Oil and Gas in Federal Systems

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Oil and Gas in Argentina

Juan Antonio Zapata[i]

Universidad Nacional de Cuyo

The Forum of Federations is undertaking a study of the factors that affect the management of petroleum resources in federal systems, of which this draft paper is part. This paper is an informal document which publication is intended to provide reference material for the Conference on Oil and Gas in Federal Systems, organized by the World Bank to further the dialogue on development and public finance issues that are common to federal and decentralized petroleum-producing countries. A revised version of this paper will be included in a publication by the Forum of Federations which is expected to be completed by June 2010. The manuscript of this paper has not been prepared in accordance with the procedures appropriate to formally edited texts. Some sources cited in this paper may be informal documents that are not readily available.

1. Overview

Argentina has been constitutionally organized as a federal country since 1853, when the provinces founded the Argentine Republic with a Federal Government.

Since the constitutional reforms of 1994, it is clear that oil, gas and other natural resources of the subsoil are of provincial domain and subject to private exploitation or to state companies only by a provincial concession. The oil and the gas represented 6.5 % of the GDP in 2007 (upstream 5.3 and downstream 1.2). They have always been considered to be strategic resources for the economic development of the country, but the country's reserves are relatively modest.

All three levels of government have some taxing authority on oil and gas. The federal government levies export and import taxes, which it does not share with the provinces, though it must share with them the proceeds of other general taxes, including value added tax, corporation and personal income tax, as well as specific taxes on the sale of fuels. The provinces levy a gross sales tax on commercial activities (a turnover tax in multiple stages), property taxes, vehicles taxes, seal tax on the contracts and other juridical acts. The municipalities impose various fees for services, such as garbage, solid waste and sewerage disposal, safety and health inspections.

The provinces impose royalties on oil and gas production in their territories, while the federal government could impose royalities on offshore production located between twelve and 200 miles from the coast line.

There are some concerns and complains among petroleum producing provinces regarding the effects of federal fuel and energy policies and export taxes. In particular, the federal export tax has de-linked internal and international oil prices, protecting local consumers while reducing royalties' proceeds and undermining incentives for upstream investment.

The major challenge now is to design a long-term federal oil and gas policy that addresses falling reserves and the shifting mix of energy supplies from domestic and offshore sources, in a context where both electricity and transportation have been heavily dependent on gas. The promotion of petroleum exploration and development should be priorities for the competitiveness of Argentine economy and this should be done in a manner that promotes a more coordinated and transparent approach to upstream management, while preserving the provincial domain over oil and gas fields.

I. Historical and regional context of petroleum industry

Argentina cannot be considered a large producer like many other oil exporting countries. It is not an oil country but a country with oil. Its first significant production of oil began in 1907 with the discovery of an important deposit in Patagonia (Comodoro Rivadavia, now Chubut province). There had been some earlier small developments in Mendoza and Salta[1.] Patagonia was a federal territory at the time, without provincial status. The federal government exercised leadership by founding a state oil company YPF in 1922. From the very beginning, a central objective of federal

1 The oil extracted in Cacheuta's locality, near the City of Mendoza, was used initially to produce gas for the urban system of illumination in the XIX century and the oilfield was still producing in the 30s. In Salta oil was discovered in 1906 and exploited by a private company. The Patagonian discovery was more significant that any other in Argentina with large oilfields in 1907, it was discovered by accident while searching groundwater.

policy has been to ensure the domestic supply of gasoline so as to protect the country from the vicissitudes of the international market. Production remained modest until the fifties, but then grew substantially with two big booms in 1958-62 and 1990-99. By 2007, the upstream represented 5.3 per cent of GDP, having peaked at over 6 per cent in 2003; it has been declining since then.

Physical oil production reached an all time maximum towards the end of the nineties, at about double the level of 1970. Production was quite flat in the eighties, prior to deregulation and privatization in the early nineties. During that decade, it grew at an average annual rate of 4.6%, but this has been reversed in the current decade, when production has dropped 20%.

Gas production increased six fold over the last four decades, having doubled from 1970 to 1990 and then doubled again from 1990 to 2004 under the new policies of deregulation and privatization and re-organized pipelines. However, it has been declining in the last three years.

There have been different oil and gas policies over time regarding the role of government, the private sector and fiscal federalism relationships. The petroleum sector's fiscal contribution through taxes and royalties is about $5 billion, which represents about 2% of GDP or 7.5% of all federal tax proceeds.

The fiscal and employment impacts of the upstream are most significant in the ten provinces[2], out of twenty-four, that are oil and gas producers: Tierra del Fuego, Santa Cruz, Chubut, Neuquén, Mendoza, Rio Negro, La Pampa, Salta, Formosa and Jujuy. The following map shows these provinces and the main oil and gas fields in the north, near the border with Bolivia, in the western province of Mendoza, and in the southern area of Argentina.

Oil and gas are produced in scarcely populated areas; so that all the producing provinces together represent only 16% of the country's population. In fact, most of the oil and gas come from the least populated provinces, which are concentrated in the Patagonian region (Tierra del Fuego (0.3%), Santa Cruz (0.6%), La Pampa (0.8%), Chubut (1.2%), Neuquén (1.4%)), and in the North (Formosa (1.4%) and Salta (3.1%), and Mendoza (4.4%)).

About 80% of the country's oil production is from the Patagonia Region, Chubut (26%) and Neuquén (25%), Santa Cruz (18%), Rio Negro (6%) and Tierra del Fuego and La Pampa (3% each). The other 20% comes from Mendoza (16%) and (Salta 2%), Jujuy (0.06%) and Formosa (0.33%), while the offshore represents only about 1%.

About 51% of gas production is located in the province of Neuquén (Patagonia) and 14% in the Province of Salta (near the border with Bolivia). The other producers are Tierra del Fuego (9%), Santa Cruz (8%), Chubut (7%) and Mendoza (5%). The rest comes from off shore (3%) and La Pampa (2%).

Argentine reserves represent about eleven years of current production for oil and under nine years for gas. However there are differences among the producing provinces. In the case of oil, Chubut has reserves for 18.2 years, while Tierra del Fuego and Formosa have less than 6 years. The rest have Santa Cruz 12.4, Rio Negro 11.3, Salta and Jujuy about 10, Mendoza 8. In the case of gas, there are also large variations among provinces, The main producer, Neuquen, has only 6.8 years of reserves, while Salta has 12 years, and Santa Cruz, Tierra del Fuego and Jujuy about 11 years.

