Dutch Disease, Oil and Developing Countries

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“Dutch Disease” is an economic phenomenon that affects countries upon the discovery, extraction and exportation of large amounts of natural resources. It specifically tends to affect countries that find large amounts of oil and gas. It is coined after the Netherlands found large deposits of natural gas in the North Sea. This event caused an unexpected mix of externalities in the Dutch economy. An event as significant as finding large amounts of oil is sure to cause side-effects. One must expect that finding a huge amount of oil would have both positive and negative consequences for a country and that there would be many unforeseen. The term Dutch Disease refers to the impact of those consequences that was noticed in the Netherlands during the period after the Dutch started to sell their natural gas. Exports were no longer marketable given an increase in the exchange rate and this marked an economic crisis (Gylfason 2). At present the Netherlands are not the only country associated with Dutch Disease. Nearly every country that finds oil, natural gas, or a valuable amount of a tradable natural resource should concern itself with the possibility of “Dutch Disease” and the impact that extraction of oil will have on their economy. An examination of “Dutch Disease” and how different countries have dealt with this influx of revenue from oil resources is presented to illustrate the impact on a country of large oil resources.

The discovery and exportation of a natural resource causes an increase in income to a country, both to the government through royalties and to the people who live there through their employment in the new industry. Because exchange rates represent the value of a country divided by the number of dollars (much like stocks in a company) the value and therefore the exchange rate of that country goes up (assuming it is not fixed). The increase in income and the exchange rate due to producing a large amount of natural
resource can quickly cause the inner economy of a developing country to slow down. This is somewhat counter-intuitive since both of the larger value of the dollar and the increase in income are very positive occurrences in and of themselves. A closer examination is required to explain why the combination of these two events can result in negative consequences.

There are three sectors of the economy that need to be examined in this analysis; traded resources traded manufacturing and non-traded services (Corden, 31). In this case if something is traded it means it is available for export and import, that which is not tradable refers to that which is not traded with other countries, perhaps services (traditionally). Manufacturing is an important to employment in a country, it is also important to the development of human capital. Human capital refers to the skill set in the workers of a country. The net human capital of a country is the combined knowledge of workers in that country. As workers experience new tasks, gain new skills and innovate while on the job, human capital increases. This is the ultimate expression of how a country, and the capitalist world, moves forward over time; human capital is constantly growing and pushing industries and innovations ahead. Thus, unemployment is detrimental to a country’s total development of wealth as well as to individuals that are unemployed.

Essentially what occurs during Dutch Disease is that the discovery and extraction of a natural resource, most commonly oil, causes an initial increase in income to the workers in a country. However this increase in employment has been noted to be minimal because oil is a very capital-intensive industry, most of this capital tends to be provided by foreign companies. Also, the skills required for the oil industry can also be unavailable
from within the workers of a country thereby encouraging the use of foreign workers and limiting the growth of human capital through yet another means. Given these circumstances consumers spend their incomes in two ways; on non-traded services, which suffer no loss from this increase in income, and on imports. Little gets spent on traded manufacturing produced locally because the increase in that country’s dollar causes those goods to be relatively more expensive. This increase in the dollar drives the costs, and therefore the prices, of making these products up comparatively speaking. Specifically, the imports of other countries are now priced significantly lower making them much more competitive for consumers. This happens both within and outside of the country.

The most detrimental aspect of this phenomenon is that the decrease in the sale of tradable manufacturing causes employment to fall. This loss of employment causes the value of the human capital in a country to be reduced (as well as the rate of growth), which ultimately lowers the value of that country’s dollar. Thus, the net effect of the discovery and extraction of oil is not negative however the costs cancel out the benefits. Oil is a very valuable and finite resource; any country will consider itself blessed to find a large oil deposit within their region. Therefore gaining from the advantages of oil is very attractive and can be essential to the development of a country.

