Oil Wealth and the Resource Curse in Venezuela

By Carlos A. Rossi*

"The overwhelming presence of oil did act, indirectly, to deform the economy and national life. Privilege sectors of the population began to acquire the mining mentality of newly rich spendthrifts. The uninterrupted flow of dollars encouraged imports and expanded commerce to such a degree that the nation became primarily a consumer of foreign products. We began to appear too much like that chaotic California—the paradise of adventurers and thieves—during the days of the gold rush."

Romulo Betancourt, Former President of Venezuela 1945-1948, 1959-1964.

The objective of this paper is to argue that regardless how well endowed a country may be in natural resources and how long it has been in the business of producing and exporting this natural wealth, that without the right economic policies implemented by strong and courageous policy makers, the monetized revenues of this oil wealth will not render prosperity for the majority of the people in the country.

Furthermore, it is also argued that there are well defined economic elements that interplay with the prevailing historical and socio-cultural country specific factors that render the monetization of the oil wealth into undesired results, commonly referred in the economic literature as "Dutch Disease" or more appropriately "Resource Curse". Further, that given the extensive study that has been done in this area this disease or curse can be dealt with appropriately with political and economic measures that do provide favorable results in productivity and general prosperity. Last, it is also argued that in the case of Venezuela the economic policies applied since the nationalization of its oil wealth and exacerbated in this century have aggravated the resource curse problem to the point that it is fair to conclude that oil wealth has crippled Venezuela and made it into an unproductive and rent seeking society.

Venezuela's Oil Wealth

Although at the end of the 19th century Venezuela had already experimented timidly with asphalt residuals in the northeast and even exploited a small oil field in its Andean region, it was not until the early part of the 20th Century that Venezuela burst onto the international scene with its oil production. The most salient features were:

- The Geological study conducted between 1911 and 1916 by the oil company General Asphalt-Caribbean, soon a subsidiary of Shell, that covered 25 million hectares of Venezuelan territory from east to west discovering, among others, the large Menegrande field in 1914 in the western state of Zulia. This led to more and more discoveries in this extremely fertile state.
- The explosion of the Barrozo 2 field in late 1922 (100,000 bpd in the first 10 days). This gave a green light to more exploration and bigger discoveries in the Zulian fields of Lagunillas (1926); Tia Juana (1928) and Bachaquero (1930).

The historical summary can be summarized as: It was thanks to the multinational corporations that oil was discovered in the oil basin of Lake of Maracaibo. In 1917 the first refinery of the country was built; five years later, in December of 1922, the Barroco 2 oil well "exploded" with 100,000 bpd; in 1926 Lagunillas was discovered, also in the Maracaibo Lake, the biggest oil field in the world at the time. In that same year petroleum became the country's first export item and in 1929 Venezuela became the leading oil exporter of the world, a position they would hold for no less than four decades up to 1970 when Saudi Arabia passed it.

The oil wells found and exploited in Zulia are still producing but are all in steep decline. These are mostly light and medium oil with an API grade over 25. To compensate for this shortfall, Venezuela plans to develop another huge reservoir, the largest remaining in the world, called The Oronoco Oil Belt. Given its importance it is prudent to describe its properties briefly.

The Orinoco Belt was discovered by the middle of the 1930's, but given its extra-heavy and high sulfur and metals content, it was not given any importance and abandoned as the companies preferred other cheaper and cleaner fields.

It is vast. 53,314 KM^2; 700 kilometers long and with width that goes from 32 to 100 kilometers. For reference, if we added the total area of Belgium and Israel it would come out short by more than 2,000 KM^2 of filling the Orinoco Belt. It has been estimated to contain over 1.3 trillion barrels of oil in place, more than what humanity has consumed so far. It is geographically plane and virtually uninhabited leaning on small cities and neighboring towns such as Ciudad Bolívar, El Tigre, Anaco and Maturín. It has a warm climate, shallow depths, high porosity sands and access to pipelines,

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See footnotes at end of text.

terminals, refineries and ports of the Caribbean. But it is extra heavy, viscous oil with API grades that average between 8 and 9. Because of this high viscosity, the recovery factor is very low, ranging between 7 and 9%. However, there is ample room for improvement as an in depth study conducted by the USGS and released in 2009 reveals.[1]

