty to international capital to the detriment of national interests. Companies use these structures as a legal “shell” in the face of potential claims. The weakest jurisdiction in terms of regulation prevails over the strongest one. Offshore companies may “export and import jurisdiction” as they deem convenient. This is why, more often than not, multinational companies have countless holdings offshore that control one another. As a result, company control becomes a true Kafkaesque labyrinth, which makes the ultimate parent company very difficult to reach. This gives the multinational company the possibility to free itself from any liability or claim. The company will only answer with the assets located in each territory if a lawsuit is filed against it over environmental, labor or tax issues.

8.7. The State Gets Lower Oil Revenues.

Fiscal Balance.

An increase in productive investment goes hand in hand with higher subsidies for oil companies. This translates into losses in oil revenues for the State. Consequently, the State has less influence over any surplus generated by companies and may not redistribute it across low-income segments of the population.

As can be observed in Table 2 below, the national State had a deficit in its fiscal balance (i.e., taxes collected were lower than the subsidies granted) during the period of increase in its productive investment. Of course, when companies started producing more, provinces were able to secure higher royalties for hydrocarbon extraction.

Due to the financing structure of tax havens, income tax payments could also be affected. On the one hand, by way of a reduction in profits as a result of debt costs and, on the other, because tax havens encourage tax avoidance and several forms of tax evasion.

Table 2. Tecpetrol and YPF: Fiscal Balance (Taxes Paid minus Subsidies Received)

	Tecpetrol (in USD million)						
	2013	2014	2015	2016	2017	2018	2019
Royalties a	52	61	48	37	41	114	95
Income Taxes b	9	14	0	3	9	81	92
Direct subsidies c	0	0	0	13	12	134	315
Total fiscal balance a + b - c	61	75	48	27	38	61	-129
National State fiscal balance b - c	9	14	0	-10	-3	-53	-224
	YPF (in USD billion)						
	2013	2014	2015	2016	2017	2018	2019
Royalties a	1.072	1.17	1.287	1.158	1.065	1.127	704 M
Income taxes b	1.693	1.628	2.658	96 M	240 M	1.833	440 M
Withholdings w	321 M	218 M	132 M	89 M	97 M	60 M	109 M
Direct subsidies c	783 M	955 M	1.332	1.134	776 M	-	95 M
Total fiscal balance a + b + w - c	2.302	2.061	2.745	209 M	627 M	3.02	1.158
National State fiscal balance b + w - c	1.23	891 M	1.458	-949 M	-438 M	1.893	455 M

Source: EJES, financial statements for several fiscal years.

Note: All amounts were paid in Argentine pesos. However, they were expressed in US dollars for intertemporal comparison purposes.