Oil and gas are of upmost economic importance in the Patagonian provinces of Tierra del Fuego, Santa Cruz, Chubut and Neuquén (with a very important gas development).

[2] 23 provinces and the City of Buenos Aires.

Downstream facilities are heavily concentrated close to the consumer markets. The principal refinery is outside the City of La Plata, the capital of the province of Buenos Aires. The second largest refinery is outside the City of Mendoza, while others in the provinces of Santa Fe, Buenos Aires and Neuquén.

Graph 1 – Argentina Oil and gas fields

II. Federal context and powers over petroleum industry

Argentina's political roots go back to widely dispersed settlements initially founded by the Spaniards in the sixteenth century. In each of these settlements, local authority was exercised by a Cabildo (Chapter) which was a collegiate body of representative citizens (who in some cases were elected). These "Cabildos" had broad authority to decide on judicial questions, urban issues, police, and the defense of the city and its rural areas. In 1786, the Viceroyalty of the River Plate was organized by the Spanish Crown into eight "Intendencias" (Governorates), which were large territories including several "Cabildos" each.

Argentina declared its independence in 1816. It was formed out of three of the River Plates Intendencias, with fourteen provinces that were transformed "Cabildos" with a very high degree of autonomy. From then, until 1853, there were repeated military confrontations between Unitarians, who had a liberal ideology and favoured a centralized country, against Federalists, who were conservatives with wide popular support favoring provincial autonomy. During this period, there was no national constituted authority and the governments of the provinces delegated their foreign affairs and in some cases even national defense to the governor of the Province of Buenos Aires. The provincial governments signed several agreements expressing their intentions to become one nation. Finally, in 1853 the Unitarian troops of the Governor of Buenos Aires were defeated by a federalist alliance of several provinces in the battle of Caseros. This led to an agreement of the fourteen founding provinces to establish a federal constitution for Argentina.

The new constitution was federal and republican, with a presidential system and a Congress. The legislative power is vested in a Congress composed of two Houses, one of Deputies of the Nation and the other of Senators for the provinces and for the City of Buenos Aires (though the regime was highly "presidentialist", with the president having important powers of decree). The Provinces determine their own local institutions and are governed by themselves. They elect their governors, legislators, and other provincial officers, without intervention of the federal government. Each province enacts its own Constitution, ensuring municipal autonomy and ruling its scope and content regarding the institutional, political, administrative, economic and financial aspects.

Originally Argentina was organized into the founding fourteen autonomous provinces, as well as national territories, under the authority of the recently created federal government, for the unsettled areas. The fourteen founding provinces of Buenos Aires, Catamarca, Córdoba, Corrientes, Entre Ríos, Jujuy, La Rioja, Mendoza, San Juan, Salta, Santiago del Estero, San Luis, Santa Fe, and Tucumán occupied about 65% of the territory.

The Constitution reserved to the provinces all the powers not delegated to the Federal Government, as well as certain other powers expressly reserved to provinces by special pacts at the time of their incorporation. The ownership and management of the oil and other natural resources were not constitutionally assigned to the Federal Government and therefore, were provincial.

Among the powers assigned to the Federal Government are those to enact penal, civil, commercial, and mining laws (codes). The Federal Government was given the unique power to levy customs taxes, and the power to levy indirect taxes concurrently with the provinces. It was also empowered to impose direct taxes for a limited time only and only for national emergency reasons.

In 1862, a law declared that all existing territories outside the limits of the fourteen constituent provinces were national territories administered by the federal government. Another law in 1884 divided these territories and provided each with a government and a federally delegated governor.

The federal government started to settle the southern territory in Patagonia and as well as the north eastern regions of Argentina.

Federal involvement in the development of oil and gas arises from the location of the early petroleum developments, starting with the discovery of oil in Patagonia[3] in 1907, within the national territories. Oil and gas were considered strategic for the economic development of the country and so oil and gas policy was based on federal ownership of energy resources. This position was reinforced during military regimes and even by elected governments of the forties and fifties. In 1943 a decree of the military government declared the main oil field of Patagonia to be the Military Zone of Comodoro Rivadavia and this decree was later on ratified by Congress. In 1949 the government of Juan Domingo Perón enacted a new constitution which provided for federal ownership of all natural resources of the subsoil including oil and gas. When Peron was ousted, this Constitution was repealed. So the 1853 Constitution was re-enacted with some changes; however, these changes did not affect the original principle that the provincial rights over natural resources of the subsoil were not delegated to the Federal Government. These important issues of public policy continued to be discussed for many years, during which the situation on the ground was unclear. Finally, provincial ownership was recognized by a federal law of 1992 (National Law 24145) and fully included in the constitutional reform of 1994, which recognized the provincial ownership over the natural resources of the subsoil.

In the mid-fifties, all the national territories but one were granted the status of provinces. Tierra del Fuego became a province only in 1990. The oil fields of Comodoro Rivadavia were divided between the provinces of Santa Cruz and Chubut.

The federal government continued to administer oil and gas rights and to collect royalties up to 1992, whose proceeds were transferred to the provinces. It was only with the Law 24.145 in 1992 that the management of oil fields was transferred to the Provinces. At the same time, the Federal Government transformed YPF into a purely commercial corporation, with mixed governmental (federal and provincial) and private ownership of its shares. Together, these steps meant that oil and gas onshore fields (and the offshore up to twelve miles) were fully brought under provincial jurisdiction. As a result, the federal direct role is now limited to its ownership of submarine deposits located between the 12th mile and the 200th mile line of the Atlantic Ocean.

The 1994 Constitution explicitly recognized in Section 124.- "…. The provinces have the original dominion over the natural resources existing in their territory" . This constitutional mandate was implemented through Law 26.197

Finally, as part of this new arrangement, the provinces agreed to recognize oil field concessions granted by the federal government prior to the new law of 1992. Provincial rights will be fully recovered at the expiration of the current federal concessions. The renewal of existing as well as new concessions will be totally under the respective provincial authority. In addition the provinces provide royalty and tax stability in respect of the concessions already granted.