Dutch Disease can have a temporary impact or it can lead to many other problems if governments react to the influx of revenue poorly. Governments take different approaches to ensure they are protected from these consequences. Some governments limit the speed at which oil may be exported; others attempt to control the value of their dollar at a time when it has increased past a ‘healthy’ amount through adjustment of the
exchange rate. However, both these strategies are less than optimal, the first limiting investment and other forms of growth, the second often causing an economic shock due to the large jump of the dollar. Without strict government ownership and control over the export of oil all that a government may do is manipulate of the monetary and fiscal policies in an attempt to reverse the impact of Dutch Disease.

Through the analysis of several countries experiences in finding and exporting oil this paper seeks an answer to the question of if there is an optimal way to avoid the havoc Dutch Disease can cause. In order to gain an understanding it is necessary to outline the different means through which a government may alter its money supply, rate of government spending or taxation. Although this discussion is simple and will include the use of extremes to outline possibilities many more exist (almost infinite in the combinations of where to spend money or who to tax). The first step for any government is to make a budget; to decide whether to run a deficit or not. There are two aspects to a budget; the structural and the cyclical. The structural is that which the government controls (money supply, government spending and taxes) and the cyclical is that which the government may not control (for example; the discovery of a large amount of oil). The answer to Dutch Disease (if there is one) must lie in some combination of the structural budget variables.

As oil is produced and sold the GNP (gross national product) rises and the transactions demand for money rises within the country. As a result the interest rates in that country rise; it is more expensive to borrow money that is more valuable. The increase in interest rates make investment less attractive compared with places where interest rates are lower. This is the macroeconomic reflection of what consumers are
faced with when they buy imports for cheaper than goods produced at home. This drop in investment coupled with a higher exchange rate also leads to a decrease in net exports. In the case of Dutch Disease this decrease in exports can be expanded to mean a decrease in tradable manufacturing consumed at home and abroad. This model is similar to what occurs when a country is faced with crowding out occurs. However, crowding out involves government action exemplified in an increase in the structural deficit through tax cuts and government spending. This is a very different starting point but it leads to the same outcome as Dutch Disease. In crowding out a deficit increase causes the increase in interest rates and decrease in investment.

Scarfl outlines two solutions to crowding out. A country can increase the supply of money thereby countering the effects of the increase in exchange rate. However, in the case of most developing countries, an increase in money is unlikely due to the fear of inflation. Also during the seventies and eighties inflation was a global issue making this choice even more unlikely in the period while most countries were feeling effects similar of the Dutch Disease. A country may also increase government spending to provoke external investment. Investment that stimulates the economy in such a way that “firm’s sales and profits will increase, while excess plant capacity declines” will help counter the negative consequences experienced by oil exporting countries.

While these economic models explain and outline solutions real world situations differ enormously in their applicability. The economic situation is never so simple that government spending to encourage investment would solve all the problems associated with managing wealth for an entire population. The position of a country before and during the influx of wealth is often a factor of many different variables ranging from the
political system in that country to the status of other industry at the time of resource exportation. The applicability of Dutch Disease is therefore limited; some countries may experience situations very much like this explanation and some countries may differ from the model extensively. An examination of several countries will be explored to highlight the applicability of this model to real world situations. The period in which many countries experienced the largest influx of oil revenue was during the price increases in the seventies and early eighties so this period will be explored as the period in which many countries found themselves vulnerable to the negative impact of Dutch Disease. This discussion is currently relative because of the high price of oil today. A better understanding of how large increases in the price of oil affected countries in the past may shed some light on how a country may protect itself today.

