OIL & GAS 102

Alaska Legislature

January 2020

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be in the know

INTRODUCTION

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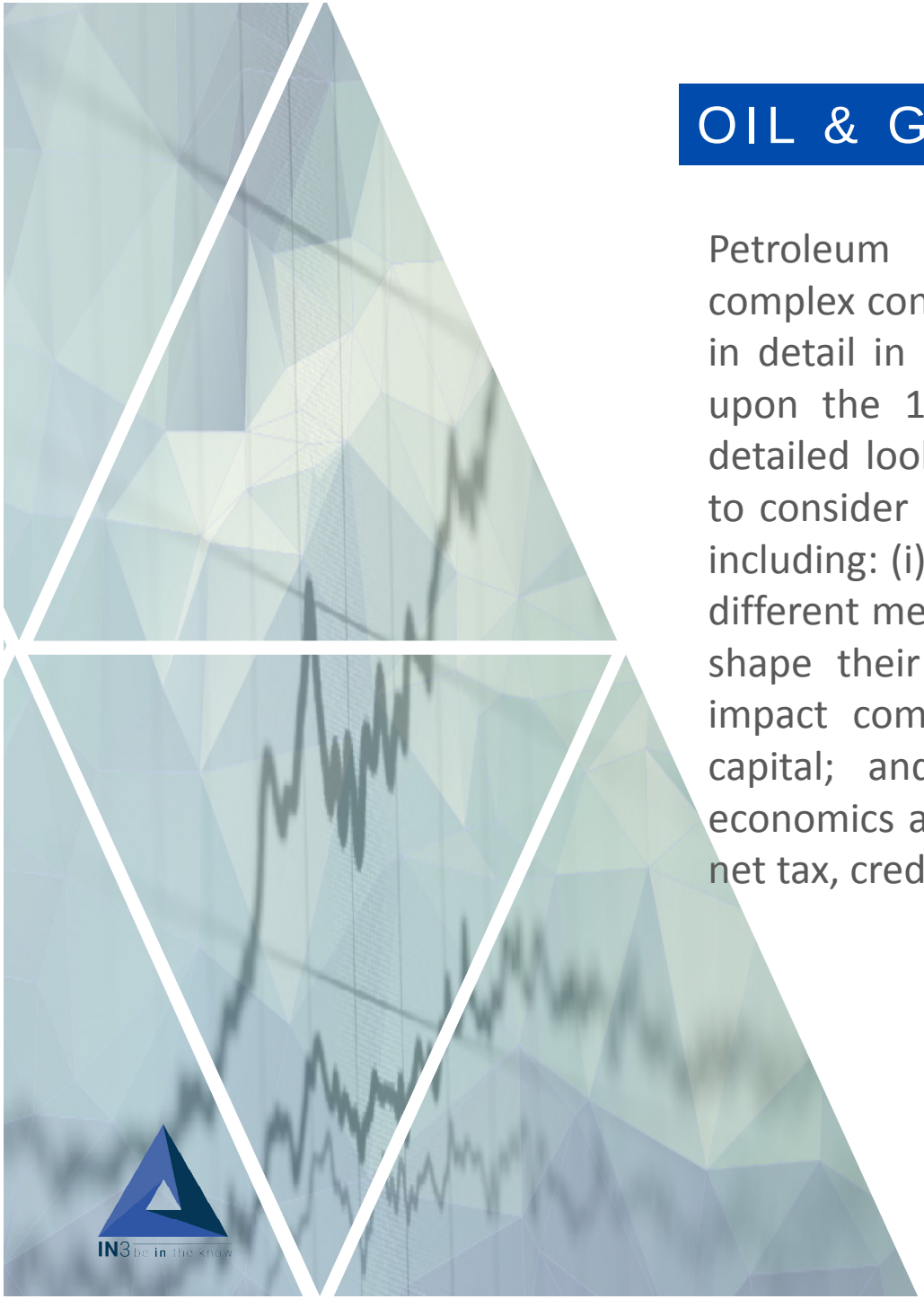

OIL & GAS FISCAL DESIGN 102

Petroleum Fiscal Policy involves many different, complex concepts, that can't even begin to be covered in detail in a two-hour session. This workshop builds upon the 101 course and provides a slightly more detailed look at the many issues a government needs to consider in developing their petroleum fiscal policy including: (i) The petroleum fiscal toolbox and its many different mechanisms that are used by governments to shape their policy; (ii) aspects of fiscal policy that impact company thinking on where to invest their capital; and (iii) a generic look at how project economics are impacted by items such as gross versus net tax, credits, net operating losses, etc.

OIL AND GAS FISCAL DESIGN 101

AVAILABLE FOR REVIEW

- This 102 workshop builds upon the concepts reviewed in the Fiscal Design 101 workshop that was presented the past three days

- A copy of the slides for that workshop can be found at :

https://lba.akleg.gov/

EXPECTATIONS FOR THE 102 WORKSHOP

FISCAL DESIGN 102

- This is a training and information sharing session
- Our intent is to provide background and context on petroleum fiscal policy design and **not to discuss specific bills or regulations**
- We will not be offering opinions today on what to do – but can go over some of the pros and cons of certain actions or issues you may be considering or want to discuss
- This is for your benefit to be better informed and better prepared for whatever proposed oil and gas taxation issue comes before you
- Please do not hesitate to ask questions anytime during the presentation
- We are available today through Monday for individual or small group follow up sessions to answer questions or provide additional detail

PHILOSOPHICAL APPROACH

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YOUR STEWARDSHIP ROLE

ENSURING ALASKA'S FAIR SHARE

- The role of the government is to ensure the optimal development of its natural resources for the near-term and long-term benefit of its people
- Governments routinely seek the advice of numerous experts as well as encourage industry participants to provide input into its various petroleum policy deliberations
- They often hear that their overall share of the pie has been "too low", "about right" or "way too high" – sometimes all at the same time
- Notwithstanding, the advice and recommendations of experts and knowledgeable industry participants is necessary for development and improvement of a fiscal system
- So, how should governments go about achieving their goals?

FIRST, YOU MUST ASK PROBING QUESTIONS

MENTOR'S 1976 WORDS MORE TRUE TODAY

- **"Torture numbers and they will tell you whatever story you want to hear!"**

- Today, much more so than in the past, we can be overwhelmed with copious amounts of data and sometimes conflicting expert opinions based on various subsets of the available information

- We often glance at a headline or read part of an article and draw quick, sometimes incorrect conclusions

- You should always be asking yourself, "What is it that they are not saying?", or "What data or information did they not use or hope you would not find?"; e.g.
  - ***"Alaska is non-competitive as it has a government take greater than [over half the world] or [its world-wide peer group]"***
  - What usually isn't said, but should have been:
    "Over half the investment capital is spent in countries with a higher government take than Alaska. Here is why…"

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BASIS OF EXPERTS' PREDICTIONS

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- Experts are usually accurate at understanding the history of a particular topic, but their track record on predicting the future is not that great. For example:
  - During AGIA (circa 2008) multiple industry and independent experts testified to a very limited SE Asia growth market for LNG, thus recommending a gas pipeline from the NS to the Lower 48
  - Looking back 12 years later, the actual SE Asia LNG market growth was 5 to 6 times larger than the 2008 expert consensus
  - You should ask: How? What happened? What were we not told?

- Governments need to resist designing fiscal policy around one general view of the present or the future

- **Fiscal policy should be developed such that is has some resilience across multiple possible future scenarios**

FISCAL DESIGN TAKES WORK

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- Policy design should start with a set of agreed goals
  - These tend to be unique for each government
  - When looking at comparisons, understand each government's goals, and not just their tax rate, if they are listed as being in your peer group
- When being developed, policy should be tested against several possible future scenarios. It must be as resilient as possible
- Do not automatically accept advice at face value, always dig deeper until you are comfortable with the analysis
- If policy is going to define action based on a fixed term or value, make sure you understand how it was determined. For example:
  - **"The crossover point from net tax to gross tax is $72/bbl"**
  - This true only for one specific set of costs, a snapshot in time which may never be repeated

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THERE IS NO SINGLE IDEAL STRUCTURE

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- Why are we being so emphatic that you understand the nature of the data being presented more than at a cursory level?

