ECONOMIC ANALYSIS OF THE PETROLEUM FISCAL TERMS OF MEXICO FOR NEW BID ROUNDS

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EXECUTIVE SUMMARY

Mexico amended the Constitution in 2013 in order to permit the participation of private and foreign companies in the development of the Mexican petroleum resources. In 2014 the required legislation was passed. During 2015 two swallow water and one onshore bid round were held. In 2016 a deep water bid round is planned as well as a bid round for an Association Contract with PEMEX in deep water. Furthermore a third shallow water bid round and a second onshore bid round are planned for early 2017.

In general the progress that Mexico has made during the last two years has been impressive.

This report summarizes the minimum fiscal terms contained in the legislation and the fiscal terms that are planned for the proposed rounds.

The proposed deep water, shallow water and onshore terms are well structured to encourage investment under low oil prices, while protecting the national interest in terms of maximizing the benefits from the resource. Assuming that modest additional profit shares or additional royalties are permitted by SHCP, the terms are competitive with other countries from an investor's point of view.

The Trión terms consist of a combination of rather tough association terms with the regular deep water terms and companies may therefore be hesitant to bid for this block. Also the uncertainty about the detailed bid conditions is a disincentive for the moment.

Gold plating was a serious issue for the first and second shallow water bid round. The special exploration uplift makes this less of an issue during the third round.

Bid formula criteria continue to stimulate significant over-bidding. This may increasingly result in difficult contract management issues for CNH.

This bid strategy also reflects a narrow approach to maximizing benefits per barrel equivalent rather than providing for broad based resource development for Mexico in general.

GENERAL FRAMEWORK

Constitutional changes

On the 20th of December 2013, Mexico published the changes to its Constitution. These changes permit for the first time upstream petroleum contracts with private and foreign petroleum companies. Prior to this date, upstream petroleum operations could only be carried out by Pemex, the national petroleum company or under service contracts with Pemex.

The Constitutional changes transform Pemex into a state productive company. This means that the organization of Pemex is now similar to any petroleum company. This permits Pemex to compete more effectively. At the same time, as per the Constitution, SENER has assigned to Pemex existing producing fields as well as fields to be developed and exploration acreage. This will provide the reserve base for Pemex (called "Round Zero"). However, Pemex has to bring the non-producing fields into production within 5 years.

In addition to maintaining the possibility for service contracts with Pemex, the Constitution provides for three contract models, called exploration and exploitation contracts ("CEE's")

- Profit Sharing Contracts,
- Production Sharing Contracts, and
- License Contracts.

The Mexican Petroleum Fund ("FMP") was created to secure the fiscal benefits for the State. The excess revenues go to the National Treasury.

The Secretary of Energy ("SENER") will select the areas to be offered in bid rounds and determine the provisions of the upstream model contracts, other than the fiscal and economic contract and bid provisions which are the responsibility of the Secretary of Finance and Public Credit ("SHCP").

SENER is also responsible for granting refining and gas processing licenses.

Two regulatory entities, the National Hydrocarbon Commission ("CNH") and the Energy Regulation Commission ("CRE") are given increased autonomy. CNH manages the upstream petroleum contracts and regulate this sector. CRE is responsible for pipelines and electricity.

A special agency for industrial safety and the environmental protection related to the hydrocarbon sector (the "Agency") has also been created.

New Petroleum Laws

Introduction

The fiscal provisions related to the implementation of the Constitution can be found in the Hydrocarbon Law (*"Ley de Hidrocarburos"*) and the Hydrocarbon Revenue Law ("LISH", *"Ley de Ingresos sobre Hidrocarburos"*). Furthermore specific contractual conditions are defined for each bid round.

Contract Options

The main viable options for an exploration and production contract with CNH are:

(1) License Contracts
(2) Production Sharing Contract, without cost recovery pursuant to Article 13 of the LISH, and
(3) Production Sharing Contract, with cost recovery.

The first two bid rounds were based on a Production Sharing Contract ("PSC") with cost recovery.

For the onshore bid round in 2015 SENER opted for the License Contract. The License Contract is also selected for the upcoming deep water bid round. The 2017 shallow water bid round will be based on a Production Sharing Contract, while the onshore bid round is based again on a License Contract.

Under the Production Sharing Contract as well as the License Contract the following payments have to be made to the State under the LISH:

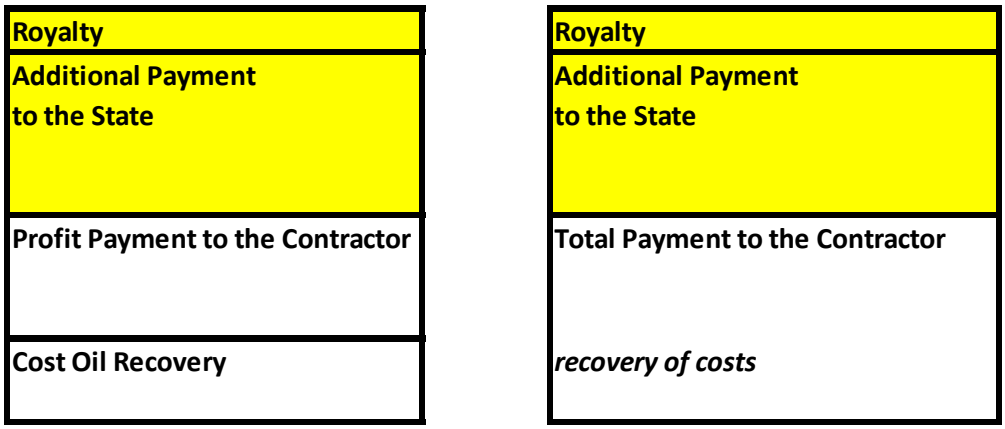
(1) Surface rentals,
(2) Royalties,
(3) Surface Taxes, and
(4) An "Additional Payment to the State" (hereafter referred to as "APS"), called "Contraprestación" in the LISH, which under the Production Sharing Contract has the character of a Profit Oil/Profit Gas share to the State, while in the License Contract it has the character of an Additional Royalty.

PSC with or without cost recovery

The LISH permits two types of PSCs:

(1) A PSC with cost recovery and cost limit, and
(2) A PSC without cost recovery, under Article 13 of the LISH.

Chart 1 . Comparison of two PSC Concepts



In principle there is no mathematical difference between a PSC with or without specific cost recovery. The same amount of APS could be paid under both concepts. The same amount of cash for the Contractor could result from both contracts. If there is no specific cost recovery, the Total Payments to the Contractor should be equal to the total of the Profit Payments to the Contractor plus the Cost Oil, in order to get an identical result.

However, the two options react quite differently economically.

The Government opted for a PSC with cost recovery and a cost limit. Nevertheless there are significant advantages to a PSC without specific cost recovery. The main difference is that a PSC with cost recovery requires control, verification and auditing of costs.

License Contract with or without the need for cost verification

For the onshore bid round in 2015 and for 2017 Mexico opted for a contract where by the additional payment to the State is an additional royalty. This does not require cost control in order to determine the additional royalty.

For deep water, Mexico has opted for an additional royalty, which is based on R-factor formulas which include the costs. Therefore, despite the payment of an additional royalty, cost control is required.

FISCAL LEGISLATIVE FRAMEWORK

Fiscal provisions under the LISH

Signature Bonus

Articles 6 and 7 of the LISH establish that under a License Contract, SHCP could establish a signature bonus. SHCP could determine different bonuses for different contracts. The amounts will be established in the Bid Conditions.

Surface Payments

Article 23 of the LISH establishes that for all contract types monthly surface payments ("Cuota Contractual") are required. These payments must be paid during the exploration period for the areas that are not subject to exploitation. The payments are adjusted for the Mexican National Price Index. During the first 60 month, the payment is 1,150 Pesos per square kilometer per month and thereafter 2,750 Pesos per square kilometer per month. At current exchange rates this means US $ 745 per square kilometer per year for the first five years and US $ 1,782 per square kilometer per year thereafter.

In addition to this Article 55 of the LISH establishes that there is also a surface tax of 1,500 Pesos per month during the exploration period for the Contract Area and 6,000 Pesos per month during the exploitation period. At current exchange rates this means US $ 972 per year per square kilometer during the exploration phase and US $ 3,888 per square kilometer thereafter.

It should be noted that these surface fees are among the highest in the world, outside the United States and Canada. This may hamper exploration over some large high risk areas outside the traditional petroleum producing basins in Mexico, since relatively large contract areas would be required in this case.

Royalties

Article 24 of the LISH establishes separate royalties for crude oil, condensates, associated natural gas and non-associated natural gas.

For crude oil the royalty rate is 7.5% when the contract crude oil price is less than US $ 48 per barrel. Over this price level, the royalty rate is established by the following formula:

$$\text{Rate} = [(0.125 * \text{contract crude oil price}) + 1.5]\%$$

In other words if the oil price is $ 100 the royalty rate is 14%.

For condensates, the rate is 5% under a contract price of $ 60 per barrel. Over this price level, the royalty rate is established by the following formula:

Rate = [(0.125 * contract condensate price) - 2.5]%

In other words if the price is $ 100 per barrel the rate is 10%.

For associated natural gas and for non-associated natural gas when the contract gas price is higher or equal than $ 5.50 per MMBtu, the rate is simply determined as:

Rate = contract natural gas price /100

For non-associated gas the royalty rate is 0% when the contract gas price is less than $ 5.00 per MMBtu. Between $ 5 and $ 5.50 the scale moves up from 0% to 5.5%.

The contract prices are determined at the measurement point.