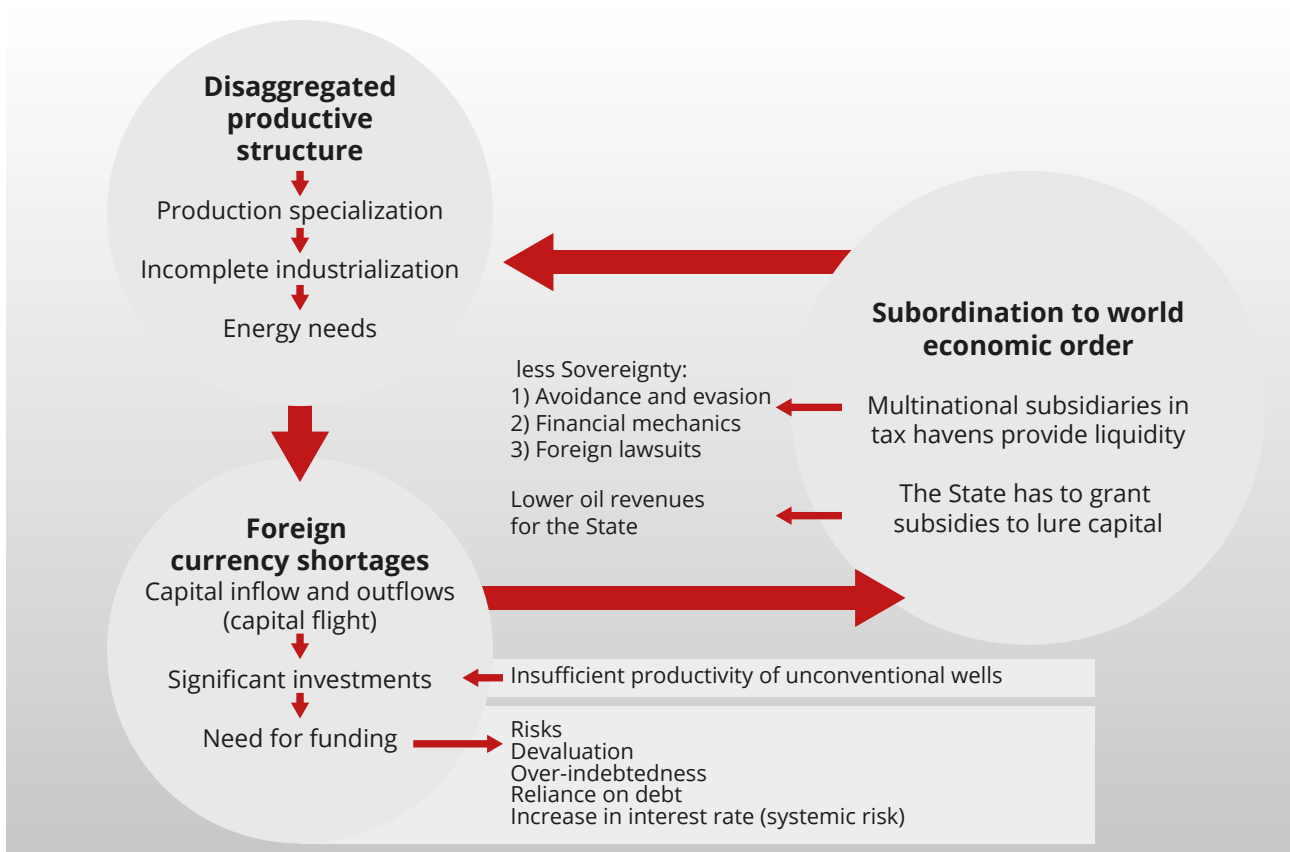
Conclusion

Economic problems in Argentina are rooted in its **disaggregated or unbalanced production structure**. Since the inception of its production development, the country has featured a highly specialized production based on natural resources. The industrialization process is not complete, in a world that pushes to open borders and embrace the logic of accumulation behind global value chains. As a result, every time Argentina sets off on its journey towards productive and industrial growth, problems with foreign currency shortages and energy needs arise. In other words, the underdevelopment of its production structure is reflected on foreign currency constraints. Capital inflows and outflows that reproduce capital accumulation in the new **world economic order** heighten those constraints, although peripheral countries do not necessarily produce scarce resources for their productive reinvestment; on the contrary, those resources are usually rerouted to serve non-productive purposes abroad (i.e., capital flight.)

Enormous investments and their need for financing prove the subordinate role of Argentina in global value chains and the world economic order. The energy sector of a peripheral country is forced to resort to the capital of multinational companies for its development. However, such capital flows from subsidiaries located in tax havens. Capital flows and reflows prevent peripheral countries from retaining revenues so as to expand their productive capacity. These are financial logics that make capital liquid and unstable.

Meanwhile, given the economic and financial problems of developing countries, the State is forced to grant benefits in the form of subsidies to lure capital in order to share financing risks. These public-private endeavors create countless problems and challenges for Argentina that do nothing but replicate the country's underdevelopment.