MEXICO

In 1976 a new president was elected to Mexico. According to the United States Library of congress Lopez Portillo faced an economic crisis handed down to him from earlier government. Large foreign debt and inflation rates as well as a 55 % currency devaluation were the factors that Portillo confronted. Shortly thereafter large oil reserves were confirmed. The Mexican government feared inflationary pressures so they decided to maintain control over the rate of extraction through the implementation of a crown corporation controlling oil. Mexico soon experienced immense revenues from oil extraction due to the international supply and demand factors of the seventies, specifically the OPEC price increase. The employment level in Mexico remained low as the low skill level of workers could not be of use to the oil industry. Foreign banks and
lenders regarded the abundant resources as security and lent funds to the Mexican government. The Mexican dollar remained artificially high reflecting the value of the reserves. Meanwhile, oil prices were rising and the Mexican infrastructure could do little to control the inflow of imports. Dutch Disease was in full effect and the citizens of Mexico were not seeing any increase in personal wealth.

Portillo increased government spending. The largest area of spending was on food subsidies. This sort of spending does nothing to increase investment or spur the economy. Increased borrowing and the eventual drop in oil prices pushed Mexico into a huge deficit and Portillo ended his presidency amidst public disgrace.

The issues that Mexico faced during this time were amplified by abhorrent structural government policy. In fact it seems that there were no provisions for the future, the concerns being centered upon how to subdue the people of Mexico during times of high revenue. This is reflected in the use of food subsidies as opposed to other spending. The only measure to ensure the adequate development of oil was the direct control of the industry through the crown corporation; PEMEX. As early as the 1950s foreign investors were hesitant to lend to PEMEX (Werner, 1083). Investments in other countries looked more appealing due to the investment conditions developed by those other governments. Randall notes that PEMEX’s high internal costs and inefficient operations might have explained the lack of investment.

Once Dutch Disease began to affect the balance of payments for the Mexican Government, even production of foodstuffs stagnated. The government raised tariffs on imports to shield local producers. This reflects a quick fix which only hindered Mexico’s competitiveness and modernization. The Mexican government devalued the peso three
times in 1982, which only fueled inflation. The new president, Miguel de la Madrid, had to reverse the economic crisis through reduction of public spending, stimulating exports and fostering economic growth. The first stabilization policy he employed was a sharp devaluation of the Peso and a sharp reduction in public spending. These were the measures agreed to with the IMF and did reduce the deficit. However, the cost was paid through a severe recession. It was not until 1985 when the government refocused on spurring growth in the development of exports and trade liberalization that some progress was made. The policy was meant to restore the balance of payments and to restrain prices through lower prices of imports. Not until 1988 was inflation under control. However, foreign investors were still hesitant to provide the capital needed for Mexico to flourish. In the years following, Mexico administered new trade policies encouraging foreign investment.

The lessons from Mexican crisis are clear; once poor economic decisions are made it can be extremely difficult to recover. Oil is such an important opportunity and to mismanage it to this extreme is extremely wasteful and dangerous. A second lesson is also clear; preventative measures are very useful where they exist. According to the solutions for crowding out the Mexican government could have used the revenue from oil to encourage investment and spur the economy immediately. Certainly such a measure would have a stronger positive long run result then paying for food subsidies.

The real solution lies in creating value that is not solely based in oil. Once the oil runs out there is no more wealth than before unless the oil royalties have been used to create lasting value. If Mexico had used the revenue from oil to entice investment in the development of new industries or in education of the Mexican people some value would
have been created. Instead the government only concerned itself with the situation at that moment. This sort of disregard for the government’s role in the development of the economy is ironic given the centralized structure Mexico. Generally, a government that takes part in industry through ownership of a crown corporation does so to have better control over the economy. To establish a crown corporation and then do nothing to manage its effect on the economy is irrational.

**VENEZUELA**

The first commercial drilling for oil occurred in 1917 and by 1928 Venezuela was a leading exporter of oil (United States Library of Congress, 82). During this period Venezuela can be characterized as a dictatorship. By 1930, oil represented 90% of the export revenue in Venezuela. In 1948 a fifty percent royalty rate was introduced. This royalty rate revenue was to be used in “sowing the oil” to stimulate agriculture primarily and later industry. Prior to oil the coffee industry had been the main export in Venezuela. Oil revenues had clearly taken first place in Venezuela however the country’s people remained relatively poor.