The price levels are adjusted for the US Consumer Price Index.

An attractive feature for investors, in particular under the current low oil prices, is that the royalty is sensitive to the oil, condensate and gas prices. This will assist investors during low prices, while it creates more attractive royalty levels for government under high prices.

The adjustment with the US Consumer Price index will ensure that investment conditions for oil or non-associated gas fields do not deteriorate merely as a result of price escalation due to inflationary pressures. It encourages investors to take a long term approach. This is in particular important for deep water conditions where production may not even start within 10 years after the signing of the contract.

Additional Payment to the State ("APS")("Contraprestación")

In addition to the above payments the LISH provides for an additional payment to the State.

For the License Contracts this is an additional gross revenue share. Under Profit Sharing Contracts and Production Sharing Contracts this is an additional share of the profits. The share is adjusted with an Adjustment Mechanism which is a sliding scale that increases the government share under more favorable circumstances. The amounts and sliding scale of the Contraprestacion are defined in the Bid Conditions.

The details of the sliding scales will be discussed below under the discussion of the various bid rounds.

Share of the Contractor

Under all Contracts the value remaining after the payments to Government is paid to the Contractor. In the case of License Contracts the Contractor simply pays the Government in cash and keeps the total oil, condensates and gas production.

In Production Sharing Contracts the Contractor receives the cost oil/cost gas and the profit payments to the Contractor in kind (internationally, this would be called the profit oil/profit gas share to the Contractor). The Government receives the royalties and APS in kind. The royalties are deductible for the determination of the APS.

Under Profit Sharing Contracts, the Contractor provides all petroleum to the State and receives his share in cash.

Corporate Income Tax

Article 31 (II) of the LISH establishes that only companies which are exclusively involved in Exploration and Extraction of Hydrocarbons can conclude CEE contracts. This means that from a corporate income tax point of view the upstream petroleum industry is ring-fenced.

Activities cannot be consolidated with midstream or downstream operations or with other operations. Also group taxation is not permitted.

Currently, the corporate income tax rate is 30%. The depreciation provisions are rather favorable. Exploration, secondary recovery and enhanced recovery investments can be expensed at 100%. Development and exploitation investments can be depreciated at 25%. Infrastructure, gathering lines, field pipelines, field storage and other investments prior to the measurement point can be depreciated at 10%. Depreciation starts when costs are incurred.

Interest on loans is reasonably deductible. Loss carry forward is 10 years and interestingly for deep water 15 years. Mexico adjusts the corporate income tax for inflation.

Value Added Tax and other taxes of general application

Contractors are subject to value added taxes and other taxes of general application. Regarding value added taxes Mexico does not provide VAT refunds where outlays exceed income. For companies entering exploration plays in the initial years, this may cause an accumulation of VAT credits.

Fiscal provisions under the Hydrocarbon Law

Landowner share

Article 101 (VI)(c) of the Hydrocarbon Law establishes a required negotiated share for the land owner. For non-associated gas this share is between 0.5 and 3% of the value of the resources after deducting all contractual payments to government, but not costs. For other petroleum resources the percentage is between 0.5 and 2%,

State Participation

Article 15 of the Hydrocarbon Law permits joint operating agreements and farm outs as typically entered into in the petroleum industry. However, this applies to parties that have already entered into a CEE. Article 15 does not apply to Round Zero acreage that was provided to Pemex.

Regarding Pemex, Article 12 permits the migration of the Assignment Areas to Pemex to CEE's under terms and conditions determined by SHCP.

Article 13 permits Pemex to enter into farm outs or other joint ventures on its Assignment Areas. However, the conclusion of such agreements is subject to a bid process in order to obtain the best fiscal terms for the State. This means Pemex is not free to negotiate such joint ventures directly and cannot even select its own partner, other than determining the general characteristics of such company. This provision is a severe limitation on Pemex from an international petroleum industry perspective. Nevertheless, the provisions are essential in view of the possibility that otherwise corruption could have played a role in this process. A first bid round with respect to the Trión area in now scheduled for 2016 under this provision of the Hydrocarbon Law.

Article 14 permits Pemex to participate in general bid rounds on the basis of joint ventures with other companies.

Article 16 permits a pre-determined participation by Pemex in blocks that are being offered for bids. So far such bid rounds have not taken place.

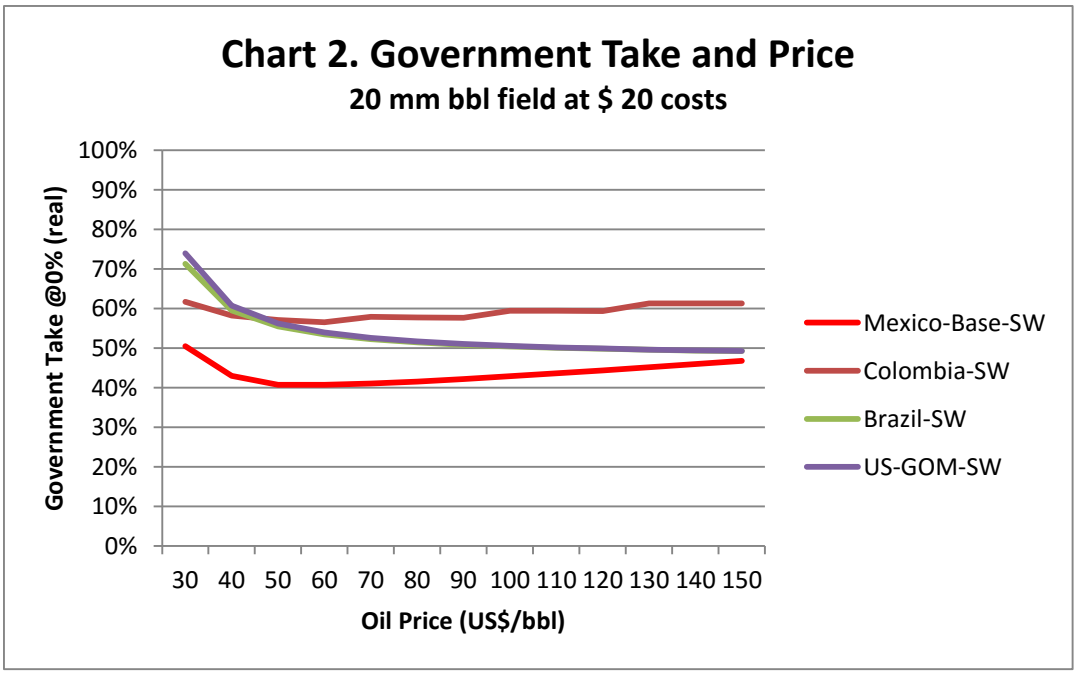
Article 17 requires the participation by Pemex in blocks along the border where the possibility exists for oil and gas fields to extend across the border.

Article Twenty-Eight of the Transitory provisions permit Pemex to participate in the migration of the existing service contracts to CEE's.

Economic Analysis of the Base Mexican Terms.

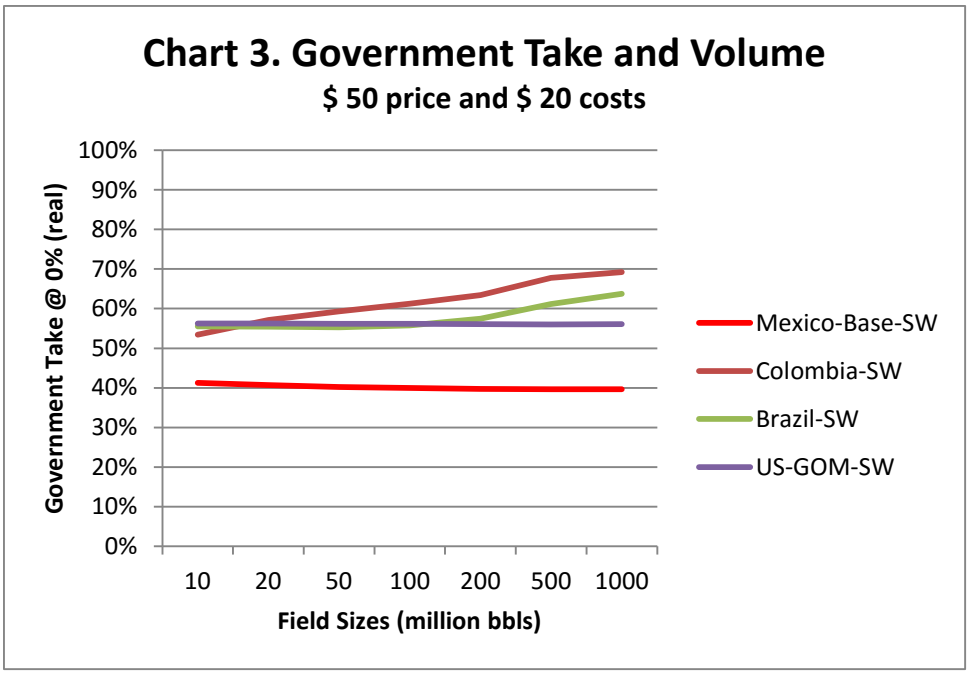
The Base Mexican terms contained in the LISH and Hydrocarbon Law are the minimum required for all contracts. In addition for to each bid round, SHCP can add the APS (Additional Payment to the State). The following two charts illustrate the Base Mexican terms assuming that the APS is set to zero.

Chart 2 illustrates the undiscounted government take for the Mexican Base terms compared with Colombia, Brazil and the US Gulf of Mexico for shallow water for a 20 million barrel field costing $ 20 per barrel for different price levels.