- After over a century of trying, and ever improving fiscal tools and terms, there is still **no single universally ideal or optimum petroleum fiscal structure**

- Why is that?
  - Each reservoir is unique
  - Oil companies commit to developing these resources without absolute certainty of costs or prices
  - Each governing country's/state's goals and situations are unique
  - Governments work to create fiscal structures that will achieve their specific goals, circumstances, needs and drivers
  - Companies and governments must work in partnership on a workable compromise of sometimes conflicting goals

THERE IS NO SINGLE IDEAL STRUCTURE

FISCAL DESIGN 102

- Producers, in making decisions where and when to invest, will assess the attractiveness and risk of doing business based on the whole package, and not just the individual items or aspects in the fiscal structure, e.g.:
  - All costs not just allowable costs
  - Rate, direction and magnitude of regulatory and law changes
  - Unique local content requirements

- Governments try to use “best practices” and the “best tools” but routinely make modifications to them to meet their particular stewardship obligations. Some typical drivers of government fiscal policy design include:
  - Short term revenue needs vs building multi-generational wealth
  - Short on reserves (need to drill) or long on reserves (need to produce)
  - Providing affordable/discounted domestic energy supply
  - Growing associated industries (e.g. Petrochemical, Power)
  - Creating long term jobs for the country
  - Creating a national oil company

CHANGE IS THE ONLY CONSTANT

INDUSTRY'S MAIN DRIVER

- The Petroleum industry has continually undergone change, thus it's important to balance preparing for the future while addressing the present in a global market, where no single region, player, or component is isolated from another, and where governments design fiscal policy that is responsive to a complex and sophisticated business environment in a global competition for oil company investment dollars

- In other words, when putting together petroleum fiscal policy you must assume an unpredictable future that can range from much better than hoped to much worse than feared

- The more durable fiscal systems today are those set up to respond to inevitable change as well as the up and down cycles of the energy industry and geopolitical events

GOOD FISCAL DESIGN ANTICIPATES CHANGE

CAUTION WHEN DESIGNING STRUCTURE

- The fiscal structures most in need of fixing or revamping are usually those that have been designed based on historical data relationships instead of building self correcting systems

- Those ‘broken’ structures share a common feature - setting legislation and regulation around a specific reference **value** which is relevant today, but may be vastly different or be of less importance in the future
  - Example: setting specific price points for tax rate changes based on an implied level of profit (versus actual profit level) at those price points
  - In the not too distant future, cost structures and production levels will change, sometimes significantly, changing the implied ‘profit’ at those price points

- **Good petroleum fiscal policy is one that learns from (not replicates or repeats) the past and is designed to succeed in the inevitably changing future**

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COMPETING FOR CAPITAL

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COMPETING FOR CAPITAL AND MARKETS

ALASKA VERSUS THE WORLD

- Governments, who control the vast majority of mineral resources globally, generally lack the requisite resources to effectively and efficiently exploit their mineral riches

- The necessary investment **capital**, trained **personnel** and **technology** are largely held by the private sector

- Every year, sometimes multiple times throughout the year, in boardrooms across the globe oil companies will discuss **the relative attractiveness of investing in Alaska versus the lower 48 as well as internationally**

- **With large deposits of stranded gas where an LNG export option with the necessary associated long-term contracts is needed, potential producing projects have to compete for markets in addition to competing for capital**

OIL COMPANY DECISION MAKING

THEIR OWN STANDARDS

- E& P Companies require that all long-term projects be evaluated in a consistent manner and as such create economic standards

- Typical parameters that are established as a “corporate” standard include:
  - Multi-Year Price Forecast
  - Multi-Year Foreign Exchange Rates
  - Multi-Year Inflation
  - Discount Rates
  - Overhead Allocation
  - Required Sensitivities
  - Risk Analysis Methodology
  - Hurdle Rates for Project Approval

COMPETING FOR CAPITAL AND MARKETS

THE COMPETITION IS CONTINUALLY CHANGING

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INSIGHT. INQUIRY. INGENUITY.

GROWING PRESENCE OF ASIAN COMPANIES

ACTIVE NOCS OFFERING MORE THAN JUST CAPITAL

These Asian players were essentially non-existent prior to 2000

ALASKA CONTINUES TO CHANGE AS WELL

OIL AND GAS INDUSTRY IN ALASKA

- Tax credits brought in new players whose activity generated several possibly large discoveries
- North Slope oil production reversed after years of continual decline and essentially leveled out for a few years
- New federal laws bring new opportunity in areas like ANWR and NPRA, but fewer regulations and the opening of the US continental shelf to drilling brings more competition for the investment dollar
- As 20+ years of work has shown, full gas development brings with it many issues quite different from oil and would require significant fiscal changes
- Is Alaska's fiscal policy resilient enough to attract capital and capture additional upside from inevitable changes? Can Alaska adapt and respond quicker than competing states or countries?

FISCAL TOOLBOX

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IT IS ALWAYS ABOUT SHARING BENEFITS

PETROLEUM INVESTMENTS

- Resources in the ground are mostly owned by governments; however, they need private sector help to monetize them

- Oil companies are encouraged to invest in one country or state versus another based on the fiscal frameworks perceived to offer the companies the best opportunity to earn returns via the:
  - Method of sharing benefits
  - Degree of sharing benefits
  - Timing of sharing benefits
  - Perception of Risk / Reward balance

- Regimes and fiscal systems that share benefits that align with oil company investment decision-making metrics, timing and processes can be expected to attract the most investment dollars

IDEAL GOVERNMENT SHARE

ECONOMIC RENT

- Determining a government's fair share of petroleum profits is not, and never has been, an easy task
  - Ideally, governments try to set their petroleum fiscal terms to capture 100% of the rent generated after the oil company has made a “reasonable fair return” on their investment

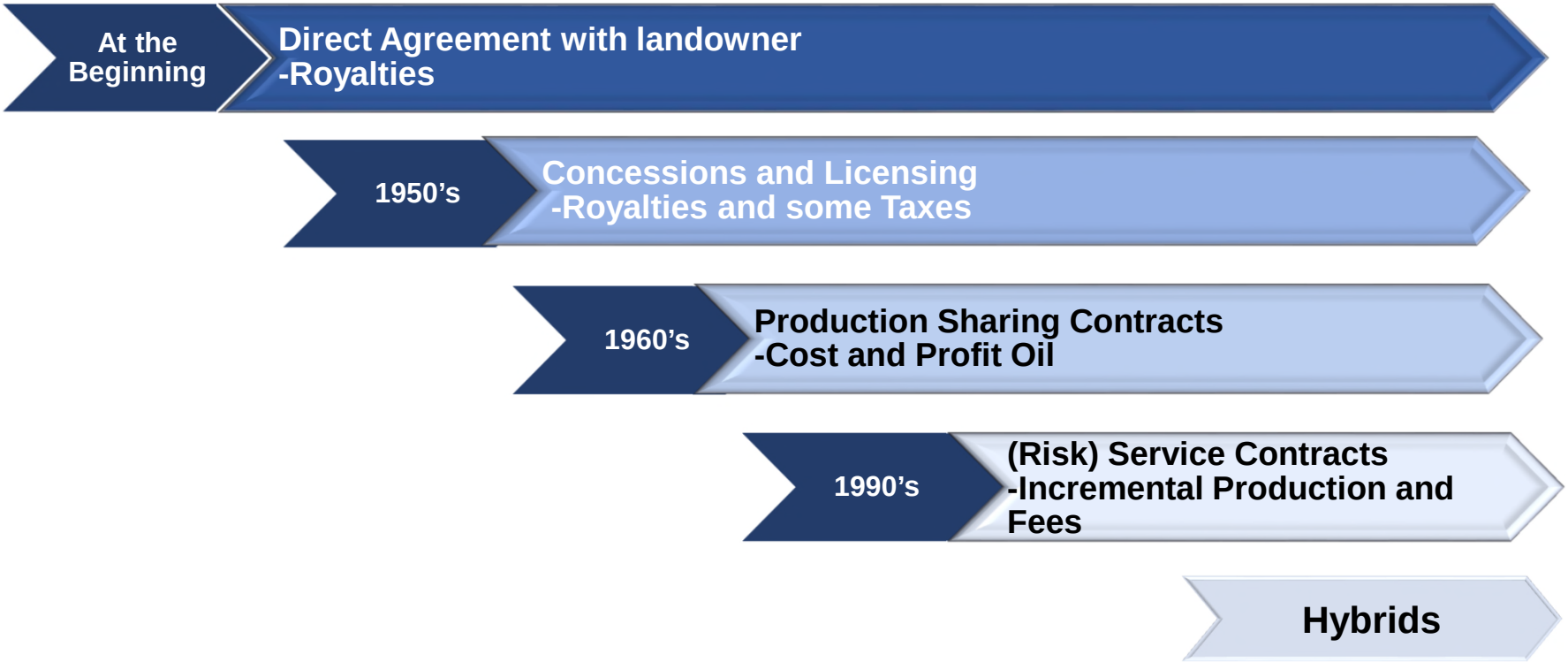
- However, in the real world, fiscal terms are set before activities take place, and not retroactively, thus
  - Sometimes governments capture <100% of rent and give investors some additional returns (in practice a necessary condition)
  - Sometimes governments capture >100% of rent, and stifle activity

- The more stable and deemed fair systems will have flexibility, or self-correcting terms that adjust profit shares in response to ever-changing global conditions