A democratic government took power in 1958 and swiftly intervened in the economy using the oil revenues. The agency Cordiplan was developed and put in charge of long term economic planning. In 1960 the government made two significant movements; it began to create regional development corporations to decentralize planning and it became one of the founding members of OPEC. Throughout the 1960s Venezuela spent money on education, health, electricity, portable water, and other basic projects. This led to a 25% increase in per capita income by 1973. However when the
world price of oil soared during the seventies and so did the Venezuelan government’s spending. In the years between 1973 and 1979 the government spent more than it had since it’s independence in 1830. The oil industry was nationalized in 1976. Government spending steadily increased because of increased surges in oil revenue. Negative growth rates characterized Venezuela during 1980-1982. By 1983 oil revenues could no longer support the spending on government subsidies, price controls, exchange-rate losses, and the operations of more than 400 public institutions.

In 1983 the government attempted to reform the economic downturn through devaluations of the currency and a multi-tier exchange-rate system. However, this did little to stall the impending crisis and the 50% reduction in the price of oil in 1986 did nothing to help the situation. In 1989 the IMF stepped in with loans and the price increases related to the reforms necessary for the loans caused rioting and the worst violence the country had seen since it became a democracy.

The increase in the price of oil in the 1970s caused Venezuela to be affected negatively although its peak oil production point had already been reached in 1970. Because of the increase in the price of oil the government relied completely on oil revenue and like Mexico, was reluctant to take steps to prevent a crisis. The IMF had to impose the increases in domestic prices necessary to complete the cycle that played out. Protectionism through government subsidies and spending held domestic prices low enough to remain competitive imports. In this sense Venezuela was escaping Dutch Disease. However, these prices were supported not through true market value but through borrowing and extra revenue. As soon as those avenues shut down so did the government’s ability to control domestic prices. The sudden jump in prices imposed by
the IMF caused a recession so severe that rioting was induced. Another case of the lack of value-added industry creation led to the eventual downfall of an economy given the opportunity to grow.

Essentially, the government had relied completely on revenue from oil because these revenues were so large. The Venezuelan government bet that the price of oil would continue to rise. This was risky bet even with the trends of the seventies; the price of oil was so high because of the decisions made be OPEC not because of true market value. An eventual return to market value caused the sharp decrease in prices and Venezuela lost its bet. The development of a domestic traded manufacturing sector simply did not occur. Therefore, the revenue from oil was spent primarily on imports. Because nearly all industry was supported through subsidies the country was unattractive to foreign investment. Also, high tariffs on imports and exchange rate manipulation had protected the domestic market. Thus, Venezuela had avoided Dutch Disease only temporarily and as a factor of having little traded manufacturing that was truly competitive to begin with. Traditional exports of oil, iron, coffee, and cocoa made 95% of the exported commodities in the early 1980s. The closed economy, while initially protecting against the lower prices of imports could not sustain this position. The decision to depend further on the high price of oil in the early 1980s led the country into a tailspin that would deteriorate the economy.

According to the Economist, Venezuela is currently suffering from a 27% drop in real GDP between 1998 and 2003. This has created a poor majority in Venezuela and with little real recovery since the economic crisis their current president, Hugo Chavez, seems to be stretching for a solution. His main focus is on attracting foreign direct
investments in the oil industry. Whether and how Venezuela will recover from its crisis still remains to be seen. Chavez is a politically controversial figure and he has been unable to turn the country around.

Two patterns have emerged through the discussion of these two countries. The first is a reflection of the oil price increase in the 1970s. While North America, and doubtless the rest of the world, suffered through the temporary increase in oil prices the developing countries with oil seem to have fared much worse in the long run. The increase in the price of oil, in both cases, caused an unprecedented increase in revenue for these countries. Combine this fact with the lack of wise government in both places and economic ruin results. Many postulate that Dutch Disease is only a temporary structural problem concerned with the adjustment of the economy to the acquisition of the resource however it seems that developing nations can suffer lengthy consequences. This is especially the case where the increase is related to the sale of oil and no other valuable industry is created from this wealth. It seems that developing countries do not have the capacity to deal properly with the large inflow of resources. Perhaps an analysis of an Arab country belonging to OPEC will shed some light on the whether the control of supply can aid in the avoidance of Dutch Disease.