The chart illustrates how the government take is well below that of the three competing jurisdictions. Under low prices the Mexican-Base package is very competitive due to the low royalties under low prices. Above $ 60 per barrel the system is price progressive, which means the government take increases with higher prices. This illustrates how the entire Mexico-Base package functions well under low prices from the perspective of encouraging investment.

Chart 3 shows the undiscounted government take for different field size levels under shallow water conditions.



Also in this case the government take is well below that of competing systems for the entire range. The Mexican Base terms are not volume progressive. This means the government take does not increase for large fields.

The government take analysis of the Mexican Base terms indicates how this system is very competitive with competing jurisdictions. It is therefore possible to require a further APS without losing competitiveness. These payments could be based on sliding scales based on profitability, volume, price or cost.

This means the Mexican Base terms are well designed. They permit the full development of the Mexican resource potential and allow SHCP, in principle, to determine competitive terms for the blocks offered during each bid round.

PROPOSED DEEP WATER TERMS

Deep water conditions

The Bid Conditions and Model Contract for deep water were released December 17, 2015. The Deep Water Model Contract is a License Contract.

Compared to shallow water, the deep water is largely unexplored. Relatively few exploration wells have been drilled compared to other deep water areas in the world, in particular the US Gulf of Mexico. Large and attractive structures are available. All 10 blocks that are being offered are sufficiently large to potentially offer multiple exploration opportunities. Therefore, it is likely that under competitive fiscal terms, considerable interest will be expressed, despite the current low oil prices.

Description of the Fiscal Terms

The APS consist of an additional royalty. The amount of the additional royalty is the percentage that is bid plus an additional percentage based on an R-factor. The R-factor is an innovative formula, as follows:

R = cumulative (gross revenues – royalties – APS – rentals – surface taxes)/cumulative total costs

The R-factor is then applied to a formula which contains a variable called "Operating Result Coefficient" ("CRO"). The CRO is determined separately for each trimester, but not on a cumulative basis.

The CRO is defined as:

CRO = (Gross Revenues – royalties – APS – rentals – surface taxes – costs)/(gross revenues).

In other words the CRO is really the before tax net cash flow divided by the gross revenues. If the CRO is negative for any trimester the CRO is set to zero. During periods of low oil prices, the CRO will be low. In other words the CRO is directly affected by the oil, condensate and natural gas prices. Towards the end of the field life and close to abandonment the CRO will also be low since costs per barrel equivalent will be high. During periods of re-investment, which create a negative cash flow for such semester, the CRO is zero.

The R-factor scale is defined as follows:

R < 2	Additional Percentage is 0%
2< R < 4	Additional Percentage is ((R – 2)*16.65*CRO)%
4< R	Additional Percentage is (33.3*CRO)%.

This Mexican Deep Water R-factor has various advantages over most other R-factors. These are:

- The R-factor is immediately responsive to price variation, since the CRO is not cumulative. If the CRO is zero, the R-factor results in zero additional percentage regardless of the level of the R-factor.
- The additional percentage declines towards the end of the field life when costs relative to revenues are expected to go up. This R-factor therefore maximizes the recovery of the reserves.
- The additional percentage is automatically less if investments are made in costly further field developments.

The problem with many R-factors is that there is not a strong drop in the royalty or profit share percentages when the price drops, due to the fact that most R-factors are based on cumulative profits or revenues, not trimestral profits or revenues. Also at the end of the field life, most R-factors are high and therefore impede the full recovery of the reserves. Also investments in enhanced recovery or other costly undertakings often do not have a significant impact on the R-factor later in the life of the field.

The only problem with the proposed R-factor is that in case very significant re-investments are made, for instance, as a result of installing a new platform in the field or developing a new field in the same contract area, the negative trimestral cash flow that would result is not carried forward. This could impede such investments. It would have been better to calculate the CRO on a rolling two year period rather than for each trimester.

Economic Analysis of the Proposed Deep Water Terms

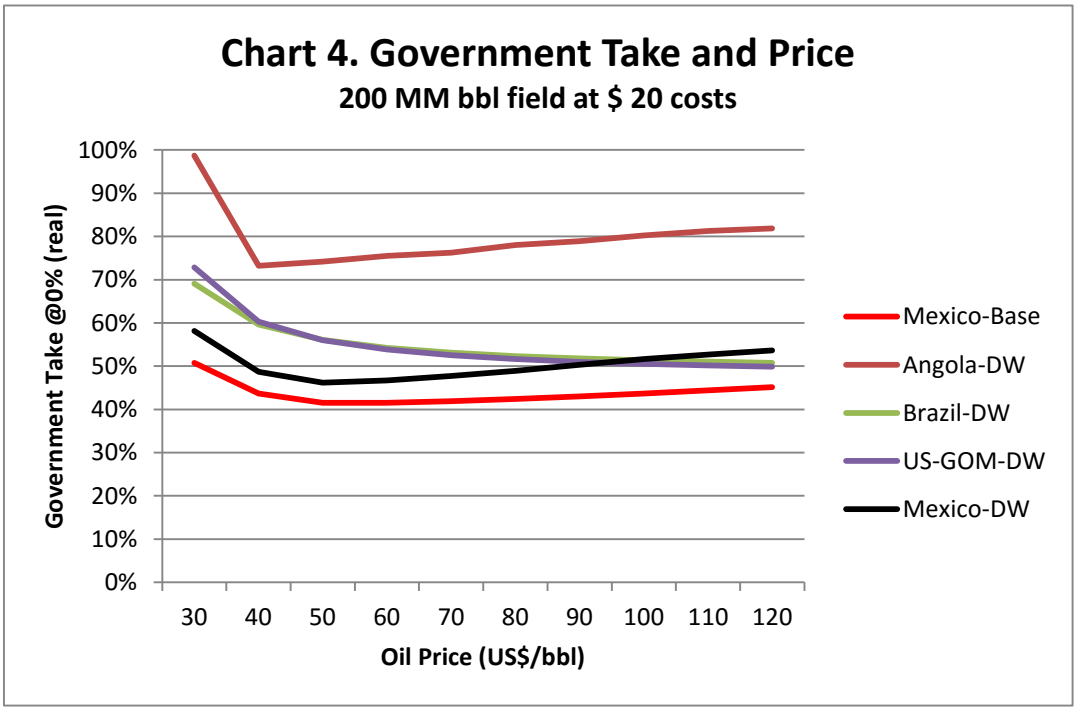
Analysis of the Additional Royalty Structure

An analysis was done on the fiscal terms contained in the Annex 3 of the Deep Water Model Contract, assuming that SHCP would require a minimum bid percentage of 5%.

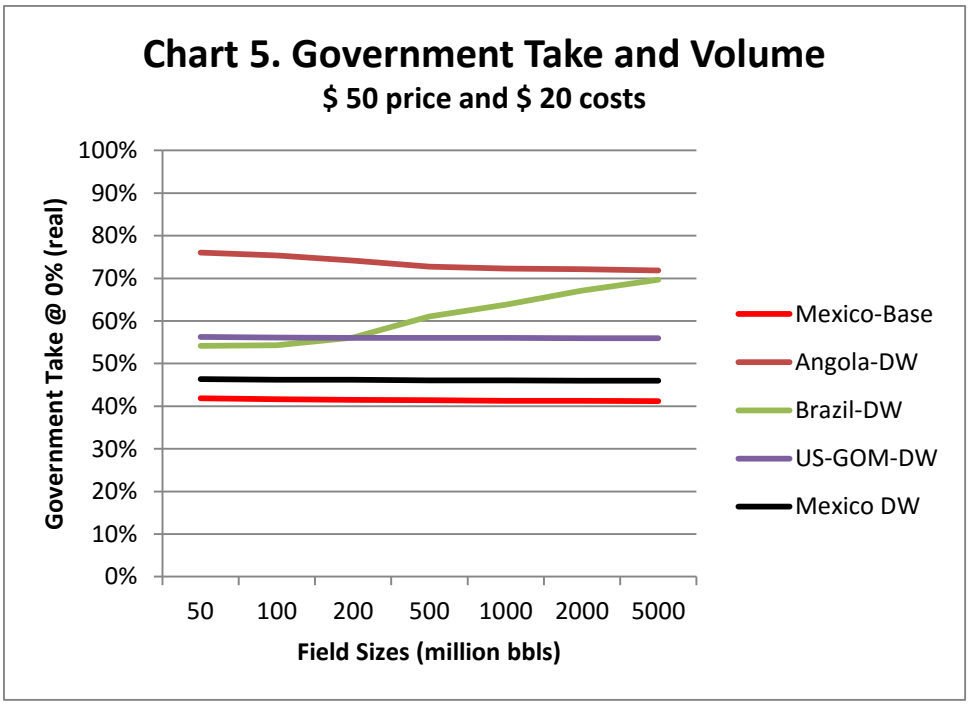
As will be obvious from the above description of the R-factor concept, the proposed additional royalty is progressive with price and costs, but not with volume. This means if the price goes up or the costs go down, the royalty goes up once the R-factor is over 2. However, the royalty remains the same with higher volumes. This behavior of the combined royalties is illustrated in the three charts below, which include the 5% minimum bid.