EVOLUTION OF PETROLEUM FISCAL SYSTEMS

ALL STRUCTURES HAVE DURABILITY

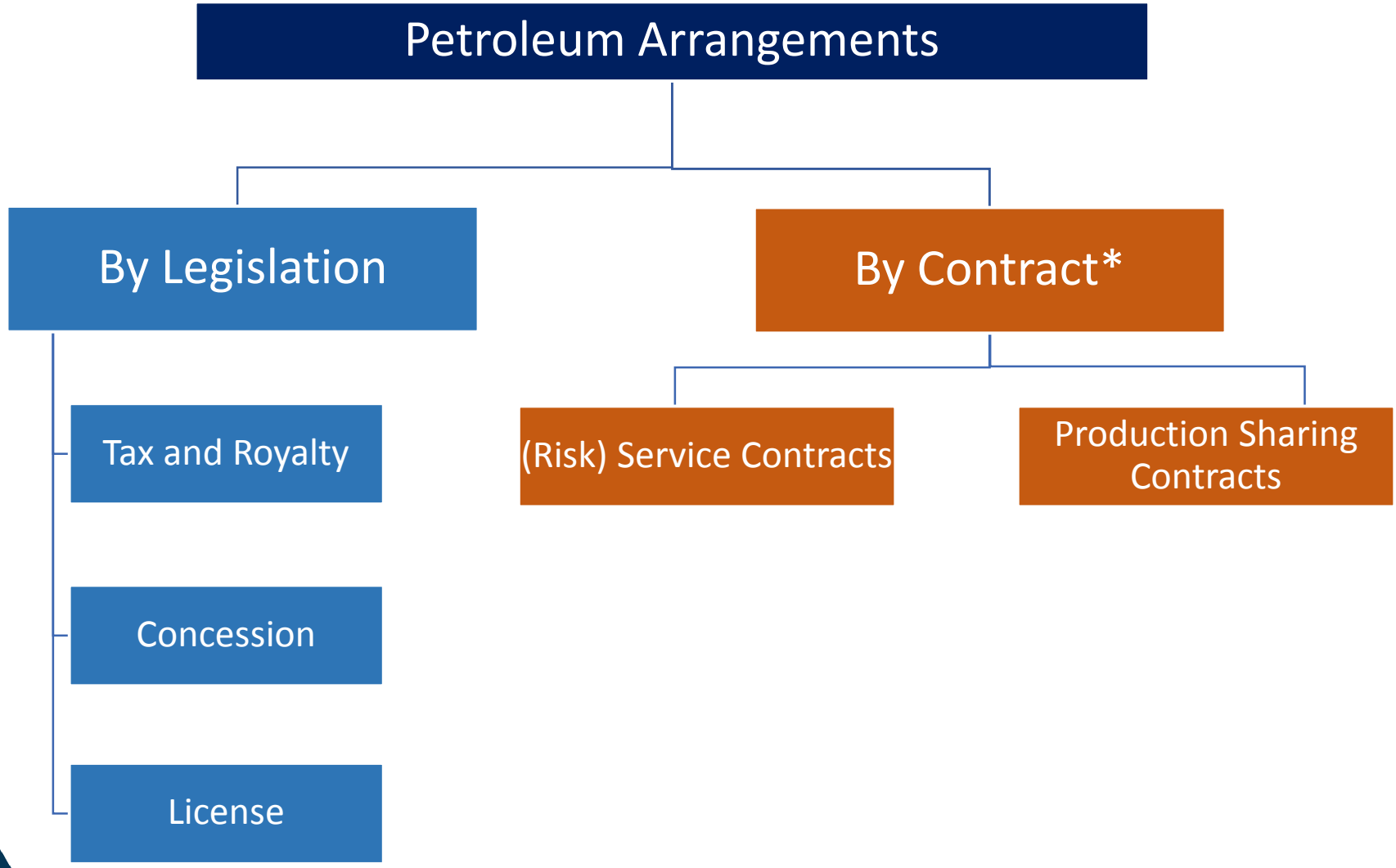
"Whether in form of a license, production sharing contract, or risk service contract, oil industry transactions continue to evolve in light of petroleum economics and political situations" . Owen L. Anderson. UTCLE.



Regardless of agreement type each can be designed to deliver similar economic returns – however, each has a fairly unique set of risks!

BASIS FOR PETROLEUM STRUCTURES

BOTH TYPES BEGIN WITH ENABLING LEGISLATION



*Enabled by host country legislation

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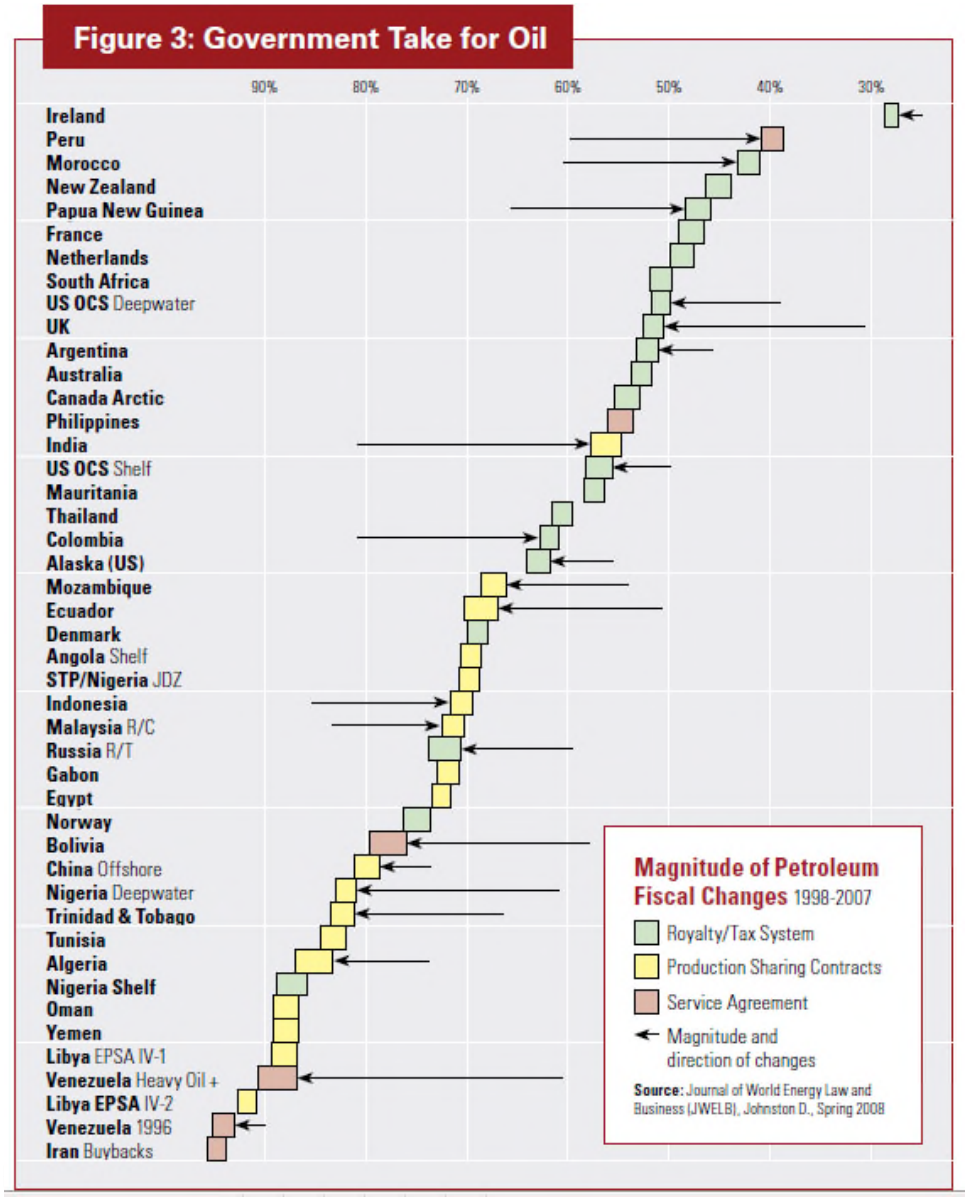
STRUCTURE DRIVERS

ABILITY TO SEEK RECOURSE IS KEY

- The number of countries employing Concession Agreements (CA) and Production Sharing Contracts (PSC) are roughly evenly distributed
- As a very general rule, CAs tend to dominate in OECD nations while PSCs are more common in the developing world
- The emergence of the PSC (initially in Indonesia in mid 1960s) was in large part a response to the desire of the IOCs to have some other-than-local-court recourse to adverse host country actions
- Risk Service Contracts are becoming more common and tend to occur in countries where there is strong cultural or institutional resistance to foreign ownership of reserves and where strong NOCs have emerged

CONTRACT STRUCTURE DISTRIBUTION

WORLD SPLIT BETWEEN CONTRACT AND CONCESSION



- The chart by Daniel Johnston denotes a country's type of leasing arrangement plotted against the level of government take
  - There is not one predominant type of leasing arrangement
  - Government take goes from high on the left to low on the right
- Significant capital is invested in countries with very high government take, or the bottom half of the chart
- **This tells us that the type of structure or level of government take are not the defining criteria for oil company investment decision making**