**Saudi Arabia**

The discovery of oil in 1938 came only six years after the development of the Kingdom of Saudi Arabia (United States Library of Congress- online). This is significant for a number of reasons, not to mention that a kingdom is quite different from a democracy. The Saudis believe that their King has ultimate authority, politics, political
parties and labor unions have all been outlawed therefore the Saudi government is unaccountable except to themselves. While Saudi Arabia remained relatively poor prior to the seventies the increase in the price of oil during the seventies substantially increased its revenues. The revenues from oil jumped from 4.3 billion in 1973 to 101.8 billion in 1980. In 1974 the government attempted to only extract oil at a moderate pace in order to ensure a steady, lasting income but the ever increasing international demand and price forced the Saudis to formulate a new strategy. Industrial development, with an emphasis on the processing of hydrocarbons was the revised plan. Saudi Arabia was using oil revenue to create valuable industry and spur the growth of its economy. Several foreign international companies were invited into joint ventures with the government to develop these plants. An infrastructure was also developed during this period, mainly to support the oil industry.

During the same period the government engaged in many subsidies, the purposes of which were three-fold; encourage non-oil development, distribute income, and meet social goals. While these subsidies supported the Saudi population they became increasingly difficult to maintain and justify as many of the costs of the programs were greater than the overall benefits. When the price of oil began to plummet in 1982 Saudi Arabia was forced to change its focus from managing budget surplus to dealing with deficit. Due to Saudi Arabia’s enormous share of oil it fell mainly to them to reduce the oil supply in order to reconcile with OPEC’s production quota. Saudi Arabia was faced with two economic challenges; the reduction in the price of oil and the reduction in production. In response to this, Saudi Arabia instead increased oil production which led
to a second price-crash for oil in 1986. Saudi Arabia mitigated these damages through the proceeds of the earlier oil revenues.

In Saudi Arabia the at home traded manufacturing industry is very limited. The rate of imports is very closely tied to the rate of income from oil. Saudi Arabia’s entire economy is dependent on this resource. While attempts were made to develop industry outside of oil the costs were unjustifiable. However, what most be noted is that Saudi Arabia has differed from Mexico and Venezuela in some important ways. Government spending, while not always efficient, appears to have been under control and related to revenues. In instances where revenue declined the government did not attempt to maintain its level of spending through increased borrowing. Thus a large deficit did not occur and neither did the conditions of crowding out.

Also, the massive quantities of oil in Saudi Arabia ensure that an economy based on oil is more justifiable here than anywhere in the world. The government made several successful attempts to work with foreign business in developing the oil sector. The true challenge for the Saudi government will be for it to develop a non-oil traded sector before oil resources are depleted or technologies are altered. Quite simply, Dutch Disease has not been a factor in this nation due to a general lack of manufacturing before the dependence on oil. The development of refineries in Saudi Arabia and other value-added steps involving hydrocarbons has been an effective means through which Saudi Arabia has increased the value of its industry. The increase in revenue in the seventies was managed relatively wisely and did not lead to the same sort of deficits that were created in Mexico and Venezuela.
In Mexico the effects of Dutch Disease were immediate and no solution was attempted. In Venezuela protectionism and subsidies stalled the effects but the eventuality of market prices prevailed. In Saudi Arabia there is so much oil that the concerns presented by Dutch Disease are not relevant. The reflections presented here are pertinent to the situation in the world today because of the current spike in oil prices. An inflow of revenue will grace oil producing nations; these nations however, have the lessons of the past to learn from. The most viable solution to the negative consequences of a large inflow of revenue is the creation of value. Thus, the question becomes not one of Dutch Disease and how to avoid the adjustment period but, how to manage the inflow of wealth so as to create industries capable of creating lasting value.