Government Take Analysis and Comparisons with Other Countries

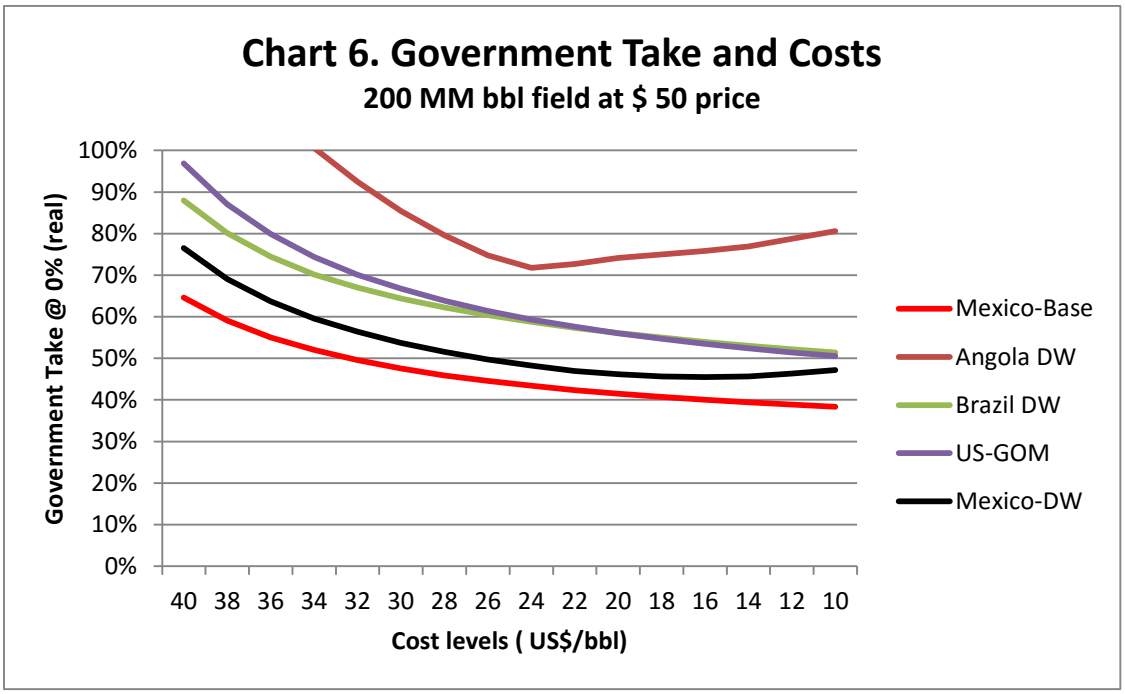
Comparisons were made with Angola, Brazil and the US Gulf of Mexico in order to study whether the terms are fiscally competitive.



The government take comparison indicates that for prices below $ 80 per barrel, the deep water Mexican terms would be rather attractive. Nevertheless, even over this price level the overall level of government take is very competitive generally.

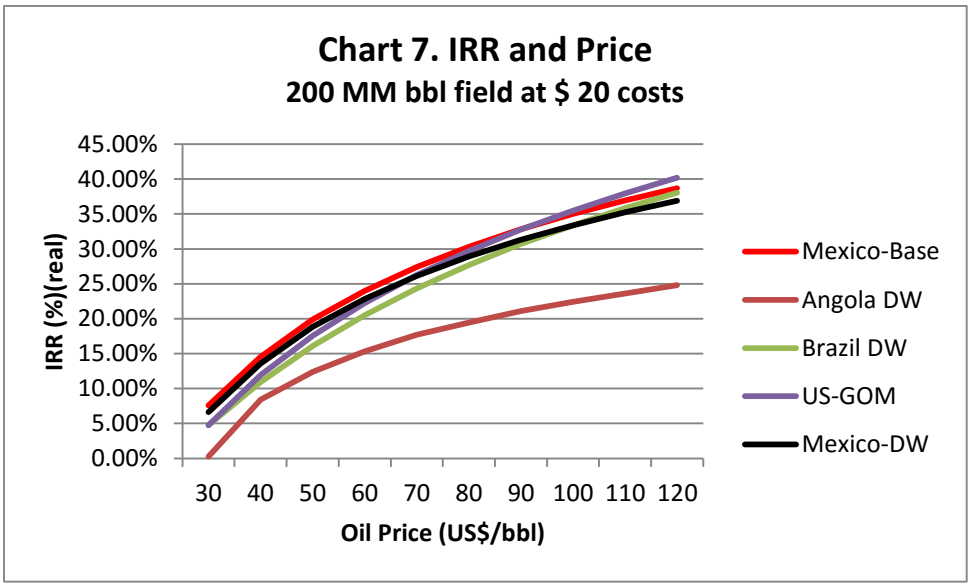


Comparing the fiscal terms by volume and at an oil price of $ 50 per barrel, the Mexican terms would be rather generous. This lack of volume progressivity is a serious deficiency of the system from a government perspective. If very large fields would be discovered, the government take would definitely be too low on a competitive basis.



Also the comparison based on different cost levels in Chart 6 indicates that the terms would be rather generous as well for the entire range of cost conditions.

From a fiscal perspective therefore, assuming SHCP establishes a minimum bid of 5%, the terms can be considered attractive. Whether actually bids will be received on the various blocks depends on the attractiveness of the geology of the blocks. The IRR to the investor for various price levels is provided in Chart 7.

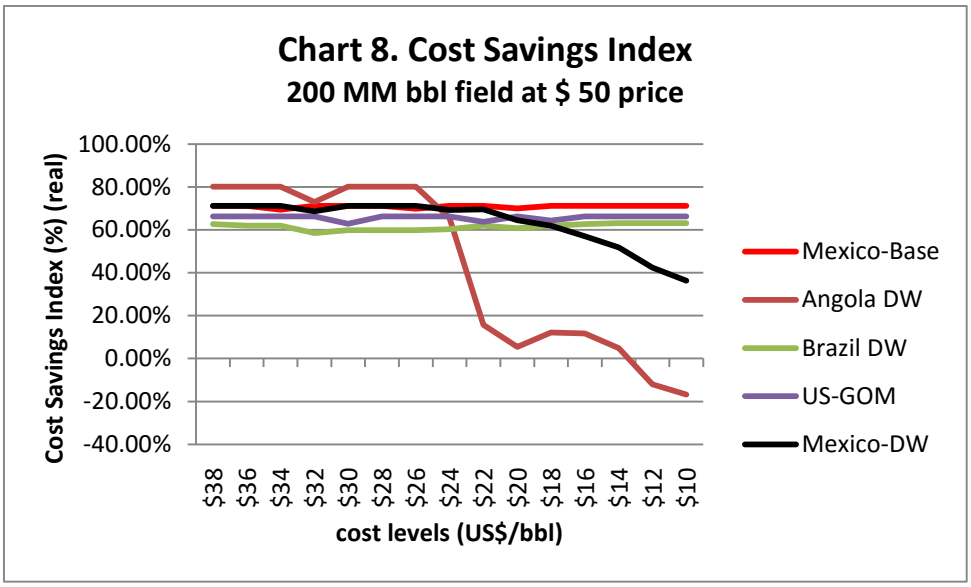


Gold plating analysis

"Gold plating" means that if the investor manages to save a dollar, that there is no benefit to the investor. In other words, the entire benefit goes to government and sometimes even more than a dollar goes to government, which seriously discourages efficient operations. The gold plating can be measured with the Cost Savings Index. If the government gains $ 0.60 for a $ 1 saving, the Cost Savings Index is 40% because the investor keeps 40% of the saving. If the government retains $ 1.20, the Cost Savings Index is -20%. A negative Cost Savings Index indicates gold plating.

Typically fiscal systems based on an IRR, such as of Angola, result in considerable gold plating. Most R-factors in the world result in a modest level of gold plating. The Mexican R-factor is rather robust. As can be seen from Chart 7 containing the Cost Savings Index analysis, the index remains rather robust at 36% even at cost levels of $ 10 per barrel.

One of the reasons that the Mexican R-factor is remarkably robust is in because the base royalty is already price sensitive. This means there is less reliance on the R-factor to get an acceptable government take. In general, it seems to be a highly effective way to capture the resource wealth from this perspective. This concept can therefore be recommended for other countries.



Bid Formula

The bid formula is as follows for deep water:

VPO = 4 * [Additional Royalty + (11.5* (Additional Royalty/100) + 3.45)* Investment Factor]

The investment factor is either "1" or "0" depending on whether or not a second well is being committed to in the exploration area.

It is unclear why the results in the bid formula have to be multiplied by 4.

In general, it seems that more emphasis is now placed on additional work than with the prior bid rounds. Nevertheless, the formula remains overwhelmingly oriented towards the highest possible additional royalty.

This has the negative effects of creating too much emphasis on government income per barrel rather than the full development of the contract areas.

During the onshore bidding round in 2015, considerable over-bidding took place. Over-bidding is caused by the fact that there is no hard cash outlay as part of the bid. This means that companies in order to win the bid can "gamble" on economic and geological conditions that are very optimistic. If these conditions do not materialize, companies can surrender the area (after having completed the relatively modest minimum work program).

This is not really in the interest of Mexico, since the likelihood that developments will not be economic is high as a result of such over-bidding. This derails development of oil and gas discoveries which would otherwise have been economic. It also prevents incremental investments in secondary and tertiary recovery techniques in order to maximize recovery of oil and gas.

ASSOCIATION CONTRACT WITH PEP FOR TRION

Description of the Fiscal Terms

The Trión area is situated among the deep water blocks on offer in 2016. This deep water block has the same fiscal terms as the regular deep water terms, discussed above. The only difference is that the cumulative costs in the R-factor now also include a start out value of $ 380 million dollars.