The federal role in petroleum development went beyond its control of rights and royalties in the former national territories. It was also exerted through the national oil company, YPF, which was active in the original fourteen provinces as well, where it obtained rights for exploration and

[3] With the exemption of oil and gas development in the provinces of Mendoza and Salta which are among the founding provinces.

development. While private (and usually foreign) companies also appeared, the federally owned company preserved the management control of most development. The Argentine internal market has been practically dominated by YPF[4], now owned by the private Group Repsol; it accounts for 37,6 % of of crude oil production and 29 % of natural gas production, and has 52 % of the country's refinery capacity for gasoline, diesel and other by-products. In addition, it has 50 % of the internal market for these fuels.

Finally, the federal government has had other relevant powers provided by the Constitution, which have given it broad influence over the sector. The National Congress has the power to enact a code for mining and industry, and the federal government is competent for the overall regulation of these activities. The federal government has powers in relation to the trade and transport of oil and gas, including decisions on the construction and control of gas and oil pipelines. Other federal powers include:

- Control of port facilities (shared with the provinces);
- Regulations on the preservation and restoration of the environment (Shared with the provinces)
- Control and regulation of the market and internal prices;
- Taxes on imports and exports (an exclusive right stated in the Constitution and therefore the collection is not shared with the provinces).

As we shall see, the federal use of its power to impose export taxes has recently had a dramatic impact on the petroleum sector. This range of federal powers needs also to be seen in the context of a political system where the national president has traditionally dominated political life, with many levers to influence activity within the provinces.

III. Petroleum revenue arrangements in context of federal fiscal regime

The Argentina fiscal regime comprises federal revenues that must be shared with the provinces, federal revenues that are not shared, as well as provincial and municipal revenues that remain with the provinces and municipalities. The whole system, as we shall see, has frequently been called a "labyrinth". Revenues from the petroleum sector have been a secondary part of the total system, though highly important for some of the main producing provinces. However, the peculiarities of the regime have motivated some clearly dysfunctional federal policies, which are having a depressive effect on the development of the upstream sector. This has been a source of significant tension with producing provinces.

1). Taxes and Royalties on Oil and Gas

As of 2007, upstream and downstream revenues collected by the federal and provincial governments totaled about $5 billion US dollars, representing less than 2% of GDP and about 7.5% of the federal tax proceeds. These revenues had been much more significant in the eighties, reaching a peak of over 20 per cent of federal tax proceeds in 1984, but they declined substantially

[4] YPF means Yacimientos Petrolíferos Fiscales, the original name of the Company. Some provincial governments own shares.

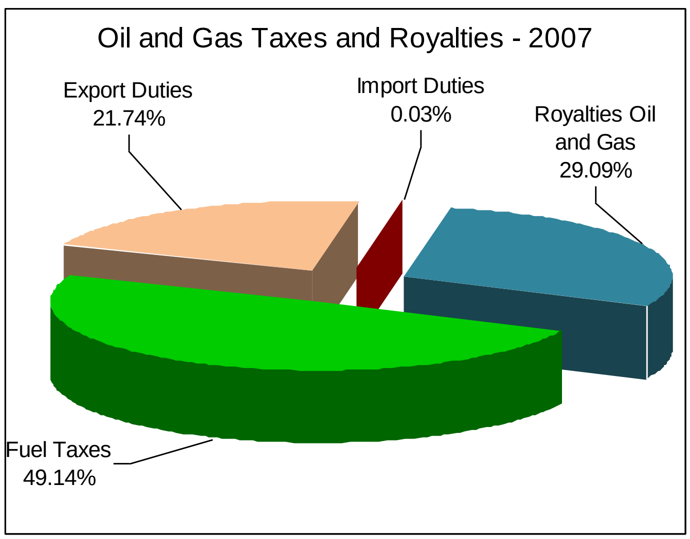
as a result of a tax reform in the nineties, when taxes on fuel were reduced and export taxes eliminated. It is important to note that the government reintroduced taxes on petroleum exports during the crisis of 2002.

Today the provinces collect royalties and also have the legal power to collect taxes on economic activities and assets, like the gross sales tax, property tax, vehicles, seals tax on contracts and other transferences. In addition they participate in the federal taxes proceeds with the exception of those from export or import taxes.

The federal government collects taxes on petroleum exports and imports, and a tax on the sales and transferences of fuels, the value-added tax and the income tax. Likewise, the federal government charges royalties for the production of oil and gas in the territorial Argentine sea between 12 miles and 200 miles of the coast and rights of exploration in the same area.

Graph 2 shows the proceeds and relative importance of specific petroleum revenue streams, excluding general taxes such as VAT and corporate income taxes

Graph 2 - Oil and gas taxes and royalties (2007)



Of the $5 billion in total proceeds from the sector, about half is the fuel tax downstream. The two major revenues of significance to the upstream are the provincial royalities (29%) and the federal export tax (22%). The federally collected fuel tax is shared among the federal government and all 24 provinces. The export tax need not be shared by the federal government. And only the producing provinces benefit from their royalties.

In fact, four provinces collect about 85% of total royalties paid on oil and gas, namely Neuquen 35%, Chubut 21%, Santa Cruz 16% and Mendoza 13%. These royalties account for over a quarter of all provincial current public revenues in Neuquén (42,6%), Chubut (35,5%) and Santa Cruz (26,9%).

The relative importance of oil and gas royalties as a percentage of provincial current public revenues varies from 34% in Chubut, 26% in Neuquen, 24% in Santa Cruz, 12% in Mendoza, 10% in Rio Negro to 8% in Tierra del Fuego. Gas royalties are very important in Neuquen, representing 17% of their Provincial current public revenue, while they are 6% in Salta and 5% in Tierra del

Fuego. As for the rest of the gas producing provinces, gas royalties represent less than 3% of their current public revenues.