APPLICABILITY OF EACH CONTRACT TYPE

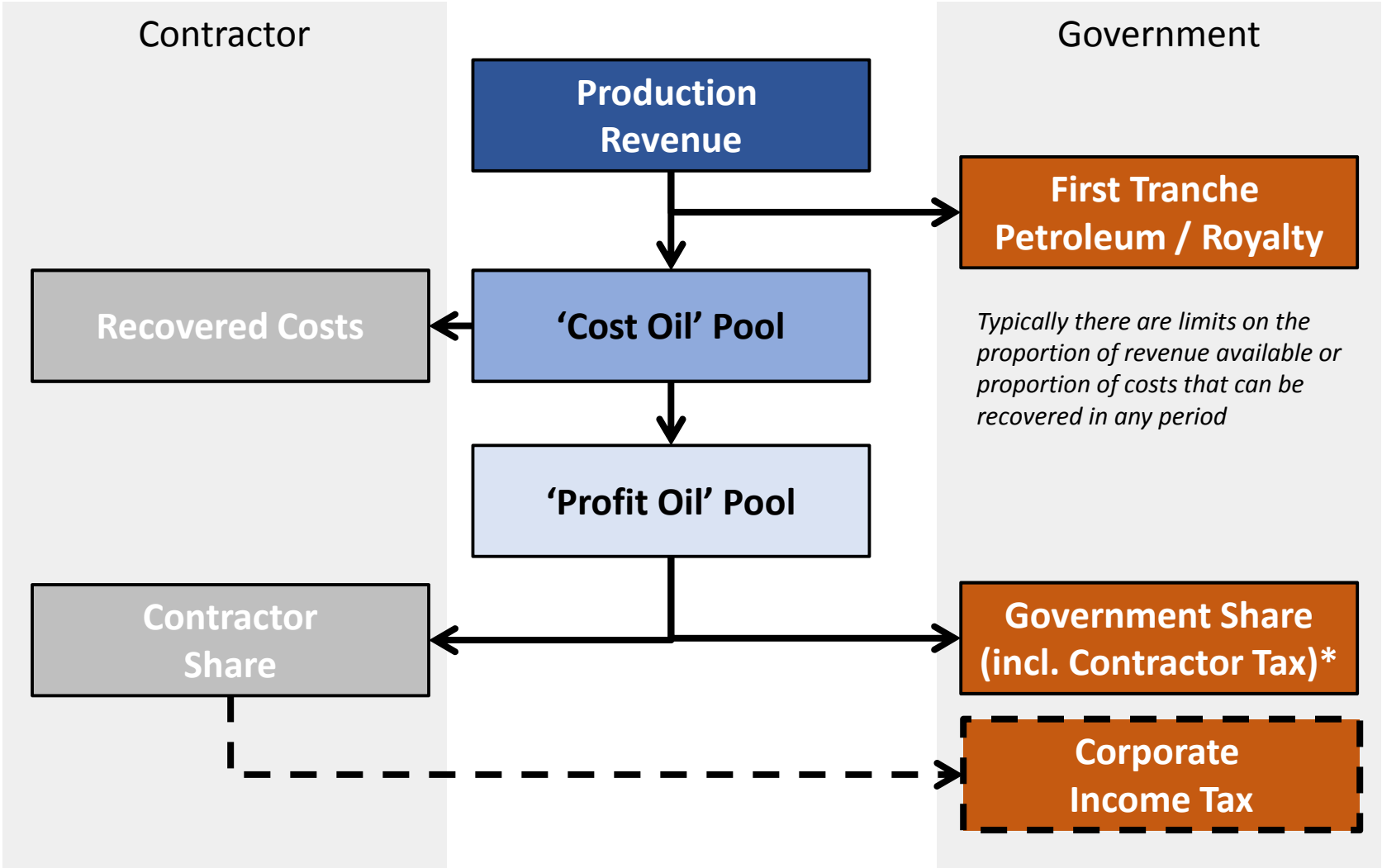
WORLD SPLIT BETWEEN CONTRACT AND CONCESSION

Contract Type	Applicability
Concession Royalty / Tax	Maximum company flexibility and control 'Own' the hydrocarbons and can book them as reserves
PSC	Mechanisms for host government control 'Tax' payments in cash or in kind Companies only book their share as reserves
Technical Service Contract	Provides highest degree of government or NOC operational control with limited contractor downside or upside
Risk/Reward/Incentive Service Contract	Provides a hybrid between the PSC and Service Contract where the contractor is rewarded based on performance metrics

Regardless of fiscal system type, the overarching goal is for the government to maximize its capture of the available "economic rent"

CASH FLOW STRUCTURES

PRODUCTION SHARING AGREEMENT



**Note: Corporate Income Tax can be deemed paid from the Government's share on behalf of the Contractor or the Contractor can pay CIT on its share of the profit pool.*

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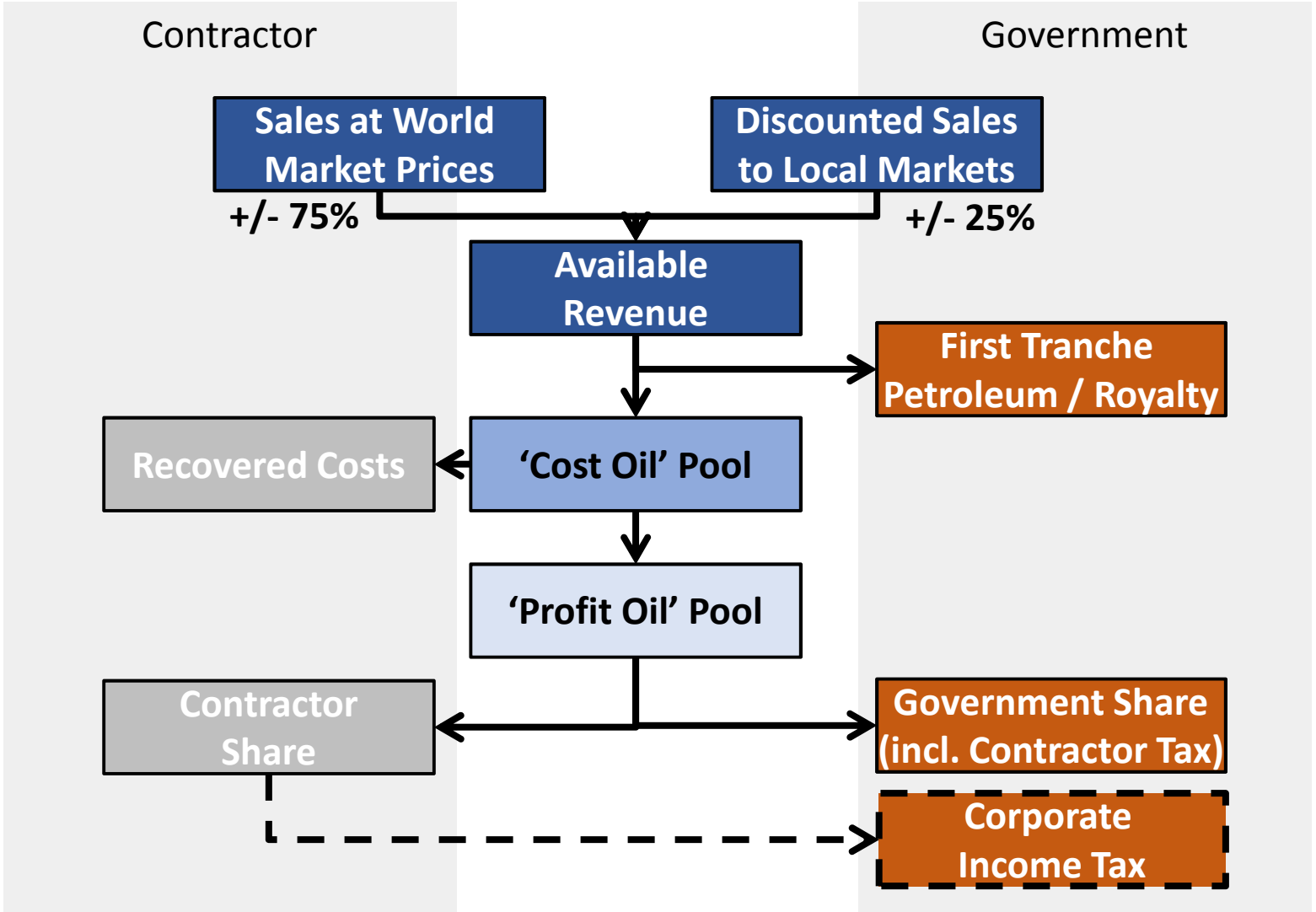
CASH FLOW STRUCTURES

PSC WITH DOMESTIC MARKET OBLIGATION (DMO)