PEMEX EXPLORACION Y PRODUCTION ("PEP") will own a 45% working interest in the block based on a joint operating agreement. The bid is therefore for a 55% working interest. Operator will own as a minimum 30%.

Up to $ 464 million PEP does not have to contribute its share. In other words the 55% working interest owners will have to contribute $ 567 million before they would cash call PEP for its share.

Bid Formula

The only bid variable will be the percentage additional royalty, subject to the maximum possible bid for this additional royalty.

In case two companies offer the same maximum additional royalty, the winning bidder will be determined based on the bonus amount.

Three bonus bid levels have been identified in the bid conditions:

- Up to $ 380 million, of which Y1% represents a bonus
- Between $ 380 and $ 760 million, of which Y2% represents a bonus
- Over $ 760 million, of which Y3% represents a bonus .

The amounts (1- Y1%), (1-Y2%) and (1 - Y3%) are added to the $ 464 million, and therefore increase the "carry" for PEP. However, these percentages have not yet been established.

Without knowing the maximum additional royalty percentage and bonus sharing percentages, it is somewhat difficult to do economic analysis on this contract. This is a major concern since the bids will have to be submitted on December 5, 2016; less than 100 days from now.

Whether or not these bid conditions may result in over-bidding depends entirely on the maximum additional royalty percentage.

Joint Operating Agreement

The Joint Operating Agreement has been written in such a manner that the particular financial situation of PEP is carefully considered. It is likely that PEP may not be able to contribute their 45% share of the funds necessary for the development of one or more discoveries. In some JOA's his would result in the non-performing party losing their working interest.

In the case of the JOA with PEP, such funds will be provided by the performing parties. These parties are entitled to recover these costs with interest from the sale of PEP's share of oil and gas production. The interest (called "Moratorium Interest") is set at LIBOR plus 6 percentage points.

Of course, the requirement for PEP to contribute funds starts only after the "carry" period.

In practice therefore, if PEP does not contribute, PEP's interest is converted into a 45% working interest after payout (calculated including application of the Moratorium Interest).

This concept is similar to a variety of other JOA's in the world with state oil companies which unlikely have the ability to contribute financially. It is therefore not an unusual or unique concept. It fits the particular conditions of PEP very well and should make the implementation of the JOA easier.

Nevertheless, this concept is equal to a 45% extra profit share after payout, payable by the non-PEP parties. This is a rather heavy additional fiscal burden for investors.

Whether or not these terms are competitive under the current low oil prices depends primarily on the attractiveness of the Trión geology.

The Trión bid may fall victim to the stacking up of too many government and PEP objectives: creating a significant working interest, a carry and easy financing for PEP together with a high additional royalty and possibly a considerable bonus for Mexico.

SHALLOW WATER PRODUCTION SHARING CONTRACTS

Shallow Water Circumstances

The shallow water area in Mexico is very mature. Pemex has already discovered and developed the most attractive shallow water oil and gas fields, including the giant Cantarell field. The potential of discovering large and low cost oil and gas fields in Mexico's shallow water regions is low. While significant exploration potential remains, it is likely that most discoveries will be smaller fields with relatively high costs. Also, natural gas prices in Mexico are lower than in most areas of the world.

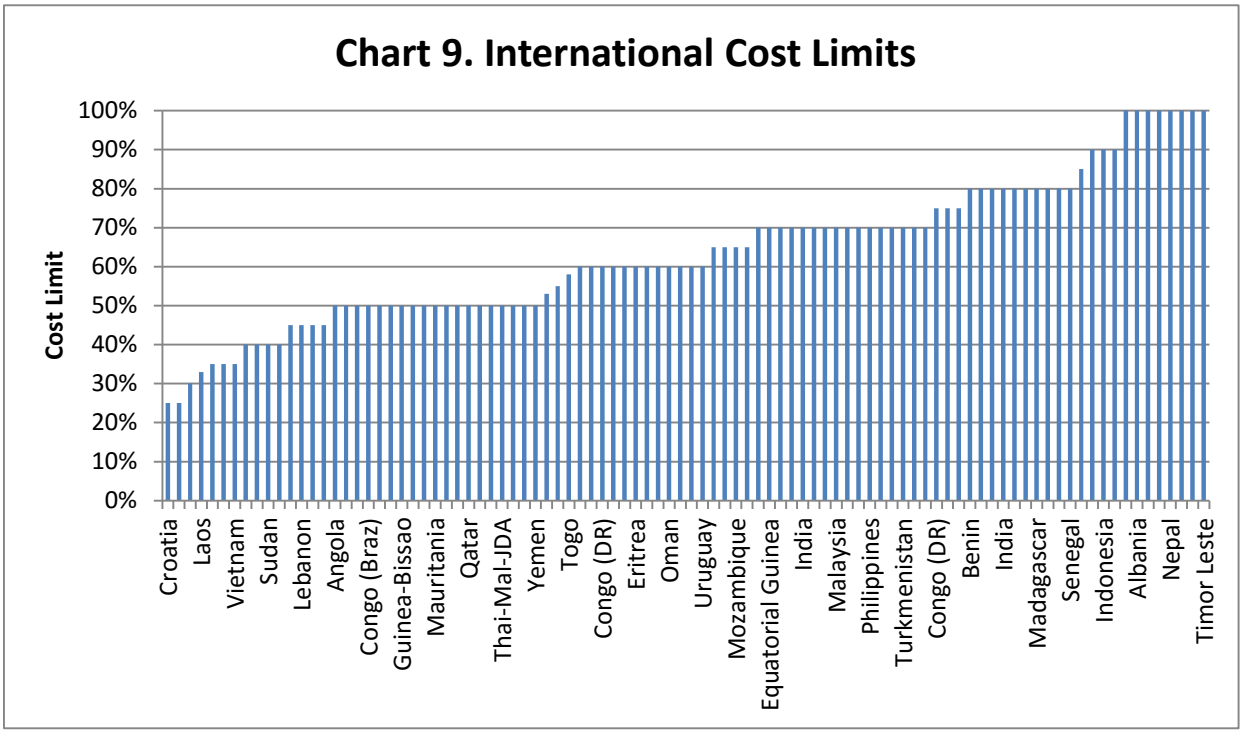
Two bid rounds were held in the shallow water areas. The first bid round related to exploration blocks, the second round related to discovered fields. The third shallow water bid round will relate to exploration acreage.

Description of Fiscal Terms for the First Bid round

The Cost Recovery

Mexico established a 60% cost limit for oil fields and 80% for non-associated gas fields.

The Chart 9 illustrates the cost limits of all PSCs countries in the Van Meurs Petrocash data base. It can be seen how a 60% cost limit reasonably matches the international average at this point in time. This is therefore an acceptable competitive level for oil. The 80% cost limit for gas is attractive.



There is no depreciation of capital costs required for the recovery of the costs under the Model PSC. This means for cost recovery purposes all costs are expensed. This is also a widely used international practice.

The basic cost recovery framework for the PSC Model is therefore sound and in accordance with international practices.

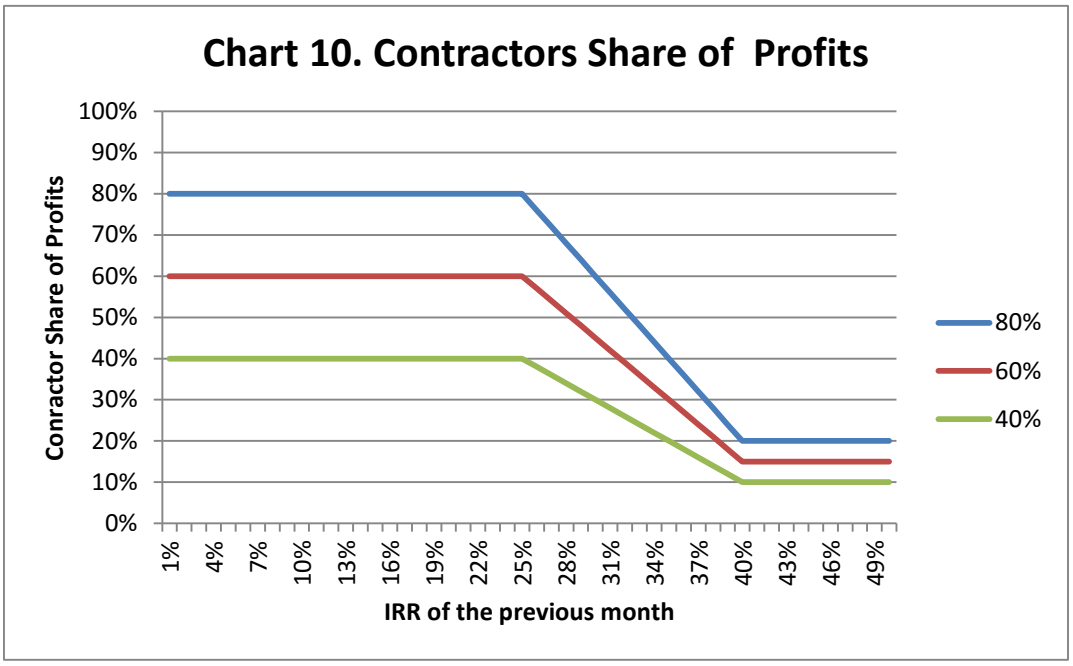
Adjustment Mechanism for the APS

The LISH requires that a petroleum contract contains an adjustment mechanism in order to effectively capture the extra-ordinary profits. This is consistent with prudent international practice and is essential if Mexico is to fully benefit from its resource development. Mexico is using for the third shallow water bidding round the same IRR system as was used for the second round.