2). Resolution of Conflicts

When the provinces and federal government are not in agreement over the sharing of taxes collected by the federal government, the cases can be solved through administrative procedures as a first instance or appealed to the Supreme Court. Usually such disputes involve the formula for sharing a general tax, such as the fuel tax. There was such a disagreement at the end of the eighties over the allocation by the federal government of fuel tax proceeds and the provinces filed a complaint with the Federal Tax Commission which is responsible for the interpretation of the Federal Tax Sharing Law. The Commission ordered the federal government to transfer to the provinces their share and the federal government complied.[5]

At the beginning of the nineties, there were two conflicts over sharing revenues related to the upstream. The first was over proceeds from bids for oil and gas field concessions in marginal areas and the second was over the appraisal of royalties paid by YPF to the provinces. In the case of the YPF royalties dispute, YPF had always paid royalties to the provinces but the provinces complained that the amount was underestimated. The petroleum provinces initiated legal actions through the Supreme Court of Justice against the federal government. The Supreme Court called for an audience of reconciliation.

The Menem Administration recognized the provincial domain over oil and gas fields, and wanted to deregulate the sector and privatize YPF. The provinces agreed on compensation by the federal government for their claims on royalties due from YPF through federally issued bonds, along with an option to buy YPF shares at the time of privatization. The agreement between the producing provinces and the federal government became the basis for the Law 24.145 establishing the privatization of YPF and explicitly recognizing the provincial domain on oil fields. The support of the oil and gas producing provinces was crucial to achieving the necessary votes in Congress and the law was enacted on August 1992.[6]

Today, the large number of private companies with oil and gas rights has required the petroleum provinces to work together on such issues as the collection of royalties and assessing opportunities. The provinces of Formosa, Jujuy, Salta, Mendoza, La Pampa, Neuquén, Río Negro, Chubut, Santa Cruz and Tierra del Fuego have established the OFEPHI, (Organización Federal de Estados Productores de Hidrocarburos) where they discuss and analyze oil and gas issues including legislation, the royalties clearing system, relations with the companies and the sector's bodies, and the administration of sector legislation. It provides a forum for the discussion of future policy challenges, such as the harmonization of legislation and transparency for the renewal of oil and gas field concessions. Since the concessions granted by the federal government will expire in about 5 years, the renewal will be the responsibility of each province.

The drop in reserves is a cause of concern, especially when a large proportion of electricity generation depends on the availability of gas. There were restriction on the industrial use of gas and

[5] The resolutions of the CFI only could be reversed by means of an appeal before the Supreme Court. Though the Nation appealed, the Court called to conciliation and the national government had to comply with the resolution of the Commission.

[6] For example, the Province of Mendoza got bonds for $ 647 million, which, the quote of the same ones in this moment there were overcoming the U$S 250 million. The major petroleum provinces received similar amounts.

electricity during the winter (June to September) of 2007,as well as limitations on exports to Chile. This experience showed that energy supply can be a binding constraint to growth of industrial production and highlighted the need for coordination of oil and gas producing provinces policies within a federal planning framework. The challenge of future industrial development requires increasing petroleum exploration and development as well as the search for alternative renewable sources.

The oil and gas concessions granted in the 90s are about to expire in the next five years so the provinces need good estimates of reserves before calling for bids. A coordinated action will strengthen each individual province negotiating position. Future political debates will be more on the need of coordination among provinces or a federal oil and gas policy rather than on the provincial domain as it was prior to 1994.

3). Export taxes.

In 2002 Argentina was in the midst of a dramatic financial crisis which brought together a fall in the prices of its principal exports, a deep recession, a drying up of international financing, and major capital outflows. The new government, in order to finance temporarily the fiscal deficit, introduced export taxes on the country's commodity exports at a time when their prices were recovering.

However, very quickly these revenues became an important part of the federal government finances, especially given the gap between the recovery of the economy and other tax collection. Moreover, these export taxes were particularly attractive to the federal government in that they did not have to be shared with the provinces and were excluded from the revenue sharing regime.

At the same time, royalties received by the producing provinces depend both on production volumes and price. Prices are set on the basis of an international reference price, adjusted for the quality of oil, net of export taxes minus the cost of transport; as described further in this section, this international reference price is below world prices.[7] A slightly different procedure is applied for natural gas, based on the price in the respective sales contract minus costs of transport, treatment and the different levels of compression of the gas. Finally a 12% royalty is levied for both oil and gas.

Nevertheless, in recent years the federal government has strongly intervened in the internal market for fuels. It has decoupled domestic prices from international prices and managed domestic prices through a tax on exports since 2002; it has also imposed regulated fuel prices in the domestic market. This tax became even more progressive in 2007 to the point where the marginal rate became 100% above a certain international price level. The federal regulation of November, 2007 established a regime with a "reference price" of $60.90 per barrel and a "cut price" of $42. When the international price is higher than the reference price, the rate of tax increases so that the exporter receives only $42; when the price is between $42 and $60.90, the tax is 45% of the "cut price" of $42, that is the tax becomes fixed at $18,90 per barrel. Should the price fall below $42, the government will establish a new tax rate.

While the federal government achieved its goal of decoupling domestic prices from the international market, the provinces have been hit hard because the domestic price used for royalty

[7] This price has a ceiling of US$ 42 per barrel under the export variable levy scheme as explained in this chapter.

calculation has a ceiling of $42. This tax scheme has also discouraged oil companies from exploring for more oil and gas, so there has been a decrease in reserves.

There was some inflation after the 2002 devaluation although it was limited by regulated prices on energy and other public services, and also because there was significant idle capacity in most economic activities. While the national economy recovered steadily after the crisis, certain government mandated market distortions and the high growth of the public expenditure brought on serious inflation in 2007. This was a major setback because Argentina had had practically no inflation since the introduction of the exchange rate convertibility regime in 1991.

With this procedure the government has a double objective: decoupling of the internal prices from the international ones and capturing an important share of the petroleum revenue. For each dollar of federal export tax the provincial royalties decrease by 12 cents.[8]

Argentina is an exporter and importer of gas, importing from Bolivia in the North and exporting to Chile in the South.[9] The increase in the export tax rate on gas is designed to reflect the increment in the import price of gas, and gas is not included in the variable export tax rates established for oil.

The federal government tried to implement a similar system of export taxes for agricultural commodities, such as soya and beef. This provoked a huge political resistance with farm and transportation strikes and large demonstrations and protests in rural and urban areas, including large cities. It was the first big popular resistance to a tax and the President suffered a substantial loss in popularity. Her administration was defeated in the Senate, by the vote of the Vice-President, in its attempt to get the progressive export tax rate scheme on agricultural exports passed. The government's ability to succeed in imposing the scheme on petroleum exports reflects the popularity of controlled fuel prices and the weakness of the petroleum producing provinces, which account for such a small share of the population.