> *"The US Geological Survey estimated a mean volume of 513 billion barrels of technically recoverable heavy oil in the Orinoco Oil Belt Assessment Unit of the East Venezuela Basin Province; the range is 380 to 652 billion barrels. The Orinoco Oil Belt Assessment Unit thus contains one of the worlds largest recoverable oil accumulations".*[2]

Professor Barbierii describes it:

> *"Geologically is in the south part of the Maturín basin to its west, and geographically it has been given the name Orinoco because its southern limits are along and close to the river…very characteristic of the mechanics and behavior of the production of the fields of heavy crude is that its initial removable volume is between 3 and 10%. However even in this case, in the phenomenon of the Belt, given the immense figure of petroleum in place, the primary extraction runs between 30 billion and 100 billion barrels. Moreover if through the application of enhanced oil recovery methods (for example the injection of vapor) are possible to duplicate the primary extraction, then the volume producible would be between 60 billions and 200 billion barrels. This figure will be appreciated better when it is compared with the 46,4 billions of barrels of all type of crude oil that has taken place in Venezuela during seventy seven years (1917-1994)"*[3]

The Orinoco Belt has been divided into four large regions, all of which have names of the most famous battles fought in the independence wars in the Andean region. It is important to keep in mind that the four projects that exist today in the Orinoco Belt are the product of the Apertura Program enacted in the 1990's which produced at its height a combined 630,000 bpd.

The Belt originates in the eastern basin of Maturín, an extremely rich area in hydrocarbons and supplier of most of the production of Venezuela at present and, through the centuries of formation, it migrated towards the south and upwards until colliding with a gigantic trap in the skirts of the biggest river in the country. In its long and winding road this oil found a lot of geologic garbage, especially sulfur and metals that mixed with the molecules of the crude oil and changes and thickens its composition to a heavy crude oil thus worsening its quality and fluency. The further south you go, the worse the quality (5-6 API) gets but the north area is lighter (12-16 API). Towards the 1970's when PDVSA began to detect depletion in the traditional fields of Maracaibo it ordered some exploratory drillings in the Belt. But it was not until the end of the last century that interest in the Belt truly began as oil companies, faced with depletion all over the planet, decided to take another look at the Belt. Helped with the technological advances in production, upgrading and distribution, the companies agreed to form strategic associations with the Venezuelan Government in the Apertura Oil Opening. This was when we first begin to see huge investments and later production flow in the Belt fields. With around 2000 perforated wells so far and with certification in process, the Orinoco Belt now places Venezuela at the center of the energy focus.

The long term target recovery factor is in the order of 20%. At the moment this factor is between 6% and 11.8% with an average of 8.4%, and it is projected that soon this will increase to 12% when hot production techniques (SAGD) are implemented. The majority of the wells have used horizontal drilling techniques that will help in increasing the recovery factor to the desired targets. Production costs, however, are deemed steep in the initial stages, given the expensive upgrading facilities that need to be built to process the synthetic oil, plus the refineries, pipelines and port facilities. Material costs in drill bids and rising prices in steel and other inputs are also projected to escalate, especially since new competitors are on the rise (Brazil, Colombia, Gulf of Mexico, Gulf of Guinea, Caspian Sea, Canada, Iraq and Russia). However, large cost reductions through economies of scale are also projected beyond the initial investments.

Venezuela's oil development was well managed by the international oil companies (IOCs) for 6 decades up to the 1975 nationalization. The Venezuelan petroleum historian Efraín Barberii recognizes this:

> *"Petroleos de Venezuela (PDVSA) received from the concessionaires a mature industry, worldwide recognized for its involvement, progress, development and for their large contributions in production, handling and commercialization of the hydrocarbons"*[4]

Table 1, next page, summarizes the involvement of IOCs in Venezuela.

Venezuela today has 297 billion of certified proven reserves of which about 77 billion belong to the light and medium crude category and the rest to the heavy and extra heavy variety, most of which are located along the Orinoco Belt formation. It is estimated that Venezuela also harbors about 185 TCF of natural gas (over 90% of which is associated with petroleum). This certification is done on a field by field basis by a team that involves Venezuelan, IOC and international specialists with experience within

the Orinoco Belt. The final number is at best an estimate that involves, besides crude reserves availability, current recoverable technology as well as economic profitability. If any of those variables change, so does the reserves figure. As was noted, there is ample improvement room in the recoverable factor in the Orinoco Belt.