The Contractor share of the profits after deduction of royalties and costs was a bidding parameter. This share was reduced depending on the IRR in the previous month. The share of profits for the Contractor is maintained up to an IRR of 25%. Thereafter the share is reduced linearly to 25% of the bid amount at an IRR of 40%.

For instance, if the investor bids a share for the government of 20% and for the contractor of 80%, the share to the contractor will be reduced to 20% when the IRR reaches 40%. Chart 10 illustrates this concept.

In order to calculate the IRR, the exploration costs are uplifted to 400% of the outlays. This is a significant uplift.



Crucial to the success of the bid round is the minimum % profit share that the SHCP will determine.

Economic analysis of the fiscal terms of the third shallow water bid round

This analysis assumes that SHCP will permit a minimum share for government of 20%.

Chart 11 illustrates how at this level the Mexican Round 2-1 shallow water terms would be competitive for the entire price range and would be relatively attractive under low prices for investors in terms of cash generation.

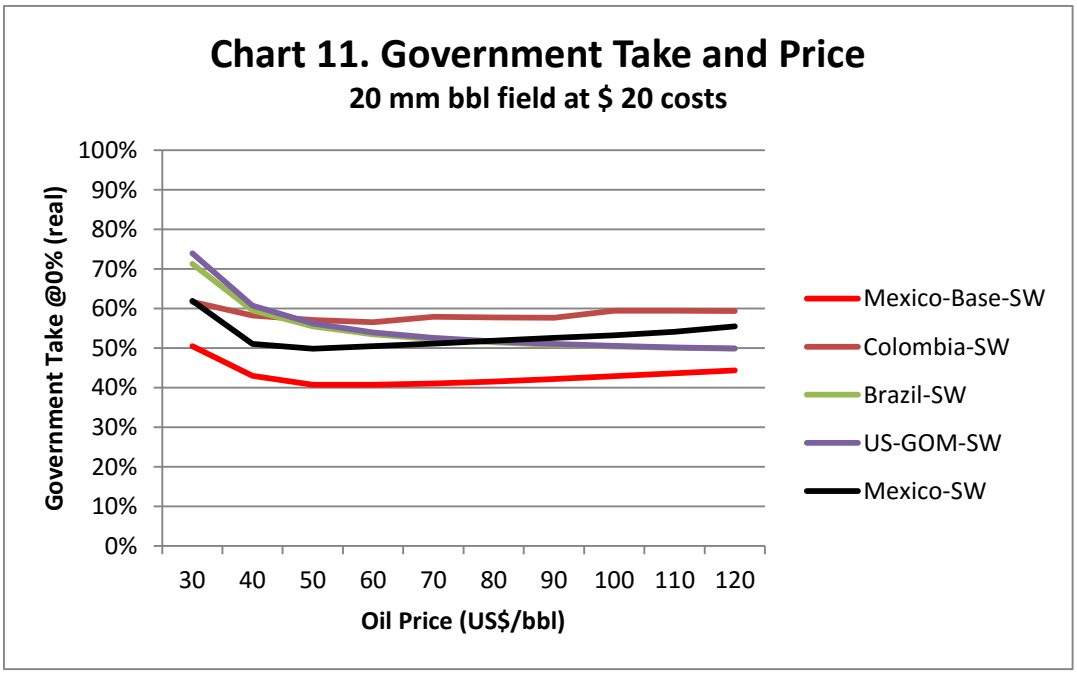


Chart 12 illustrates the volume sensitivity. At a price of $ 50 per barrel the government take is slightly progressive under low volumes. This is due to the Exploration Uplift which has a significant impact on small fields. Under higher prices, the system becomes stronger volume progressive, because the positive effect of the exploration uplift starts to affect the IRR calculation more progressively.

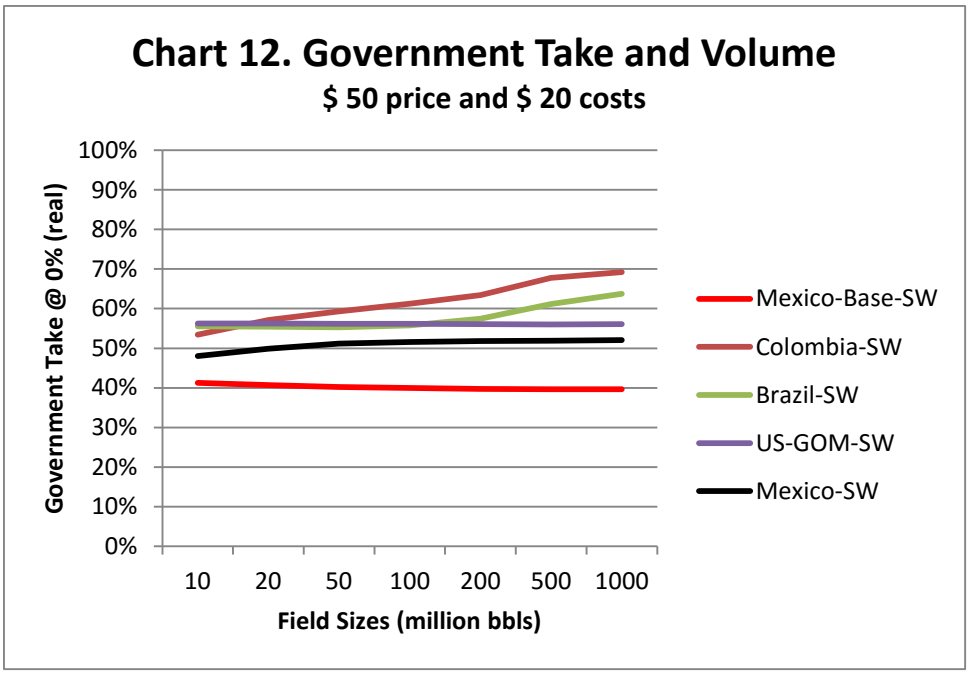


Chart 13 illustrates the cost sensitivity. As can be seen the system is competitive over the entire cost range at $ 50 per barrel and would be very competitive under high costs from an investor point of view in terms of cash generation.

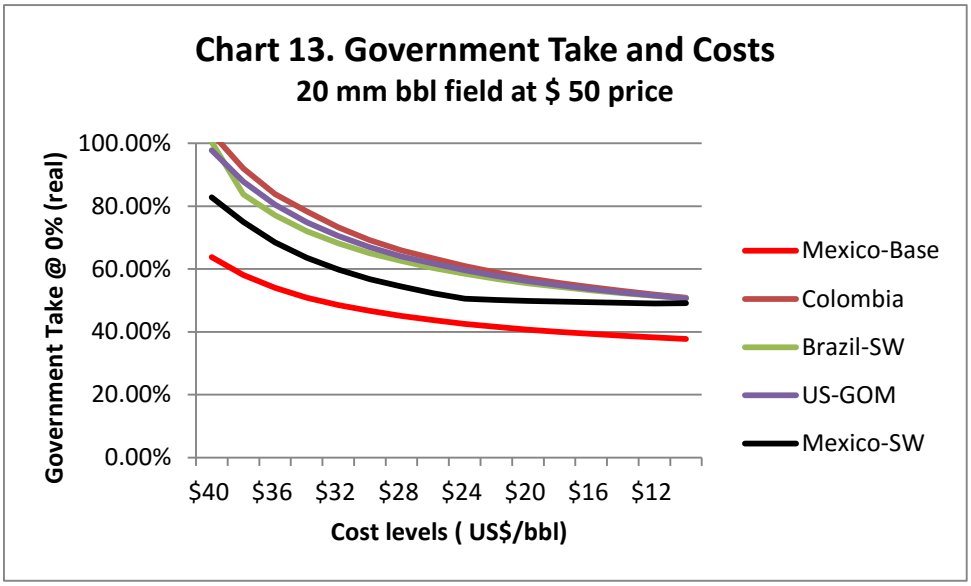
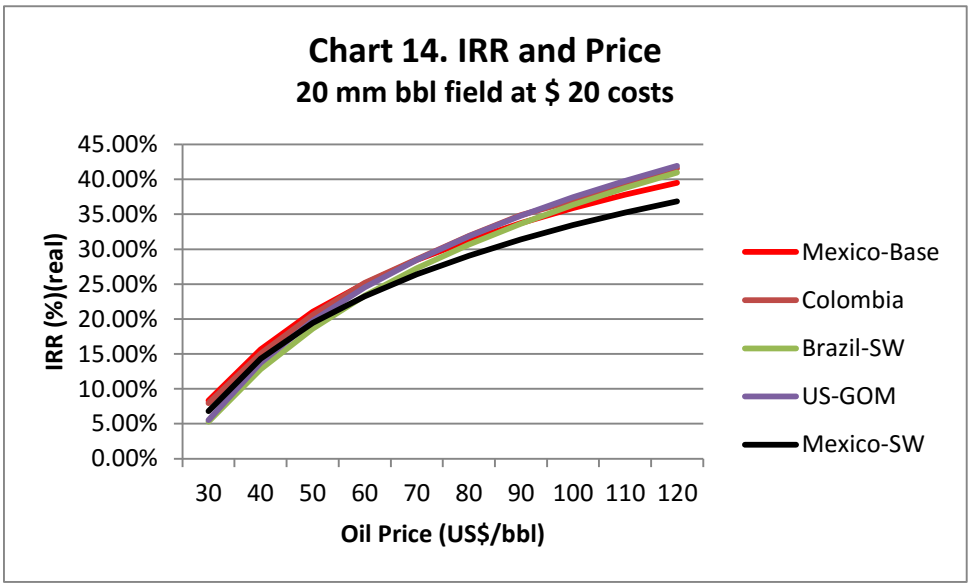


Chart 14 illustrates the IRR based on price sensitivity. Up to $ 70 per barrel the proposed system would be rather competitive at a bid of 80% profit share for the contractor.