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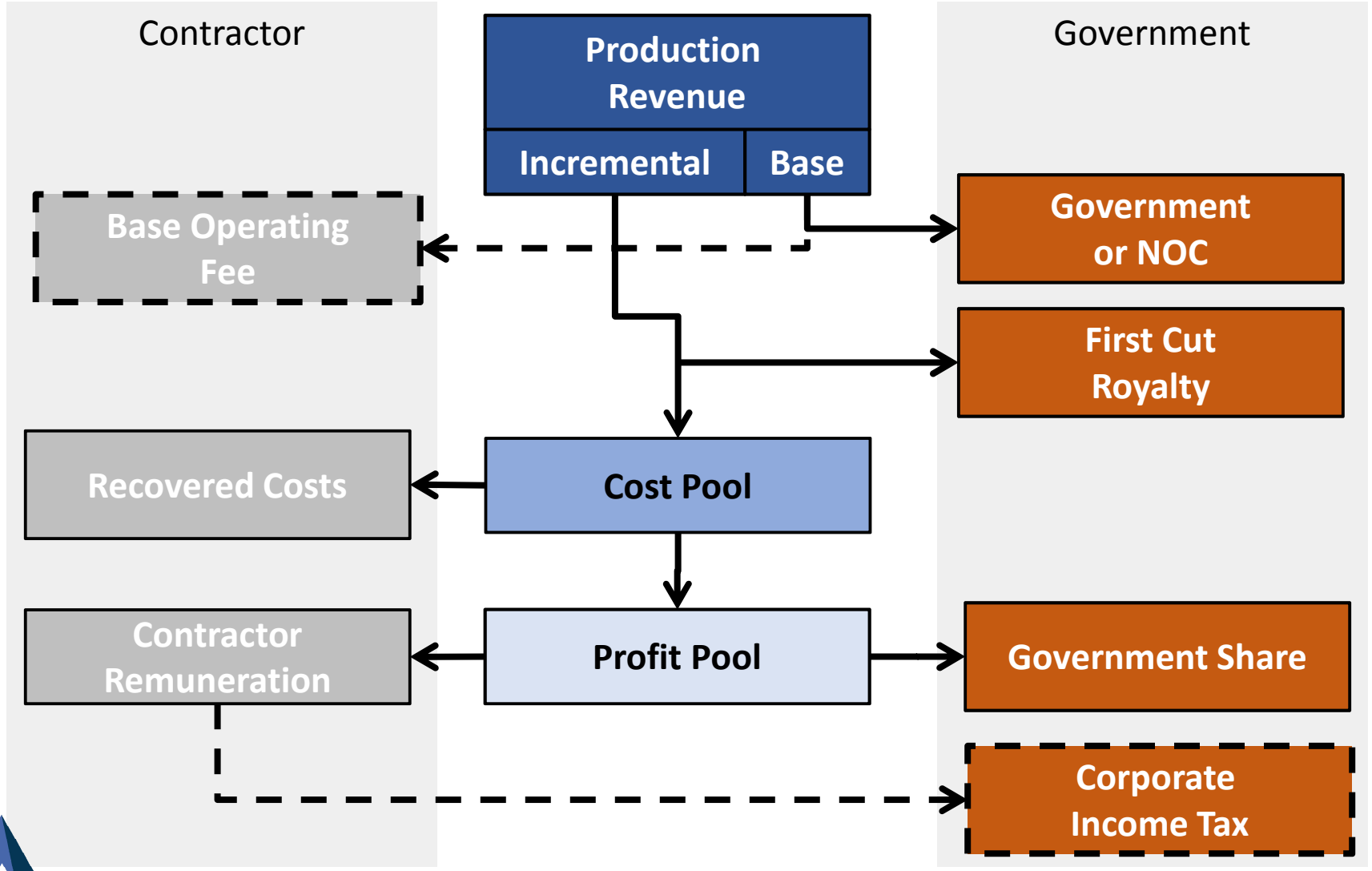
CASH FLOW STRUCTURES

RISK SERVICE AGREEMENT



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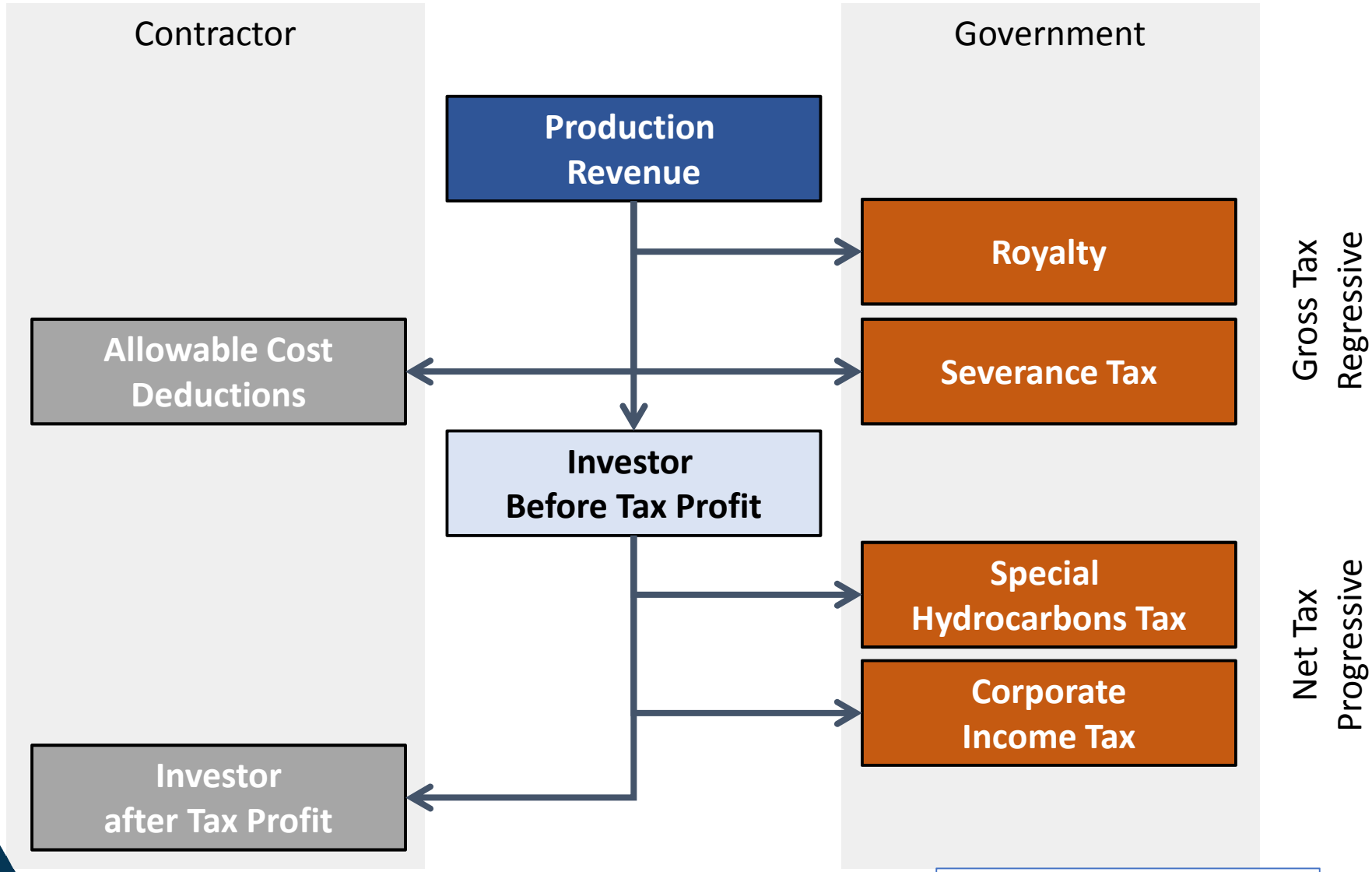
CASH FLOW STRUCTURES

CONCESSION AGREEMENT



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INSIGHT. INQUIRY. INGENUITY.

COMPONENTS OF A FISCAL REGIME

MORE THAN MEETS THE EYE

- Petroleum fiscal policy is much like an iceberg – the headline tax rate is what everyone sees but the real benefit or damage occurs below the surface
- The competitiveness of one regime versus another, is based on items that are not always well understood, discussed, or even made ‘visible’ in a typical competitive debate
- There is much more to petroleum fiscal policy than the headline tax rate or level of overall government take

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STRUCTURE DRIVERS

FISCAL REGIME TOOLKIT

- So how does the simple math of Revenue – Costs = Taxable Profit become complex?
- As noted earlier, projects and governments have many unique features
- Fiscal systems are modified using one of many different “tools” to achieve a subset of goals and to prevent another subset of unwanted outcomes
- Each of these tools can be deployed in a variety of ways
- While high-level fiscal structures have not changed much, variations on how to handle constituent parts continue to be developed

FISCAL REGIME TOOL KIT ITEMS

TYPICAL GOVERNMENT TAKE METHODS IN USE TODAY

- Bonuses
- Bid Fees
- Annual Fees

- Income Tax
- Capital Gains Tax
- Petroleum Tax
- Property Tax
- Excise Duties
- Import Duties
- Ringfencing

- Royalty
- Cost Oil & Caps
- Profit Oil & Split
  - Rate
  - Reserves
  - R Factor
  - IRR
  - Combination
  - Delta Oil/Gas
- Work Program
- Abandonment Bank

- Data Transfer
- Facility Transfer
- Local Market
- Local Content
- Training

FISCAL REGIME TOOL KIT ITEMS

SIGNIFICANT OIL COMPANY ECONOMIC IMPACTS

- Capital Expense
  - Uplift
  - NOLs
  - Inv Credits
  - Depreciation Schedule
  - Recovery
  - Period Recovery Caps
  - Allowed / Disallowed
- Operating Expense
  - Sole Source vs Bidding
  - Affiliates
  - Allowed / Disallowed
  - Overhead
  - Abandonment
- Other
  - Liability
  - Environmental
  - Insurance
  - Employee costs
- Marketing
  - Ultimate sale point
  - Unit valuation point
  - Allowed expenses
  - Affiliated sales

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FISCAL REGIME TOOL KIT ITEMS

OTHER POTENTIAL BIG ECONOMIC IMPACTS

- Fiscal Stability Clauses
- Liability and Indemnifications
  - Who – government or oil company
  - $$ monetary caps
- Environmental
  - Clean up to what level?
- Insurance
  - Coverage amount and use of proceeds
  - Can company self insure?
- Employee costs
  - E.g. expats, transfers, benefits, bonuses

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OVER GENERALIZING FISCAL REGIMES