It is also worth pointing out that the technology exists and is in use today to upgrade the low API quality of this oil towards medium and light oil acceptable for refining into all its multiple uses, including transport and petrochemicals. As Table 2 shows, the oil industry initially progressed well under the nationalization scheme.

Produced petroleum	31,947.2
Processed petroleum	8,563.2
Exported petroleum	23,310.2
Exported products	6,758.8
Wells Producing of Petroleum	86.6%
Wells Producing of Gas	0.9%
Dry wells.	12.5%

Table 1
Realization of Independent Oil Companies in Venezuela, 1914-1975 (MMBD)

Table 3, released recently by Barclays, analyses Venezuelan actual production from the import figures reported by its clients. This does not include the estimated 600,000 BPD of national consumption. Together they post about 3.0 MBD of total daily production, a figure that is close to the official stated figures which includes crude oil, synthetic oil, NGL's, coker, and condensate. Because of physical and political constraints, e.g., well maintenance and OPEC production quotas, this total production figure is problematic. It is also worth noting that this total production number may fall well short, between two and three million barrels per day, of the planed 2005 goal of 5.8 MBD of 2012 oil production.

Crude Produced,	
Light (>30 API)	6,068
Medium (22-29.9 API)	6,200
Heavy (< 21.9 API)	5,923
Total MMB	18,191
Condensed MMB	2,073
Natural Gas Liquids MMB	885
Crude Processed MMB	8,274
Crude Exported MMB	11,726
Sold Products in Domestic Market MMB	3,204
End 1999: Total Active Wells/Wells	31,593/17,916
Fiscal Participation 1976-1998 MMBs	8,207,180

Table 2
Figures of the National Petroleum Industry, 1976-1999

Dutch Disease

Dutch Disease is a complex economics phenomenon that occurs to mineral rich nations when a sudden burst in the demand for its product is recorded. It has been widely analysed and documented from various sources. Here we will only describe the elements that explain why the oil wealth rent that has accrued to Venezuela has come with a double edge sword that has contributed to moving the country into a renter and unproductive society.

1. It has overvalued the national currency and weakened the competitive edge in the production of other staple goods that used to be made and now are imported.
2. Since oil related activities are much more lucrative, this has caused many entrepreneurs to abandon their traditional areas in the rural sectors in favour of flocking to the urban cities in search of a piece of the "oil pie''. For example, in the 1970's, a government decision was made to cancel all agricultural related debt in the hopes of eliminating this financial burden and increasing agricultural production. The result was the opposite. Most landowners simply sold or closed their latifundios and moved into the construction business or other urbanite ventures.
3. Massive internal migrations and foreign immigrations to the urban core of principal cities were caused, creating the infamous poverty belts, collapsing all social services and resulting in rampant crime. Venezuela's population tripled since the first oil boom in 1973.
4. Lavish spending on huge industrial projects that were ill conceived and badly managed were induced, wasting valuable resources, creating the need for permanent subsidies and international debt. Rampant rent seeking and corruption by both state 'technocrats' and private contractors occurred. In 1949 Venezuela's GDP per-capita income was higher than West Germany, Italy and Japan. Now it ranks number 44 in the world.
5. It made the nation more dependent on one commodity for hard currency earnings to pay for imports, which include both final food and medical goods, as well as in parts and inputs for industrial plants.
6. It made the country totally dependent on the Government for all economic activity, including both public and private production since it is the state that controls foreign currency for imports of spare parts and finished goods.

Country/Area	**2007**	**2008**	**2009**	**2010**
USA	1361	1188	1063	998
U.S. Virgin Islands	250	271	247	919
Europe	305	274	243	200
China	22	130	207	244
India	127	130	88	200
Other Asia	37	82	121	90
Brazil	15	19	31	31
Others	97	90	73	70
Exp Market Cond	2214	2183	2073	2052
Cuba	120	115	112	120
Curacao	200	212	190	170
Nicaragua	6	14	28	30
Others	143	115	113	105
Exp Pref Cond	470	456	446	425
Total	2683	2639	2519	2477
Official Exports	2789	2897	2682	

Table 3
Destination of Venezuelan Oil Exports (thousand B/D)

7. It has transformed the political conditions of the country. This last effect is probably the least understood.

   As opposed to virtually all other developing countries, where the means of production (land, capital, companies) is privately held, Venezuela is different for two reasons: 1) Because, by the constitution oil belongs to the state and 2) because it is a full grown democracy. This means that the vote from the poor people count, and since the country has a lot more poor folk that rich, they count a lot. Hugo Chavez champions the poor people because he not only comes from within their ranks but has developed a great rapport with them. He has improved their lot and hastened their hope and dignity but he has done it charitably, not productively nor sustainably.