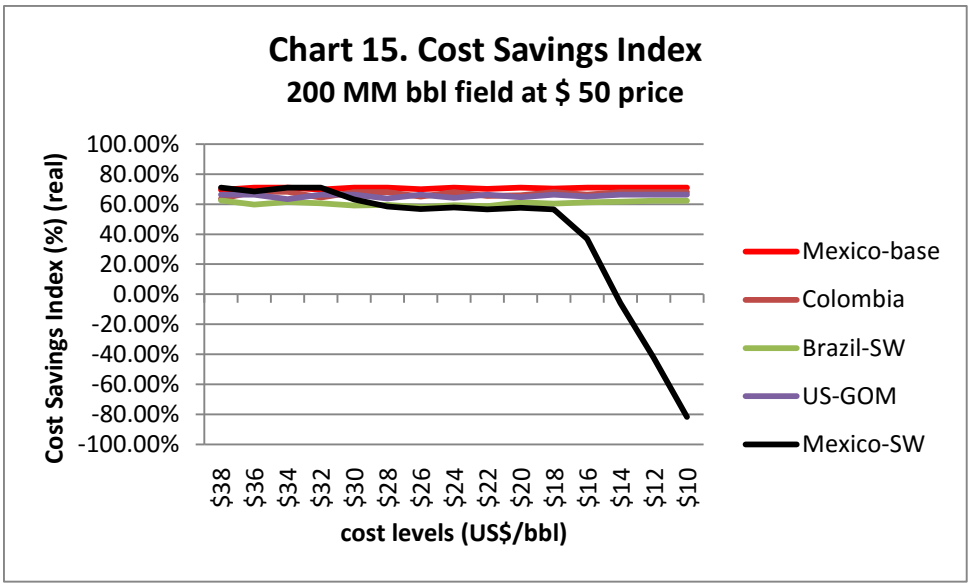


Deficiencies in the structure of the government take

Cost Savings Index analysis

The exploration uplift of 400% of the minimum work program costs, affects the IRR strongly, since these outlays occur early in the cash flow. This makes it more difficult to reach the benchmark of 25% IRR, in particular for small fields. As a result gold plating is suppressed with this feature.

Chart 15 illustrates the Cost Savings Index for a large shallow water field of 200 million barrels. Only under relatively low costs, the system features gold plating. In general it seems that for this particular set of fiscal terms gold plating is not a serious concern, despite the use of the IRR concept.



Volume Progressivity

The Exploration Uplift creates some volume progressivity under low prices and under favorable economic circumstances of high prices the effect is rather strong. It is an adequate way of creating volume progressivity in an indirect way.

A problem may be with this method is that companies would have a very strong incentive to "over bill" their minimum work program exploration costs. It is not clear from paragraph 6.3 of Annex 3 whether Mexico intends to use the work unit values or the actual incurred costs for the Exploration Uplift.

The Bid Formula for the first bid round

An important aspect of the proposed fiscal system is the bid formula. This is the formula that is being used to determine the winning bidder.

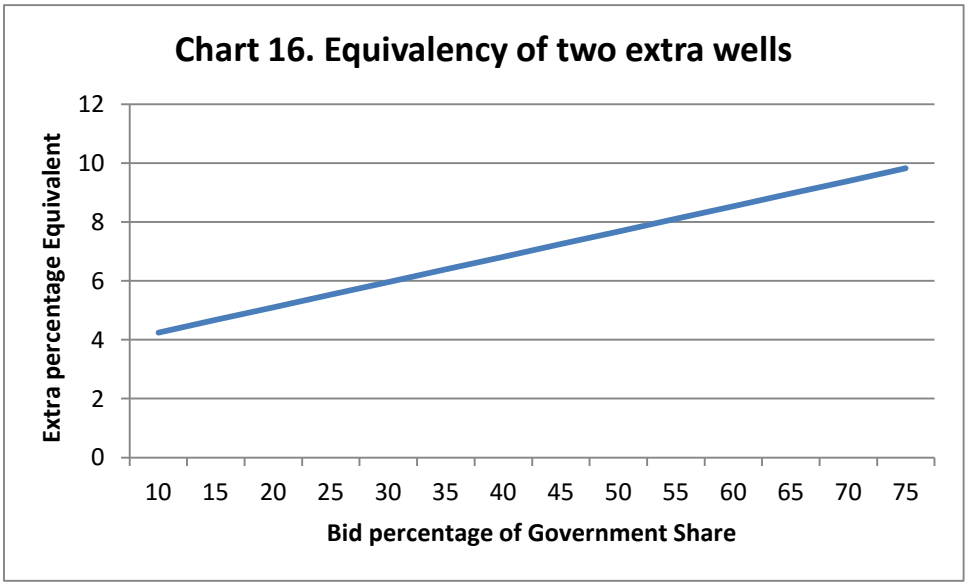
The bid formula for this bidding round is the following:

VPO = Participation + (5.72* (Participation/100) + 2.26)* Investment Factor

The "Participation" is the profit share that is being offered by the bidder to the Government.

The "Investment Factor" is 0, 1 or 1.5. It is 0 is no additional investment is offered, 1 if work units equal to an extra well are being offered and 1.5 is work units equal to two extra wells are being offered.

Chart 16 illustrates the equivalency in extra bid percentage if the bidder offers two extra exploration wells during the exploration period. If the bidder offers 20% profit share to the State plus two extra wells, it counts as 25.106%. In other words a bidder offering 26% and no extra wells would still be the winner. If the bidder offered a 70% share to government two extra wells count as 79.396%. In other words a bidder offering 80% is still the winner.



Given the fact that the extra work requires a higher work commitment guarantee and the higher bid percentage without work does not, this system provides a strong incentive for over bidding.

ONSHORE LICENSE CONTRACTS

Onshore block conditions

The second onshore bid round is for exploration blocks.

The blocks therefore represented ideal opportunities for small companies to enter the petroleum industry in Mexico and for companies which won blocks in the first bid round to expand their operations.

However, many of the blocks would require upgraded midstream infrastructure to effectively produce the hydrocarbons. This may cause significant problems in the future.

Description of Onshore Fiscal Terms

The Onshore terms are identical to those of the first onshore bid round. In addition to the Base Terms for Mexico discussed above, the Onshore License Contracts have a simple Additional Gross Revenue Share (as an additional royalty). This is the bidding parameter.

Since the Additional Gross Revenue Share is directly based on gross revenues it will not result in any gold plating. This is a significant improvement relative to the IRR concept used in the PSCs for shallow water.

The proposed Additional Gross Revenue Share is also progressive with volume. This is another improvement on the previous PSC concepts.

The Adjustment Mechanism now consists of the bid percentage plus a volume based sliding scale in order to increase the percentage where high volumes of oil and gas are produced.

For oil the extra percentage is 0% for volumes of less than 30,000 bopd for the Contract Area. The percentage is 20% for volumes in excess of 120,000 bopd. In between these two points there is a linear sliding scale. The royalty rate is deductible from the extra percentage rate. This means that under very high oil prices, the extra percentage is actually zero, since the royalty would be 20% or higher.

For gas the extra percentage is 0% for volumes of less than 80 million cubic feet per day for the Contract Area. The percentage is 10% for volumes in excess of 240 million cubic feet per day. In between the scale is linear and again the royalty is deductible.

At this time the Henry Hub gas price is relatively at just about $ 2.75 per MMBtu. The bid formula is based on the same additional royalty for oil and for gas. It would have been better to include provisions for an additional royalty for gas that would be lower than for oil.

Economic Analysis of the Onshore Fiscal System

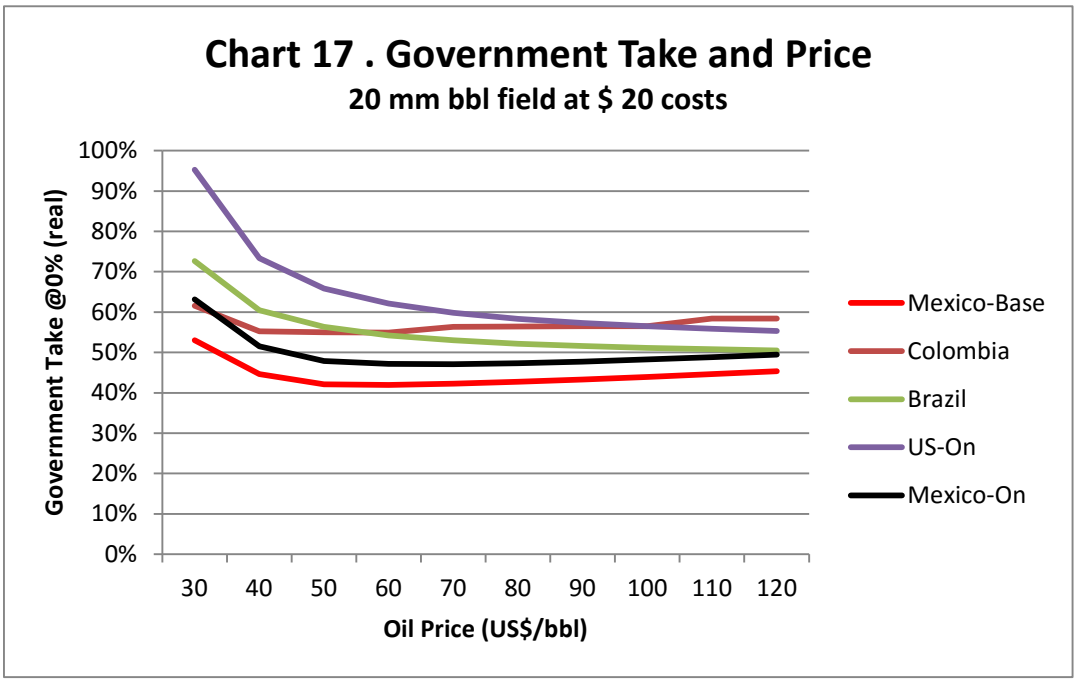
An analysis was done on the fiscal terms contained in the Annex 3 of the Onshore Model Contract, assuming an Additional Gross Revenue Share of 5%.