MANY VARIATIONS OF EACH ITEM IN USE TODAY

- For example: Royalty
  - Fixed – i.e. same percentage throughout life of lease/contract
  - Variable – the royalty changes based on a defined operational parameter such as:
    - Daily production
    - Annual production
    - Cumulative reserves
    - Remaining reserves
    - Some measure of profitability
  - Variations can be via sliding scale or step changes
  - Shared – First Tranche Petroleum
  - Royalty holidays or exemptions can be granted under a range of defined circumstances

OVER GENERALIZING FISCAL REGIMES

MANY VARIATIONS OF EACH ITEM IN USE TODAY

- For example: Capital Recovery
  - Depreciation
    - From 1 year to 10+ years
    - Straight line, double declining balance, MACRS, etc.
  - Net Operating Losses
    - Carry forward losses
      - Limit on years
      - Carry back as well
    - Uplift
      - Rate
      - Number of Years
  - Cost Oil
    - Periodic caps
    - Order of recovery, i.e. current operating costs before past capital

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FISCAL REGIME TOOL KIT ITEMS

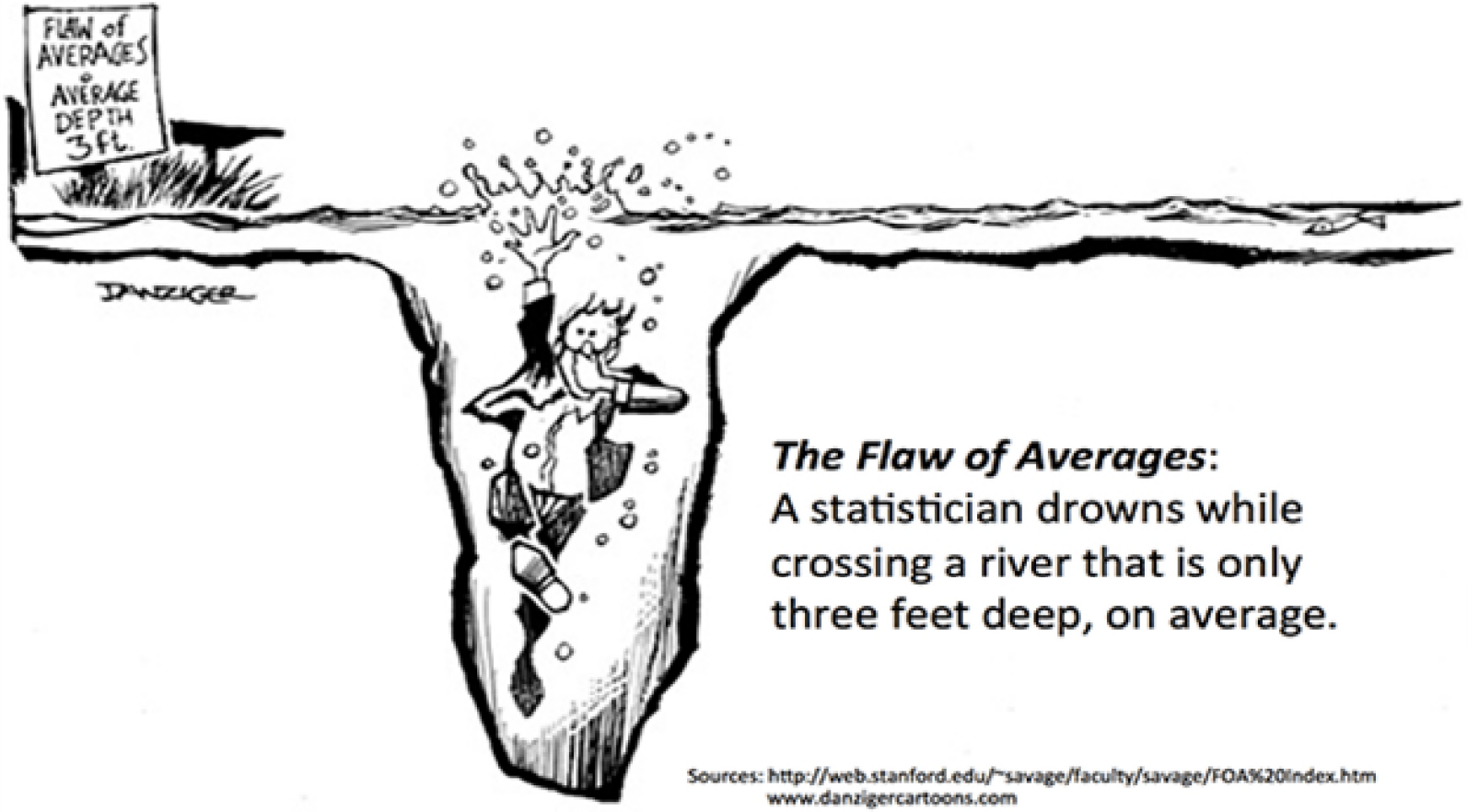
MANY VARIATIONS OF EACH ITEM IN USE TODAY

- As spreadsheet programs like Excel have become common, more sophisticated tools have been developed to define petroleum taxes or profit splits:
  - R factor
  - S Curve
  - IRR
  - ROI
  - DCF
  - Fairness Index
- A list of all the tools and the different ways in which they are deployed would amount to hundreds of variations
- This is why we keep repeating that Alaska can't be compared to other regimes by just looking at headline tax rates or levels of government take

ANOTHER PITFALL: THE FLAW OF AVERAGES

OPERATIONS IN EVERY COUNTRY ARE HIGHLY VARIABLE

- All too often regimes are described or, even worse, modelled and compared using average values



ALASKA: TAX & ROYALTY

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FISCAL REGIME TOOL KIT

THE CONCESSION

- Concessionary systems are viewed as having the least complexity
- In its basic construct this is true

  Revenue – Cost = Profit

- However, it can become quite complex

- Market Sale Revenue
  - Less Costs to market
- Value at license border
  - Less royalty
  - Less costs of operations
- Taxable value
  - Less tax
- Oil company profit

ALASKA FISCAL REGIME HIGH LEVEL VIEW

CONCESSION VARIATIONS

- What causes concession based fiscal regimes to go from simple to complex?

- Usually it is a perception of achieving a big marginal gain or preventing a potential loss; i.e. plugging a loophole

- Putting Alaska in perspective:
  - At 500,000 bpd you get roughly 182,000,000 barrels per year
  - Thus $1 per barrel change in revenues or costs represents a change of $182,000,000 per year

- Consequently, governments like Alaska closely scrutinize revenues and costs and make incremental changes to laws and regulations to ensure they are creating the highest possible taxable value

FISCAL REGIME TOOL KIT

THE CONCESSION – ALASKA TODAY

- How does Alaska make sure the right value ends up back at the lease?

- Market Sales Revenue
  - Actual price and revenues if arms-length sale to a third party
  - If non arms-length sale to an affiliate, the price and revenues are to be agreed between the company and the State of Alaska
  - Large integrated oil companies tend to keep things in house

- Less Costs to Market
  - Shipping
  - TAPS
  - Same issues on affiliated transactions versus third party transactions
  - Additional issues with the perceived fairness of rates set by non-AK regulatory bodies

FISCAL REGIME TOOL KIT

THE CONCESSION – ALASKA TODAY

- Value at the license border/ wellhead
  - GVPP or Gross Value at the Point of Production
  - [Possible 20% GVR deduction]
- Less Royalty
  - State share varies
- Less Costs of Operations
  - Not all costs are deductible
  - Definition of 'direct' costs versus overhead (subject to limits on the deductibility)
  - Deductions not allowed on equipment until present in the field in Alaska
  - Carry forward net operating losses or NOLs

	UGF	Restricted	Total
State Land**	$4.84	$3.16	$8.00
NPRA	$1.75	$3.13	$4.88
ANWR	$3.30	$1.58	$4.88
Other Federal Land	$4.53	$2.85	$7.38
3-6 Miles Offshore	$0.84	$0.85	$1.69
>6 Miles Offshore	$0.00	$0.00	$0.00
Native Corp Land	$2.06	$0.00	$2.06

Source: Ed King

FISCAL REGIME TOOL KIT

THE CONCESSION – ALASKA TODAY

- Taxable Value
  - PTV or Production Tax Value
- Less Tax –
  - The state has established 7 “ringfences” for calculating tax
    - (a) Oil and gas north of 68 (other than gas used in state prior to 2022)
    - (b) Oil and gas not Cook Inlet and not north of 68
    - (c) Cook Inlet oil before 2022
    - (d) Cook Inlet gas prior to 2022
    - (e) Gas not Cook Inlet prior to 2022
    - (f) First 7 years for oil and gas not CI not N68 between 2012 & 2027
    - Oil and gas not covered in (a-f) above

FISCAL REGIME TOOL KIT

THE CONCESSION – ALASKA TODAY

- Taxable Value
  - PTV or Production Tax Value
- Less Tax –
  - The state has established 7 “ringfences” for calculating tax
  - For north slope production the tax payable is the greater of:
    - A gross tax on the GVPP
      - Rate ranges from 0% to 4% based on oil price
    - A net tax on the PTV less applicable credits
      - $0 to $8 per barrel based on oil price
      - $5 per barrel for GVR eligible fields
      - Exploration and other activity incentivizing credits
      - Small producer credit