   The phenomena arises since by Venezuelan law whomever governs the state also governs the fate of the countries lucrative oil reserves. This dramatically hastens rent seeking but in the reverse. It is not the rich who have control of the lucrative means of production and the poor who want access to it, but just the opposite. The real paradox in Venezuela is that it is the rich who want access to what the poor (or some) have; the power over the oil wealth. It is a political-sociological pyramid turned on its head.

Today oil accounts for over 95% of Venezuela's exports, 50% of government revenues and 30% of GDP directly. According to official figures, imports tripled between 2000 and 2008 to the unheard of level of US$ 49.4 billion, before they collapsed 22.3% the following year due to policy instigated recessions[6]. Venezuela's populist president, Hugo Chavez, has presided over untold oil wealth and a recognizable reduction in Venezuela's worst poverty levels (through 'missions' geared towards extreme hunger alleviation by handouts, free education and health care) has also presided over a collapse in the production of all of Venezuela's agriculture and much of the industrial apparatus, including crude oil production and even some energy intensive sectors like steel and aluminium. In contrast to other socialist nations that focus on socialist distribution while leaving production issues to private enterprise, Venezuela has opted for the ill defined "productive socialism'' were the state interferes with basic production decisions of key industries. This socialist production model has exacerbated rent seeking and Dutch disease, and the constant "expropriations'' have scared off would be investors in virtually all economic sectors. It is not that his socialist production model is not working, but that it can't work; it is socially-physically impossible for it to work (100 years of productive capitalism is enough time to teach us how companies must be managed to produce.

A sudden influx of petrodollars are never easy to absorb productively, as Stanford University professor Dr. Terry Lynn Karl, in her landmark book, *The Paradox of Plenty*, found through her extensive research on petro-states like Venezuela:

> *"Petro-states find themselves incapable of absorbing their surplus, even if they quickly generate new public-sector projects. But, facing the impending threat of massive inflation, worried about depletability, accustomed to seeing the state as the leader in development, and eager to put their new wealth to immediate use, oil governments rely on their standard operating procedures: they reach for large-scale, capital-intensive, long gestation projects, or if such projects are already underway, they increase their sale and accelerate their completion dates. These projects epitomize a resource-base industrialization strategy; they emphasize processing and refining, petrochemicals, and steel. Not surprisingly, in the face of a powerful push to absorb petrodollars rapidly and a general relaxation of fiscal discipline, they are often wasteful and poorly conceived.*
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> *"The boom not only provokes a grander, oil-led economic model but also simultaneously generates new demands for resources from both the state and civil society. Policymakers, once torn between their twin preoccupations with diversification and equity, now think that they can do both. The military demands modernized weapons and improved living conditions; capitalists seek credit and subsidies; the middle class calls for increased social spending, labor for higher wages, and the unemployed for the creation of jobs. As demands rise, unwieldy and ineffective bureaucracies, suddenly thrust into new roles, find themselves incapable of scaling down expansionist public- sector programs or warding off private-sector requests. Thus they ultimately contribute to growing budget and trade deficits and foreign debt."*[7]

One of the crucial phrases of the above paragraphs is Dr. Karl's reference to 'accustomed to seeing the state as the leader in development', which, of course, was not the case in Texas or Norway when they struck oil. Productive development occurs rarely, if at all, under non-competitive conditions, because it is competition that breeds the juices of innovation, inventiveness and creativity. Technological and productivity prowess is and has always been a product of company competition in a fair play and open market environment, and living standards have increased because of it.

Venezuela's current economic framework is founded on political favour (like the never defined "21st Century Socialism'') rather than on well tried and tested economic and productive fundamentals. Its

results have been nothing short of disastrous for the country. In 2010 the government expropriated close to 200 companies, most of which were productive and paid taxes, in key sectors like steel, cement, electricity, communications, food and petroleum. Now their production has collapsed and needs to be subsidized. Economist/Intellectual/Newspaperman and a long time veteran of the Venezuelan political scene, Teodoro Petkoff (also a former Marxist guerrilla, now reformed) wrote the following in his most recent and excellent book.