The export taxes on oil put the federal government in a "catch 22" dilemma because if the federal government reduces the rate, which would provide an incentive to explore for new reserves or accede to the complaints of oil provinces that the export tax erodes the royalty proceeds, the rate of inflation would rise, as the price of fuels absorbed international oil prices.

4). Sharing Oil and Gas Taxes between Federal and Provincial Levels, the labyrinth.

The sharing of oil and gas taxes within Argentina's federal regime needs to be seen with the larger context of a labyrinthine system of federal, provincial and municipal rights and obligations regarding the collection and sharing of different taxes. While the federal government is by far the largest collector of taxes and other revenues, some of these must be shared with the provinces or be directed to special purposes or both. This system creates incentives for the federal government in particular to favour certain revenue sources where it need not share the proceeds with the provinces and municipalities. Moreover, the system has proven very resistant to reform because of its complexity and the fact that any new regime would entail winners and losers.

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[8] According to some estimates Mendoza will lose 76 million dollars in 2009 because of the export tax. <http://209.85.229.132/search?q=cache:FM5JKJ4QV9kJ:carlosaguinaga.com.ar/2009/07/regalias-petroliferas-en-jaque/+cuanto+perdieron+las+provincias+por+la+resolucion+394&cd=1&hl=es&ct=clnk&gl=ar>

[9] From January to October 2009 gas exports were 610 million of cubic meters for a value of 232 million dollars FOB while imports were 1,172 million cubic meters for a value of 102 million dollars CIF

We have seen that under the Constitution, taxes on exports and imports are exclusive to the federal government; indirect taxes can be applied concurrently by both levels of government and direct taxes are reserved to the provinces though the federal government may impose them for reasons of emergency, defense, security and general welfare (and in fact it has done so on a continuing basis). The constitutional reform of 1994 established that direct and indirect federal taxes are to be shared with the provinces, with the exception of those that are specifically allocated for a distinct purpose.[10]

While the general fiscal principle of the 1853 Constitution was that there should be a "separation of sources", in practice the federal government established its first internal taxes only in 1890, when it needed extra funds to deal with a serious economic and political crisis. From then on, the federal government began applying taxes to production and to various consumption goods (tobacco, alcohol, sugar, wines, luxury goods, etc).This situation of both the federal and provincial governments applying indirect taxes, often to the same object, continued up to the Crisis of 1930. That led to a reform of the regime in 1932, whereby specific indirect taxes on the production, trade and consumption of diverse goods were taxed by the federal government while a share of the proceeds was distributed according to the level of consumption or production in each province. At the same time, a regime of direct national taxes (initially on incomes, but in due course also on personal assets) was established for a limited period of time. The sharing coefficients were approved by all provincial legislatures [11]and in exchange for vacating these areas of taxation the provinces were given a share of the federal tax proceeds. Taxes on fuel sales also appeared as part of these reforms; however, these were shared with the provinces as a specific allocation to highway investment and maintenance.

Thus, under the new regime, the federal government collected most taxes but they had to be shared with the provinces. A peculiarity of the regime was that the sharing arrangements amongst provinces differed according to the revenue source.[12] A major exception was that the federal government did not have to share its traditional revenue source from export or import taxes.

We turn now to taxes on hydrocarbons. The principal downstream tax is that on liquid fuels and gas dating back to the thirties. This is shared with the provincial governments according to a specific formula, which is currently that 21 per cent of the revenue goes to the National Health Service and the remainder is split 60-40 between the federal and provincial governments. Much of what goes to the provinces and the federal government is allocated to specific funds, such as the National Housing Fund (FoNaVi), the Federal Road Fund (administered federally by the National Highways Agency and provincially by their own agencies), the Water Infrastructure Fund, the Electrical Infrastructure Fund, the Transport Fund (FCT), the Fund for the Electrical Development of the Interior (FEDEI). Several of these funds receive contributions from the tax on electric power.

Of course, oil and gas companies are subject to normal taxes of general application, such as personal and corporate income tax and the value added tax, the proceeds of which are also shared amongst the federal and provincial governments according to the revenue sharing system. However, on oil and gas exports there is a rebate of the value added tax. The provinces for their part also apply general taxes on hydrocarbon activities: the stamp tax (on the amount of the contracts and

[10] The revenue sharing law 23,548 of 1988 established a similar concept.

[11] IIn the case a given province does not agree it continue with the previous regime.