The proposed terms were compared with onshore terms for Brazil, Colombia and typical US onshore terms.

Government Take Analysis

The undiscounted government take in real terms was evaluated for changes in price, volume and costs. The results are provided in Charts 17 through 19.

With respect to price, in Chart 17 the undiscounted government take for the Mexico onshore bid round terms is generally less than competing countries for the entire price range, assuming an additional royalty of 5%.



With respect to volume, Chart 18 illustrates how the Mexican system would be competitive for the entire volume range. The volume progressivity included in the formula is modest for onshore conditions.

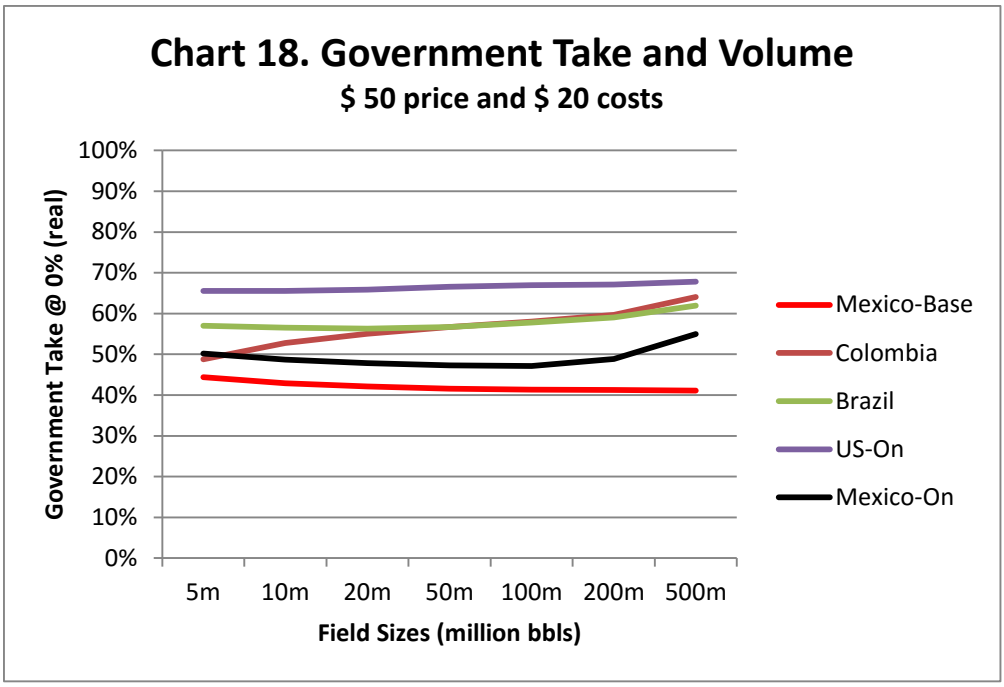
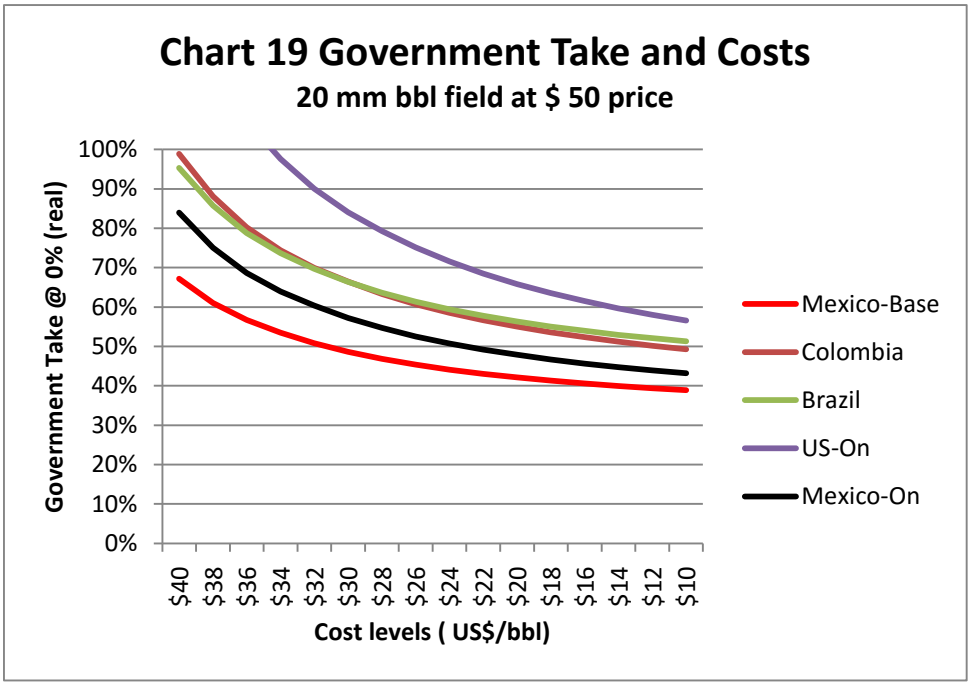
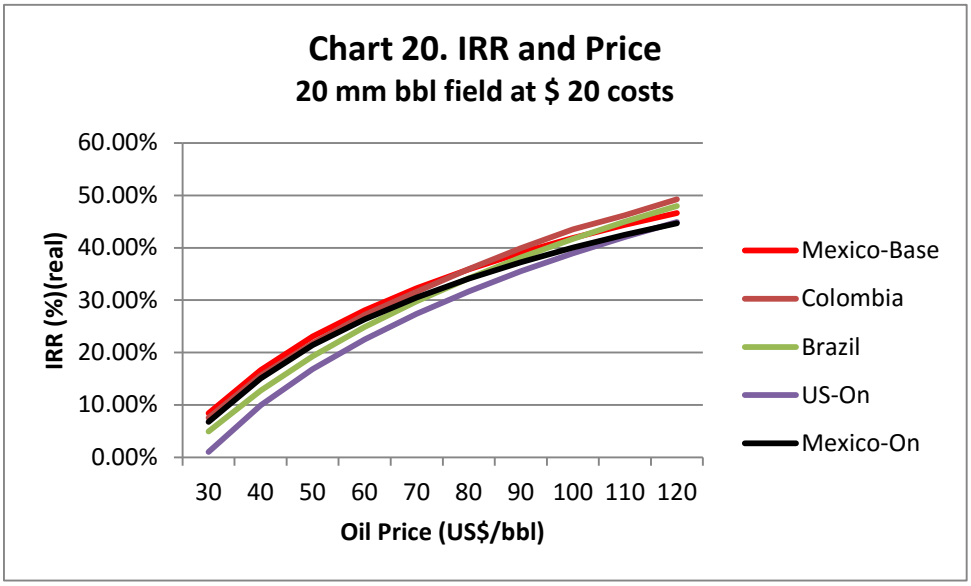


Chart 19 illustrates the economics under different costs. The Mexican system is again competitive for the entire cost range with competing countries at an oil price level of $ 50 per barrel.



It can be concluded that the proposed Mexican system, assuming a minimum bid percentage of 5% additional royalty is fully fiscally competitive with other countries with respect to crude oil economics. Also the system is structurally sound.

Chart 20 illustrates this fact with the IRR to the investor compared to competing countries. Under low oil prices, the IRR is slightly higher.



Bid formula and Bid Process

Bid formula

The bid formula for the onshore blocks has the same structure as for the shallow water blocks as follows:

VPO = AddRoy + (7.55*AddRoy/100 + 1.33)*Investment Factor

Also in this case the Investment Factor is 0, 1 or 1.5 depending on whether the bidder offers zero, one or two additional wells. Also in this case the bid formula remains significantly slanted to the additional royalty.

The excessive emphasis on the highest possible additional royalty will lead for most blocks to an under-development of the block.

Also this concept will induce considerable over-bidding. The first onshore bidding round features very significant over-bidding.

For instance, Canamex Dutch bid an additional royalty of 85.69% on the Moloacán block. Together with the regular royalty this means a total royalty (when the oil price is $ 48 per barrel or less) of 93.19%. When the oil price returns to over $ 100 per barrel the royalty would be higher than 100%.

Renaissance Oil offered 80.69% royalty on the Mundo Nuevo block.

It should be noted that on many blocks royalties in excess of 50% were bid. It is simply not possible to develop blocks containing relatively marginal oil and gas fields under these royalty levels. So, this will now create serious problems for CNH. There will be strong pressure from the companies to get out of their commitments while hanging on to the blocks. It is therefore not at all in the interest of Mexico to encourage such over-bidding.

The extreme royalty bids will also require a serious watch for possible corrupt practices. Some of the bidders might have the view that with political influence fiscal terms that were offered can be changed after they have won the block.