FISCAL REGIME TOOL KIT

THE CONCESSION – ALASKA TODAY

- Taxable Value
  - PTV or Production Tax Value
- Less Tax –
  - The state has established 7 “ringfences” for calculating tax
  - For north slope production the tax payable is the greater of
  - Finally, the tax is paid by company and not by field
    - Every company is different
    - Those with large production revenues can immediately deduct expenses from new fields
    - Those with no or limited production revenues must wait for production on a new field to commence to deduct costs

FISCAL REGIME TOOL KIT

THE CONCESSION – ALASKA TODAY

- Taxable Value
  - PTV or Production Tax Value
- Less Tax –
  - The state has established 7 “ringfences” for calculating tax
  - For north slope production the tax payable is the greater of
  - Finally, the tax is paid by company and not by field
- Oil Company “Profit”
  - Less Alaska corporate income tax
  - Less us federal income tax
- Money into the oil company bank account

FISCAL REGIME TOOL KIT

THE CONCESSION – ALASKA TODAY

- Driver: Every $1 per barrel represents $182,000,000 per year

- Through the years, with numerous modifications, the simple concessionary design has become quite complex in Alaska

- Fiscal system complexity leads to:
  - Greater number of regulations
  - Greater costs to administer
  - Greater need for regular auditing
  - Greater likelihood to end up in some form of dispute; and
  - Unintended consequences when changes are attempted

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DEALING WITH UNINTENDED CONSEQUENCES

THE RISKS OF COMPLEX FISCAL SYSTEMS

- By creating, revising, or eliminating one aspect of a complicated tax system, there is a very likely risk that other areas of the tax system will be affected to the detriment of one or more parties
- These **unintended consequences** can undermine the intent of original efforts and are often difficult to see or anticipate
- Before making changes, a thorough analysis should be performed to make sure the level and degree of interdependency of certain taxation terms is understood and addressed

THE IMPORTANCE OF TIME

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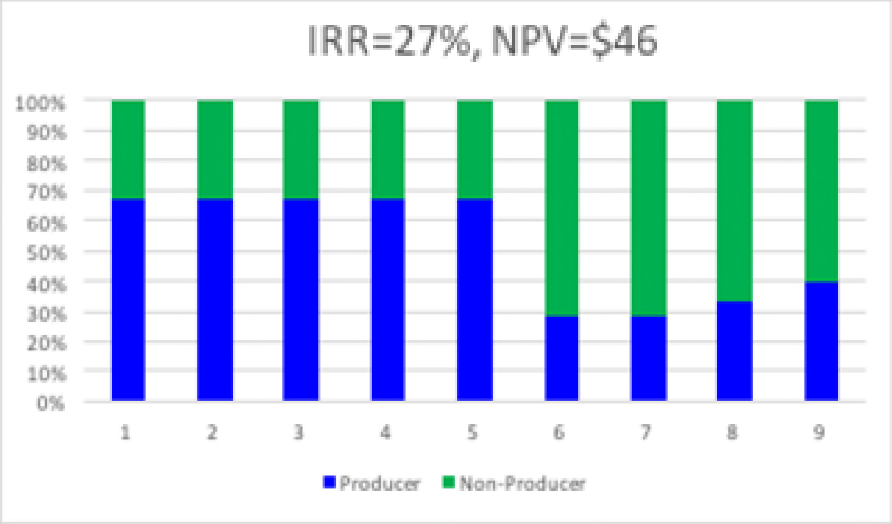
TIMING VERSUS TAX RATE

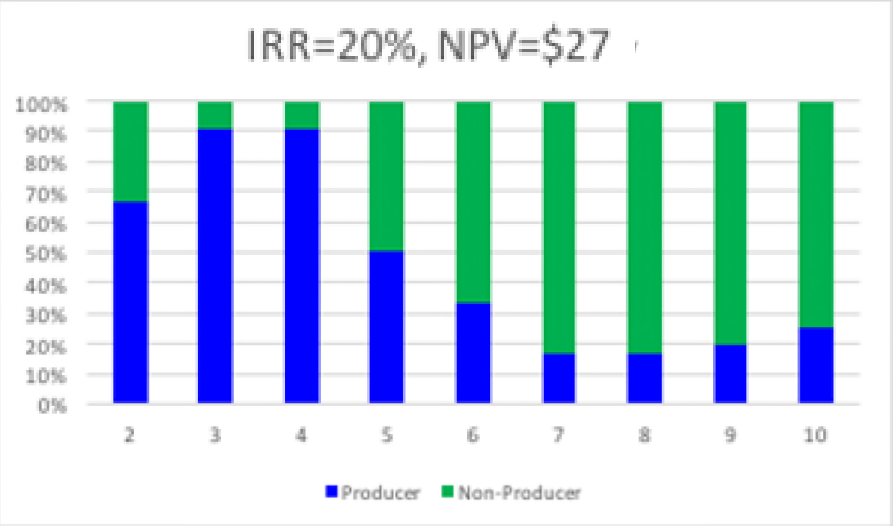
MAJOR IMPACT ON COMPANY ECONOMICS

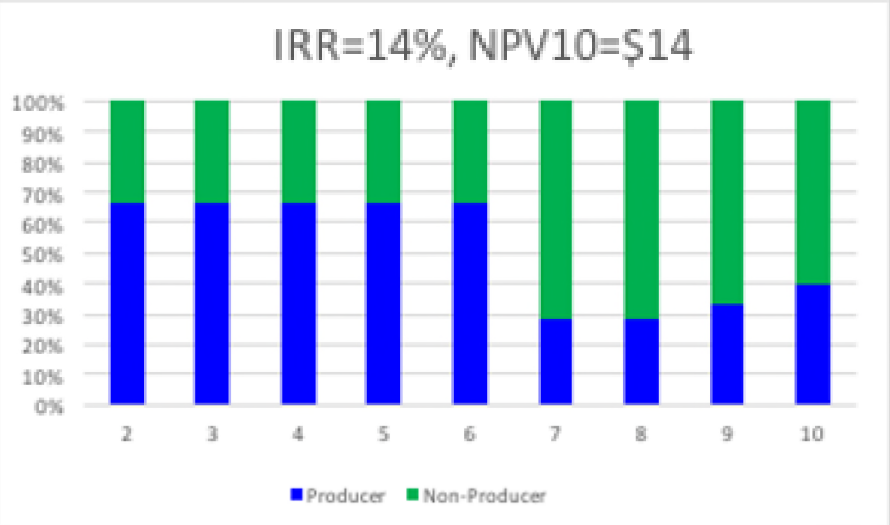
- Critical to project economics and oil company investment decision making is the timing of cash outflows and cash inflows
- Governments and their policies have a major impact on cash flow timing. Other issues impacting cash flow timing include:
  - Geography
  - Geopolitics
  - Environment
- Based on timing related issues, the same project can be viewed as desirable in one regime and uneconomical to pursue in another
- The challenge for all regimes is that they have to deal with many different project types at the same time