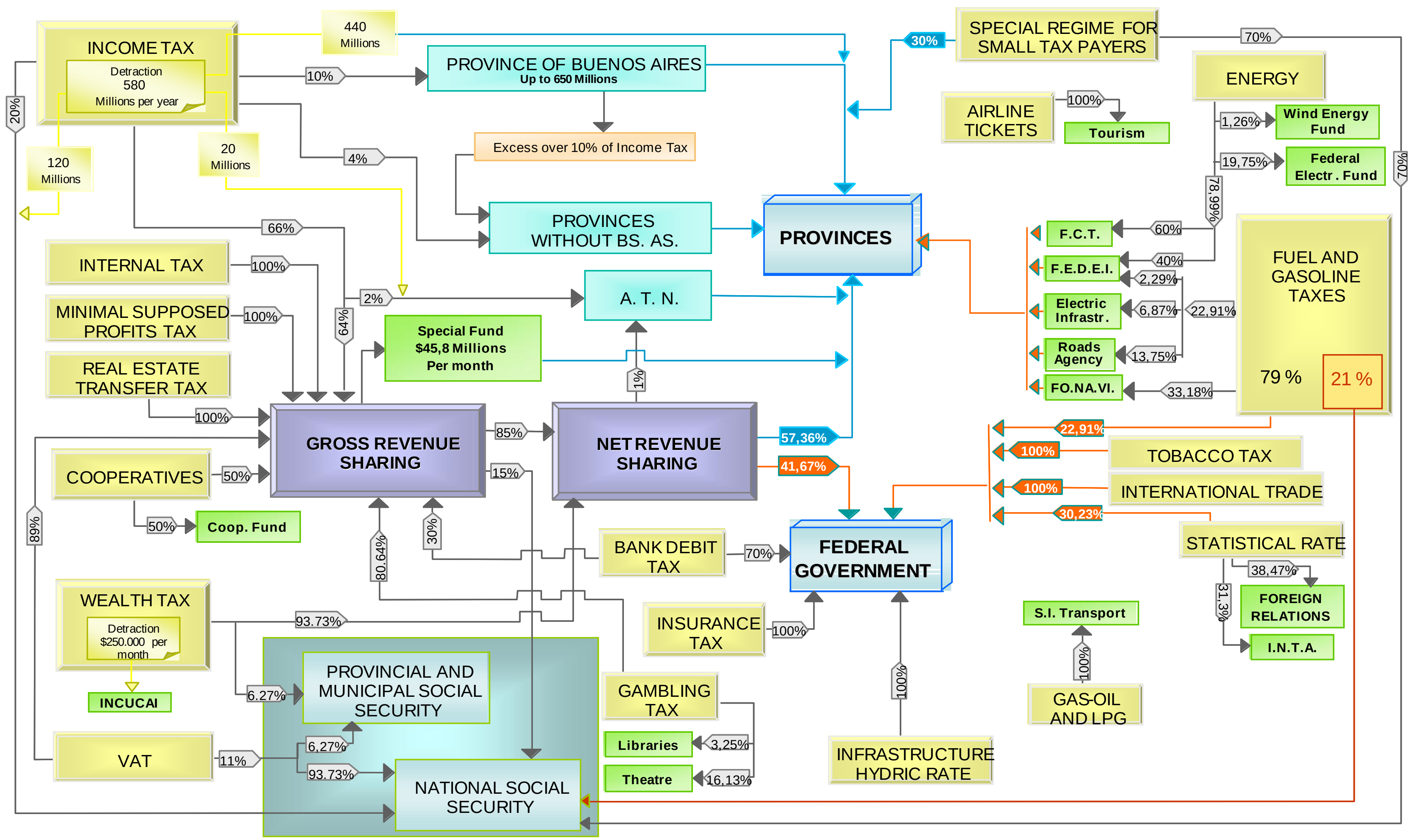
[12] For example the VAT and Income Tax are distributed in different proportions.

other juridical acts) and a gross sales tax (a turnover tax), as well as a tax on real property, such as land, buildings and vehicles.

By far the most import taxes on the upstream are royalties and export taxes. The provinces receive royalties on oil and gas production (as does the federal government for the offshore beyond 12 miles). The federal government receives the export tax (as well as an import duty, which is currently minor in the case of petroleum).

This complex system of distribution is illustrated in Graph 3 below. As discussed above, such a "labyrinthine" configuration of distribution rates for different revenue sources is not unique to the hydrocarbon sector, but applies generally. The current federal fiscal regime for sharing largely dates from 1988, but there have been a number of subsequent modifications since then. These are done by agreements among the federal and provincial governments and must be ratified by laws at both levels of government. Even so, the system is difficult to modify. Thus, the law on tax revenue sharing dating from 1990 should have been modified given that it was meant to be provisional for two years; the law contains an automatic extension to avoid a legal vacuum, such as occurred in the second half of the eighties. Because any change would produce winners and losers, it has proven impossible so far to find a new agreement that would establish a more stable and simpler system, based on the objectives for sharing set out in the 1994 constitutional text, namely equality of opportunity and an equivalent degree of development across the whole federation.

Graph 3 - Argentina: The Revenue Sharing Labyrinth



IV. Macro-economic challenges

1). The argentine economy in the last three decades

Unlike those countries where oil and gas dominate the national economy and government revenues, in Argentina macroeconomic challenges have affected the oil and gas sector much more than the oil and gas sector has affected the macro economy. In particular, petroleum policy has been strongly influenced by the macroeconomic goal of avoiding inflationary pressures. Given the importance of energy prices for price indexes more generally, the federal government has looked for ways to decouple domestic and international prices through administered energy prices and export taxes.

Democracy was restored in Argentina with the end of the military government in 1983. The Argentine economy is very exposed to international markets, both because of its dependence on commodity exports and its vulnerability to capital movements. The economy has been very cyclical, because of international cycles and changing domestic economic policies. At the end of the eighties, there was hyperinflation which reached 200 per cent a month by mid 1989. This provoked the early exit of President Raúl Alfonsín and his replacement by the elected president Carlos Menem.

Fiscal deficits have been a chronic challenge. For many decades, Argentina's economic structure was marked by industrial protection and the strong presence of numerous state companies both in strategic sectors (railroads, telephones, post office, airlines, oil, gas, mining industry, steel, arms, sanitary services, etc.) and in other economically less relevant sectors (such as radio stations, hotels, manufacturing of regional productions, etc.). Most state owned companies ran deficits with a significant impact on the already very high federal budgetary deficit.

In 1989, the new Menem government faced challenges in relation to economic stabilization, state reform, privatization of state companies and the deregulation of markets. After a few unsuccessful attempts, economic stability was achieved by the adoption of a monetary regime by which the peso was fully convertible into dollars at a fixed rate. The Menem government was also able to move forward on state reform and the privatization of state companies because the vast majority of people complained about the inefficiency of public services, the corruption in state companies and the high fiscal deficit. Thus a process of privatization of state companies began, including the privatization of some highly symbolic companies, such as the state gas company and the state oil company, YPF. At that time it was said that YPF was the only petroleum company of the world reporting losses. It had too many employees and huge losses and within a year of privatization it was down to about a tenth the number of employees and reporting profits.

Argentina's economic stability was maintained until the end of the decade, despite such tests as a speculative initial run against the peso (1991) and the Mexican crisis (1995). Nevertheless, the fiscal situation was still problematic and, except for a couple of years, the combined federal and provincial budgets were in deficit. The governments paid for this with public debt[13] issues, which were heavily external and denominated in foreign currencies.

The country's economy was weakened by an accumulation of international events. The Russian crisis of 1998 affected international capital markets. The Brazilian devaluation of 1999 damaged Argentina's competitiveness with its major trade partner in Mercosur. The fall of international commodity prices hit the main Argentine exports. Through all this, all tiers of government, with the exception of a few provinces, had very high public debt.