Figure 17. Explanatory Diagram



References

- Agénor, P. R. & Montiel, P. J. (2015). *Development Macroeconomics*. Princeton University Press.
- Arend, M. (2015). A industrialização do Brasil ante a nova divisão internacional do trabalho. *Technical Report, Texto para Discussão*. Instituto de Pesquisa Econômica Aplicada (IPEA).
- Barrera, M., Kennedy, D., Palermo, H. & Schorr, M. (2015). Impacto socioeconómico de YPF desde su renacionalización (ley 26.741). Desempeño productivo e implicancias sobre los mercados laborales y el entramado de proveedores. ECLAC 1.
- Cantamutto, F. (2016). Economía política de la valorización en argentina: la energía en las disputas del bloque en el poder. *Revista Despierta* 3(3), pp. 77–104.
- Carkovic, M. & Levine, R. (2005). Does Foreign Direct Investment Accelerate Economic Growth? *Does Foreign Direct Investment Promote Development?*, p. 195.
- ECLAC, N. (2018). The Challenges Facing Latin America and the Caribbean Regarding Financing for the 2030 Agenda for Sustainable Development.
- Fernández, V. R. (2015). Global Value Chains in Global Political Networks: Tool for Development or Neoliberal Device? *Review of Radical Political Economics* 47(2) (2015), pp. 209–230.
- García Zanotti, G., Kofman, M. & Crespo López, F. (2016). Transferencias al sector hidrocarburífero en Argentina. Socio-Environmental and Energy Justice Alliance (EJES).
- Gereffi, G. (2014). Global Value Chains in a Post-Washington Consensus World. *Review of International Political Economy* 21(1), pp. 9–37.
- Gereffi, G. & Fernandez-Stark, K. (2011). *Global Value Chain Analysis: A Primer*. Center on Globalization, Governance & Competitiveness (CGGC). North Carolina, USA: Duke University Durham.
- Gómez Sabaini, J. C., Jiménez, J. P. & Dalmiro, M. (2017). El impacto fiscal de los recursos naturales no renovables. In *Consensos y conflictos en la política tributaria de América Latina*. ECLAC, pp. 393–414.
- Konings, J. (2001). The Effects of Foreign Direct Investment on Domestic Firms: Evidence from Firm-Level Panel Data in Emerging Economies. *Economics of Transition* 9(3), pp. 619–633.
- Krippner, G. R. (2005). The Financialization of the American Economy. *Socio-Economic Review* 3(2), pp. 173–208.
- Marín, A. (2016). Las industrias de recursos naturales como plataforma para el desarrollo de américa latina. In Denzin, C. y Cabrera, C. (eds.) *Nuevos enfoques para el desarrollo productivo. Estado, sustentabilidad y política industrial*. Friedrich Ebert Foundation.
- Pérez, C., Marín, A. & Navas-Alemán, L. (2014). El posible rol dinámico de las redes basadas en recursos naturales para las estrategias de desarrollo en América Latina. *INCLUSIVO*, p. 347.
- Pérez Roig, D. (2016). Explotación de hidrocarburos en la Argentina postconvertibilidad (2002-2013): entre el valor económico y la importancia estratégica. *Desarmando el modelo. Desarrollo, conflicto y cambio social tras una década de neodesarrollismo*.
- Prasad, E. S., Rajan, R. G. & Subramanian, A. (2007). Foreign Capital and Economic Growth. *Technical Report*. National Bureau of Economic Research.
- Rogers, D. (2013). Shale and Wall Street: Was the Decline in Natural Gas Prices Orchestrated? *Energy Policy Forum*. Energy Policy Forum.
- Sabaini, G. & Dalmiro, M. (2017). La evasión internacional y la erosión de las bases tributarias. In *Consensos y conflictos en la política tributaria de América Latina*. ECLAC, pp. 365–390.
- Tregenna, F. (2015). Deindustrialisation, Structural Change and Sustainable Economic Growth. *UNU-MERIT Working Papers No. 032*. Maastricht: UNU-MERIT.
- UNCTAD (2012). *Trade and Development Report, 1981–2011: Three Decades of Thinking Development*. United Nations.
- UNCTAD (2014a). *Fiscal Space for Stability and Development: Contemporary Challenges*. United Nations, Chapter VII, pp. 181–214.
- UNCTAD (2014b). *International Finance and Policy Space*. United Nations, Chapter VII, pp. 137–165.
- UNCTAD (2015). *External Debt and Debt Crises: Growing Vulnerabilities and New Challenges*. In *Trade and Development Report, 2015: Making the International Financial Architecture Work for Development*. United Nations, pp. 181–214.
- U.S. Energy Information Administration (2013). *Technically Recoverable Shale Oil and Shale Gas Resources: An Assessment of 137 Shale Formations in 41 Countries Outside the United States*. Washington.
- Werner, M., Bair, J. & Fernández, V. R. (2014). Linking up to Development? Global Value Chains and the Making of a Post-Washington Consensus. *Development and Change* 45(6) (2014), pp. 1219–1247.
- Williams-Derry, C., Sanzillo, T. & Hipple, K. (2018). *Energy Market Update: More Red Flags on Fracking*. *Technical Report*. Institute for Energy Economics and Financial Analysis.
- YPF-CHEVRON (2013). *Agreement between YPF (YPF Shale Oil Investment I) and Chevron (Chevron Overseas Finance I)*. Argentine Judiciary.
- YPF S. A. (2014). *Prospecto obligación negociable clase XXVIII*. *Technical Report*. Argentine Securities Exchange Commission.



Enlace por la
Justicia Energética
y Socioambiental



observatorio
petrolero **sur**

soberanía • energía
justicia ambiental



www.ejes.org.ar