> *"In the six years prior to 2008, the management of the economy has not been sustained on productive growth but on a formidable expansion of public expenditure, in tune with the exponential growth of oil income. Public expenditure has rounded, year after year, 30% of the GDP, but it has been a highly unproductive expenditure, translated into a widening of demand and consumption and attended by unfettered imports instead of the growth of the internal supply. On the contrary, in manufacture as in agriculture, both have been severely damaged by an exchange control policy and the systematic hostile pressure that the enterprising sector has been subjected to. By anchoring the exchange rate from 2003 to January 2010 (when logically, a maxi-devaluation became inevitable), the (Venezuelan currency) bolívar has been strongly revalued and this has stimulated massive imports and diminished the incentives of internal production and non-oil exports. The result has been a significant contraction of the industrial structure, as well as agriculture and livestock. Moreover, the incendiary anti-capitalistic rhetoric, accompanied by the persistent harassment of the economic sectors, which ideological roots have sunk now to an elemental and primitive Marxism, has contributed to the systematic destruction of some of the material basis of what the government pretends is a change in socialistic orientation. After 11 years of Chavism, the country is ever more dependent on oil exports as ever before (95% of the hard currency earnings come from oil) and it constitutes an archetypical case of the so called "Dutch Disease" and the rent seeking condition of the economy."*[8]

Petkoff then makes the following observation of Venezuela's failed economy.

> *"We can say…that Chavez has tried to forward some alternative projects of social-economic organization, but the failures have been spectacular. From cooperatives, which Chavez later discarded when he 'discovered' that cooperatives, even though they are collective organizations were also 'capitalists', to the phantom 'production enterprises of social property'…going through the picturesque (and failed) promotion of barter as an option to the use of money, Chavez has tried to stimulate, experimentally, this class of initiatives that weight very little within the total of the Venezuela economy. In fact, the so called 'social economy' doesn't even reach a half point of the Venezuelan GDP according to the 2009 official figures from the Venezuelan Central bank. Four other "congestive" experiences also failed, especially for its absolute official misapprehension that left the workers free to their own luck and these "congestive enterprises" ended up as mere broken state owned companies…there hasn't been one sole experience of an economic peasantry of social 'revolutionary' and not even distantly related to the Venezuelan agrarian reforms of the 60's and 70's."*[9]

Table 4, from EDC Economics, illustrates all too clearly the exhaustion of the productive socialist model of development. Not only did the GDP decline for the second year in a row making the country the only petro state and the second in Latin America still mired in recession (other than Haiti), but Venezuela posted by far the highest inflation rate in the Western Hemisphere. Despite all of its oil wealth, its ranking in income per-capita has remained unchanged at number 44 for at least two decades. The link between high oil prices and economic growth through public expenditure increases has been broken, as firms are running at very high capacity but are understandably hesitant to expand for fear of expropriation.

	04-08 Ave.	2009	2010	2011 est
GDP (% growth, real)	10.2	-3.3	-2.5	1.5
Inflation (% chg. pa ave.)	19.9	27.1	32.0	30.0
Fiscal Balance (% of GDP)	0.3	-6.2	-3.2	-3.9
Exports (% comp. an. growth)	28.4	-39.5	4.7	-9.4
Imports (% comp. an. growth)	36.4	-22.3	-6.7	-1.3
Current Account (% of GDP)	13.1	2.6	6.0	3.7
Reserves (months of curr. debts)	6.7	5.9	3.7	3.2
External Debt (% of GDP)	25.1	15.5	27.3	30.1
Debt Service Ratio (due)	10.8	10.6	15.8	14.8
Exchange Rate (to USD: eoy)	2.1	2.2	4.3	5.5

Source: EIU, EDC Economics

Table 4
Economic Indicators

Fortunately there are countries that have confronted Dutch Disease and defeated it. These lie mostly in Scandinavia where a clear line has been defined between "productive" socialism and "distributive" socialism. It is the last of these that has proven successful. The state lets all productive decisions within the realm of privately owned companies and through taxes manages distributive themes like public education, health care, and infrastructure. Venezuela should take a much closer look at this experience or else risk, once again, wasting another golden opportunity to move the nation towards productive and fair prosperity. It is its last opportunity.

(See footnotes on page 18)