The process came to an end on December 2001, provoking the fall of the government of President Fernando De la Rúa. The monetary convertibility regime ended and Argentina declared default on the national debt, most of which was in foreign currency. The peso was devalued by more than 200 per cent.

2). The international financial crisis and fiscal issues in Argentina.

Argentina recovered remarkably quickly from the crisis. Booming international markets for commodities increased the prices of Argentine exports measured in dollars: an indicator published by the Central Bank[14] showed a tripling in the terms of trade from a level of 66.9 in January 2003 to an all time maximum of 227.3 in July 2008. [15] Annual growth was between 8 and 9 % from 2003 to 2007, and governments showed a substantial fiscal surplus, beyond what was needed to service the national debt under the terms that had been renegotiated, largely in 2005. However, the global slowdown in 2008 saw economic growth in Argentina decline.

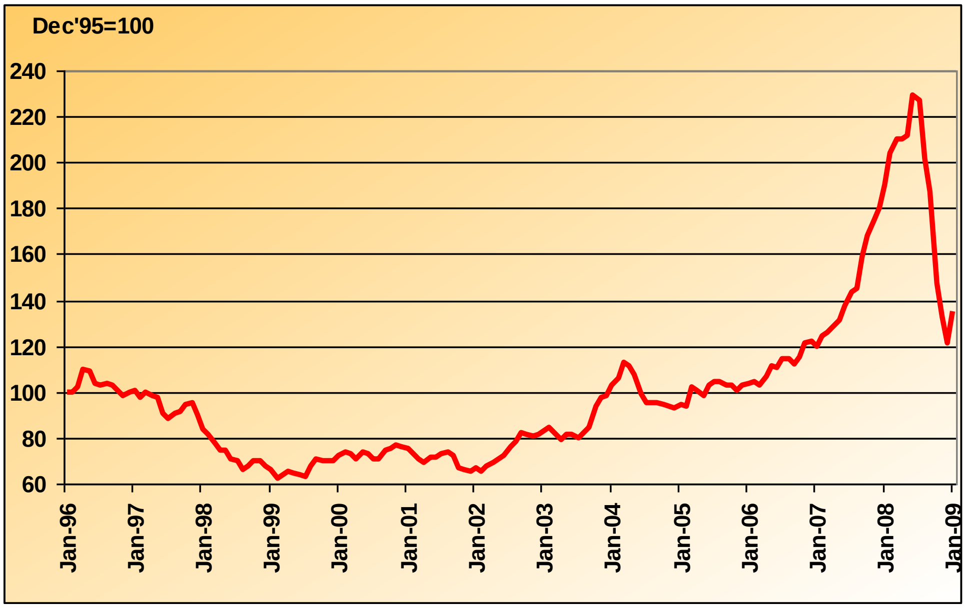
While the general economy was booming, the oil and gas sector was disadvantaged. From 2002, it was subject to a ceiling on the prices of energy and public services. Pricing policies for the sector were much debated, with the fiscal and investment issues being foremost, but there was no significant change.

Graph 4 - Commodities international price index (in US dollars)

[13] It must be admitted, nevertheless that a share of the deficit was caused by payments of a debt originated in previous periods and that had been recognized and formalized at this time for example the social security debt.

[14] On the basis of the relative importance of commodities exports and its dollar price at the international market the Central Bank calculates a Laspeyres index with a base Dec 1995 = 100.

[15] Source: http://www.bcra.gov.ar/pdfs/indicadores/IPMPMetodologia.pdf Gerencia de análisis Macroeconómico del Banco Central de la República Argentina, Published in Índice de Precios de las Materias Primas, March of 2008.



Source: Gerencia de análisis Macroeconómico del Banco Central de la República Argentina, Published in Índice de Precios de las Materias Primas, March of 2008. http://www.bcra.gov.ar/pdfs/indicadores/IPMPMetodologia.pdf

Since 2008, the international economic crisis, with dramatic drops in some commodity prices, has contributed to a notable drop in the fiscal surplus of the federal government, with much lower collections from export taxes on hydrocarbons and their derivatives and on agricultural products. The federal fiscal surplus risks turning into a deficit soon, so the government have moved to cut public expenditure. A key target has been subsidies to companies providing public services (electricity, gas, water and sewer, transport), which have been forced to raise the tariffs their customers must pay. Since these cuts were not sufficient, the executive submitted a project to the Congress, which was enacted on December 2008, expropriating pension funds and therefore the resources of the pension funds.

Thus, Argentine fiscal policy has not been expansive going into the recession. The country has been unable to implement a counter-cyclical policy, as have some other countries, because of the risk of stoking inflation or stimulating capital outflows. The story would have been different if there had been a significant reserve in a fiscal stabilization fund, as had been provided for in the so-called "fiscal convertibility" law of 1999 and the federal fiscal responsibility law of 2004. But these funds never materialized.

3). Fluctuation of commodity prices. Fiscal Stabilization funds[16]

Given the relatively modest size of its resource sector, a stabilization fund in the Argentine case would be quite different from those focused on oil and gas revenues in Mexico, Norway,

[16] Zapata, Juan Antonio. A., *Study of Argentina Stabilization Funds and some international comparisons*, paper prepared for the Forum of Federations April 2008.

Nigeria and Russia and on copper in Chile. Rather, the idea in Argentina was to have an anticyclical fund based on general tax proceeds in recognition of the cyclical nature of the economy in part because of fluctuations in the value commodity exports, including importantly agricultural commodities. Stabilization funds have become more significant in the last decade as a way to mitigate the impact of volatile public revenues on public expenditures.

Saving funds are different from stabilization funds in that they accumulate a reserve of wealth so that future generations may receive some benefit from the depletion of non-renewable resources by today's generation. Such a fund may also be designed to help with revenue stabilization. Governments can manage both types of funds in parallel. In some cases, stabilization funds have evolved into savings fund as reserves have increased through time.

Argentina's Fiscal Convertibility Law of 1999 provides in article 9 for a fiscal stabilization fund. The Ministry of the Economy and Public Works and Services was to manage it. Six of the 24 provinces—all significant oil or gas producers— also created their own stabilization funds under their own fiscal responsibility legislation. Unfortunately, these institutions have not been used effectively to accumulate significant reserves. The automatic fiscal integration of the federal fund was suspended almost immediately on its creation, so that it was limited only to the revenues from federal oil and gas concessions, which are insignificant. Some provinces did continue with their own funds although currently no provincial fund is significant.