This is the question faced by all developing countries, the reason that they flounder is because there are no viable industries. What is remarkable is that even the inflow of large amounts of revenue without initial debt does not alleviate this problem. The transitional effects that Dutch Disease describes led to structural problems that through mismanagement sent Mexico and Venezuela into recession. The question of what proper management would be is difficult to answer. Perhaps another look at the premise of Dutch Disease will shed light on a viable, long-term solution.

The inflow of revenue to a developing country causes the already precarious position of that country’s traded manufacturing sector to be challenged by cheaper imports. The loss in employment of the people of this nation due to the loss of competitiveness of their industry causes a decrease in human capital. Economic theory postulates two solutions; one that is feared overly inflationary and another that can be challenging. According to Ebrahim-Zadeh the answer is to store the revenue from oil and
disperse it slowly like the Saudis have done. However this approach is preventative and not proactive.

In the cases explored in this paper it has been shown that government policy to protect home industry eventually fails when the money needed for this measure runs out. Also shown, in the case of Saudi Arabia, is the fact that it is difficult to develop new industries in a country through the government. Developing countries are lacking in the resources needed to develop those industries and it is obviously very difficult to apply money correctly to develop other revenue generating industry. In most cases the reason an industry has not yet developed on its own is because the conditions for development of industry are already not profitable. It therefore makes little sense for a government to spend all of its money on developing those not profitable industries since in the long run no profit will emerge.

What is lacking from the discussion of solutions is the viable option of increasing the human capital through means other than employment. One may increase either the quantity or the quality of human capital. One way to increase the quality of human capital is to educate. The development of human capital in a country only decreases for a short time through unemployment. To offset this decrease a country can educate its people. The increase in human capital experienced through education may be enough to develop viable trades within the country. Gylfason recommends this approach.

One facet through which a country may encourage the development of human capital is learning by doing. This is form of development is what is limited in Dutch Disease when the manufacturing sector slows down. Countries facing foreign investment may therefore institute clauses requiring local participation in contracts with foreign
companies. The Saudi government has mandated a variety of incentives for companies to incorporate local participation. These incentives range from benefits for companies with a certain percentage of Saudi workers to preferences towards contracts that are 100 percent, 50 percent, less than 50 percent and 100 percent foreign owned in this priority (August, 252). The options to create contracts and incentives are endless and a little ingenuity may go a long way in helping developing countries promote increased human capital.

This is an especially important argument given the world’s conditions today. The ‘information age’ is the trend emerging from the industrial age. One of the blaring differences in the economic structure because of this transition is that services may now be traded across borders. For example, India is experiencing huge growth because of their sale of services to firms in the more developed countries. Couple this fact with the current increase in prices and oil producing countries will have one more shot at correcting their past wrongs. The investment in human capital may be the most important investment a developing country makes especially as the world moves beyond a goods-based economy.

Economic models present a simplified view of issues effecting countries. Many variables actually interact and cause results that are far more complex than what may be explained through any given model. In the cases presented here one of the biggest failures was of the governments in Mexico and Venezuela to control its spending. Thye Woo recognizes that controlling private spending through a tight monetary policy is possible and would help in this case.

Through a combination of education and controlled spending developing countries may be able to experience long-run growth. In the past mismanaged
government policy has led to detrimental situations in both Mexico and Venezuela after finding oil. While this analysis has been partial it has pointed to one indisputable fact. Perhaps the most valuable resource of any developing country is government concerned with the long run. Ignorance as to the outcomes of actions taken in the present can cause long term devastation. In the absence of good government oil revenues can easily get out of control, it is truly the staring point to avoiding the out of control downward spiral that many countries experience after Dutch Disease sets in.
Works Cited