V. Environmental and social issues

The management of the environmental impacts of oil and gas development in Argentina needs to be seen in relation to the two major periods of the broader management regime: the first was before the privatization of YPF, when the federal government was issuing and managing concessions for exploration and development; the second was after privatization and the agreement of 1992, which recognized federal concessions to that date, but transferred responsibility for managing them and issuing new concessions to the provinces. Experts believe that companies are more careful about environmental issues today that they were under the old system.

In the first period, controls were minor—in part because YPF was a state company—and there was considerable environmental damage. This created liabilities that still persist though gradual efforts are addressing them and plans are being prepared for the slow recovery of soils affected by spillages of oil and toxic waste. The authorities at the time permitted the burying of such soils and waste, without proper containment, so that toxic wastes have escaped to contaminate local waters and soils. This has forced expensive recovery operations.

In the second period, severe controls were imposed, not only on the part of the environmental national authority but also by the different provinces. The companies are forced to apply international standards (the ISO norm 14001). Thus, under current rules, for example, any spillage of crude oil must be reported at once and immediately addressed, to avoid damaging effects on the environment, health or farm activities. Affected areas must be returned to their previous condition. [17]

[17] The Argentine Constitution, reformed in 1994, has incorporated in Art. 41 the right and duties of the environmental protection: " All the inhabitants enjoy the right to a healthy, balanced, suitable environment for the

Rules now absolutely prohibit the former practice of burning affected soils, which can pollute the atmosphere. Gas venting and flaring are controlled, but subject to diverse rules. Flaring of gas associated with oil production can be a safety procedure, though it does cause atmospheric pollution. Such flaring is now either avoided or reduced to the minimum, the exceptions being when the gas cannot be directed to a gas pipeline or be separated and reduced to liquids. Thus venting and flaring have become rare. If there is an accident and gas leak, for example when repairing a gas pipeline, it must be controlled immediately and, if necessary, burned at the site of the leak.

As for social problems associated with petroleum development, perhaps the most significant was associated with the fallout from privatization of the state company YPF. While demanded by the population and required by the economic circumstances of the eighties, there was a tremendous reduction in personnel and outsourcing of numerous connected services. While terminated employees were guaranteed various indemnities, and many ended up being hired by the spinoff companies that were created to provide outsourced services, some delays in honoring government obligations resulted in litigation (e.g. over payments due to employees for stock participation).[18]

VI. Transparency and accountability

Issues of transparency, accountability and corruption were most problematic during the period when YPF was a state company. The new period was marked by transparent processes of public international bidding and appropriate legal guarantees; the privatization itself was done this way and so was the issuance of new concessions. While the process of issuing concessions in the 90s seems generally clean, there are some unresolved cases before the courts. Today there are no good estimates of reserves so there may be several questions about whether the process for renewing concessions as they expire will be truly transparent since companies that are not currently holding the concession will be in disadvantage.

There seems to be no problem of corruption with statistics relating to production, tax collections and payment of royalties and there are appropriate auditing procedures in the oil and gas provinces.

If there is a fault in this process, it relates to the control of prices. The subsidies to oil and gas consumption have been partially concealed, through the export tax, which has led to some reduction in the payment of royalties to the provinces by the operating companies.

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human development and in order that the productive activities satisfy the present needs without compromising those of the future generations; and they have the duty to preserve it. The environmental damage will generate as a priority the obligation to re-compose, the law establishes according to it. "Already previously law 19.587, which refers to the protection of the environment and to the human health, established the maximum volume of venting allowed.

[18] For the privatization of YPF, 10 percent of the share capital was reserved by the Federal Government to YPF's staff. The government continued managing these shares and had to pay cash when selling the shares. There are litigations going on today on this issue.

VII. Discussion and conclusions

Argentina is not a petroleum country comparable to truly oil rich countries Nevertheless; oil and gas are of strategic importance for the economy. A central aim of national energy policies has always been to maintain self-supply of these fuels, which are indispensable to Argentina's power generation and transportation needs.

In the 1990s, the oil and gas sector was subjected to fundamental institutional reforms in the areas of privatization and deregulation, which attracted very large private investments. Moreover, a federal law in 1992 and then a constitutional reform in 1994 explicitly recognized provincial ownership of natural resources in the subsoil, including oil and gas.

Within Argentina's federal fiscal regime, access by governments to oil and gas revenues and rents depends on a complex tributary system derived from the different legal authorities of the three tiers of government: this reflects basic constitutional principles as well as the many agreements signed between provinces and the federal government.

The provinces collect royalties on oil and gas and have the legal power to collect other taxes on economic activities and assets, like the gross sales tax, property tax, vehicles, seals tax on contracts and other transferences. In addition they participate in the federal taxes proceeds with the exception of those export or import tax proceeds.

The federal government collects fuel taxes and shares the proceeds with the provinces. Most importantly for the upstream sector, it also collects taxes on export and imports and these are not sharable. The federal government has used the export tax to decouple internal oil and gas prices from international prices and thereby to acquire an important share of petroleum revenues or rents. The provinces own the resource and can collect royalties, but the export tax reduces the size of their royalties, because the royalties are net of export taxes. This may become a source of litigation by producing provinces against the federal government.

This system of controlled prices and onerous export taxes has discouraged upstream investment, especially in exploration, with a consequent reduction in known reserves. Many academic experts as well as leading businessmen and politicians are debating what to do about the decrease in production, exports and reserves of oil and gas. One alternative may be to move to international oil prices, but to tie that to a genuine stabilization fund. The broader issue is finding an approach to oil and gas pricing that encourages long-run investment and competitiveness in the sector, while dealing with the fiscal fallouts in the federal system.

The drop in reserves is a cause of concern, especially when a large proportion of electricity generation depends on the availability of gas. The provinces badly need good estimates of reserves before calling for bids on new oil and gas concessions in order to get more fiscal resources, transparency and more competition for the oil fields. Future political debates will focus more on the need for a coherent federal oil and gas policy rather than simply on who gets what tax or revenue from production.

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