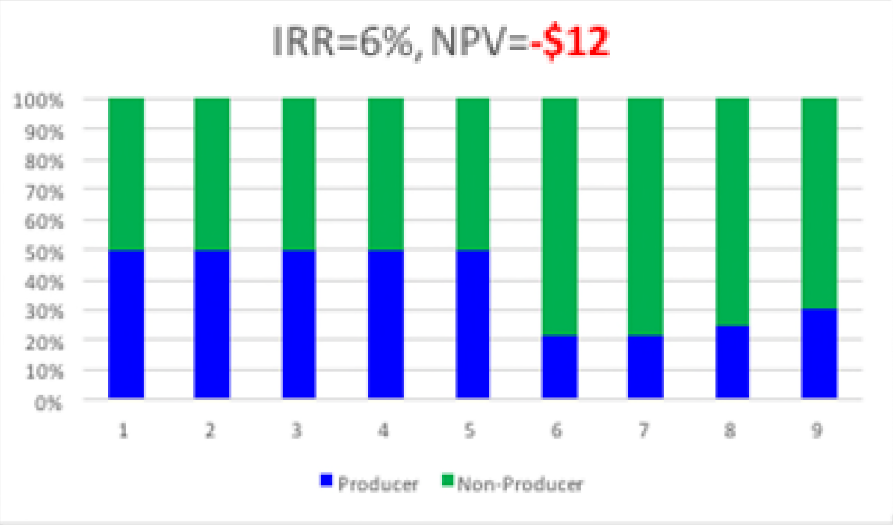
TIMING IMPACT ON PROJECT ECONOMICS

SAME PROJECT, SAME REVENUE, SAME PRODUCER SHARE



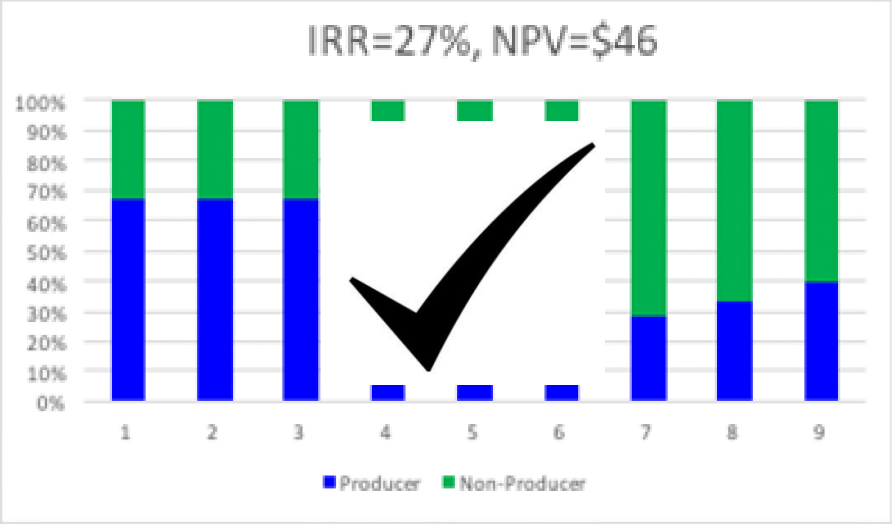


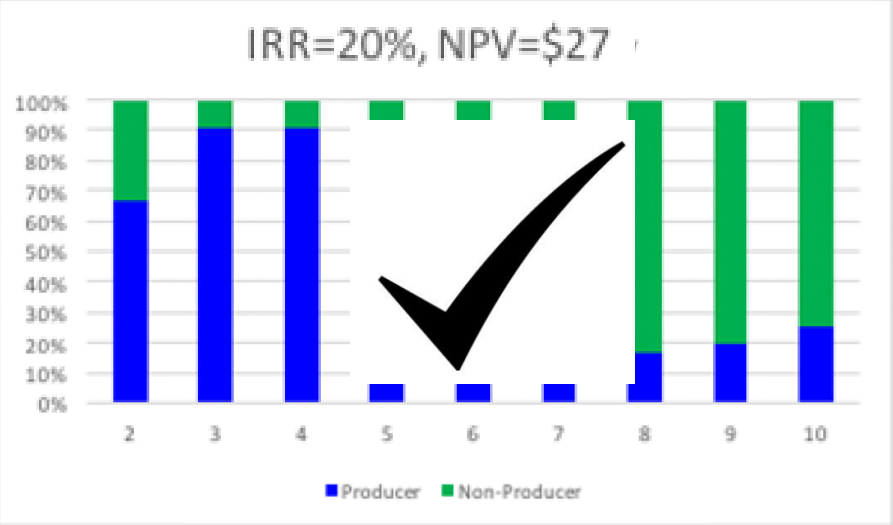


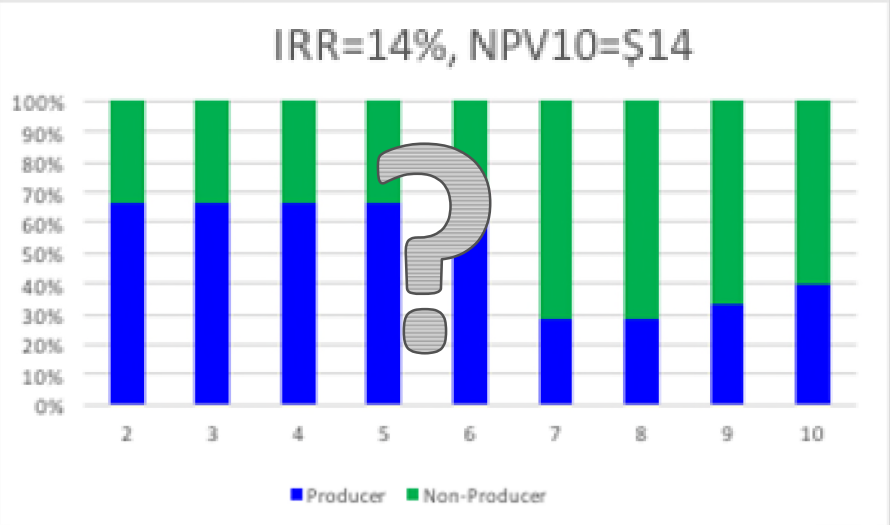


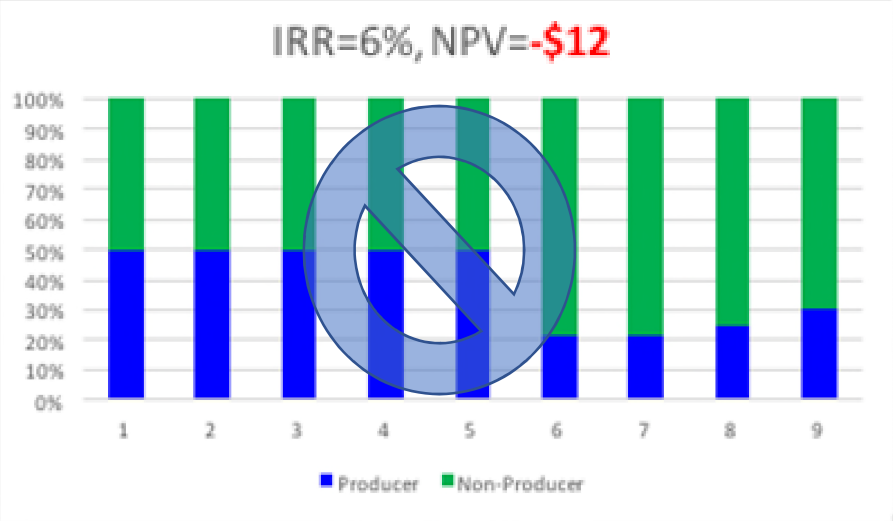
TIMING IMPACT ON PROJECT ECONOMICS

SAME PROJECT, SAME REVENUE, SAME PRODUCER SHARE



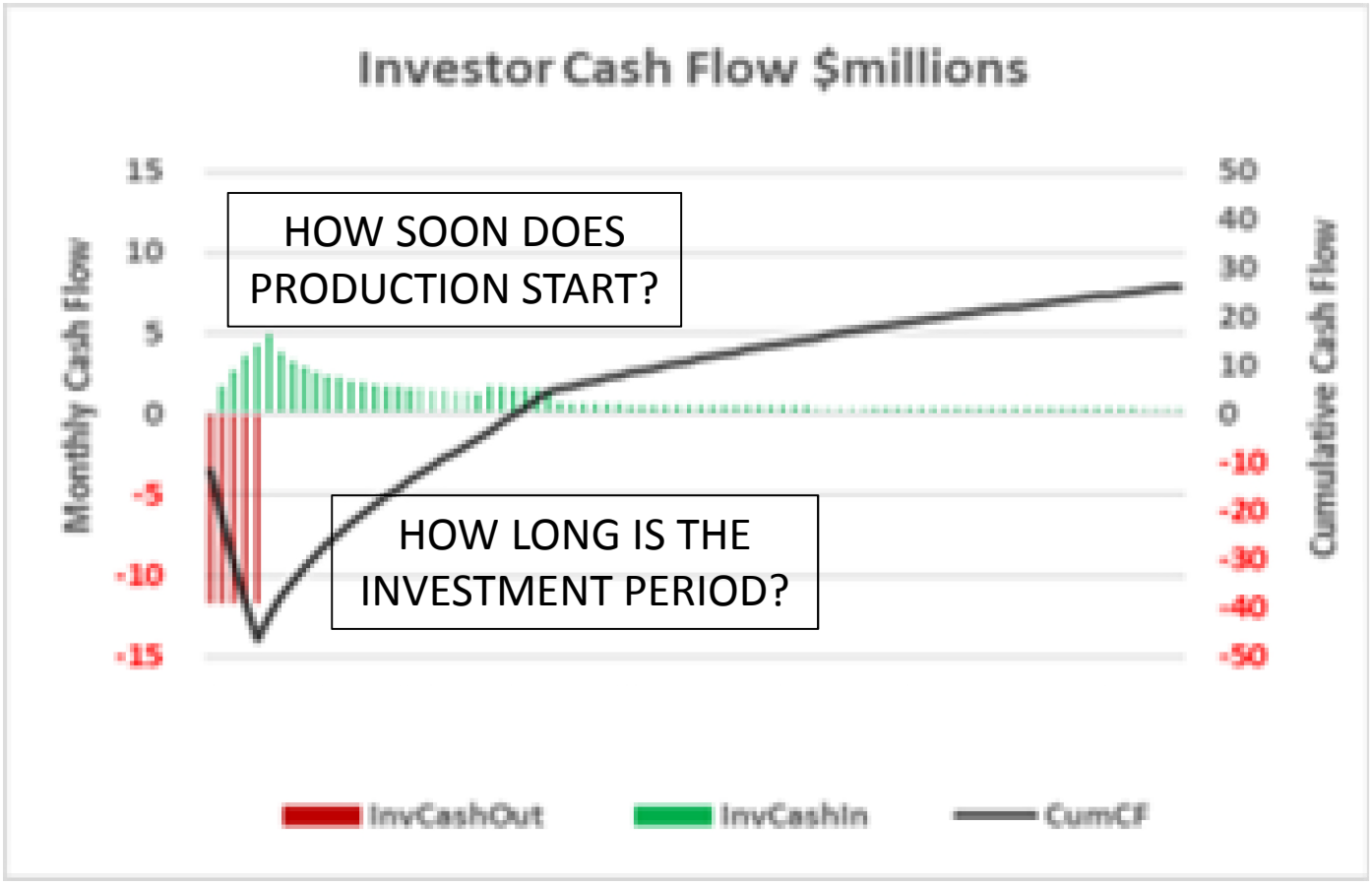






THE PROJECT "HOCKEY STICK"

EXAMPLE PROJECT CASH FLOW



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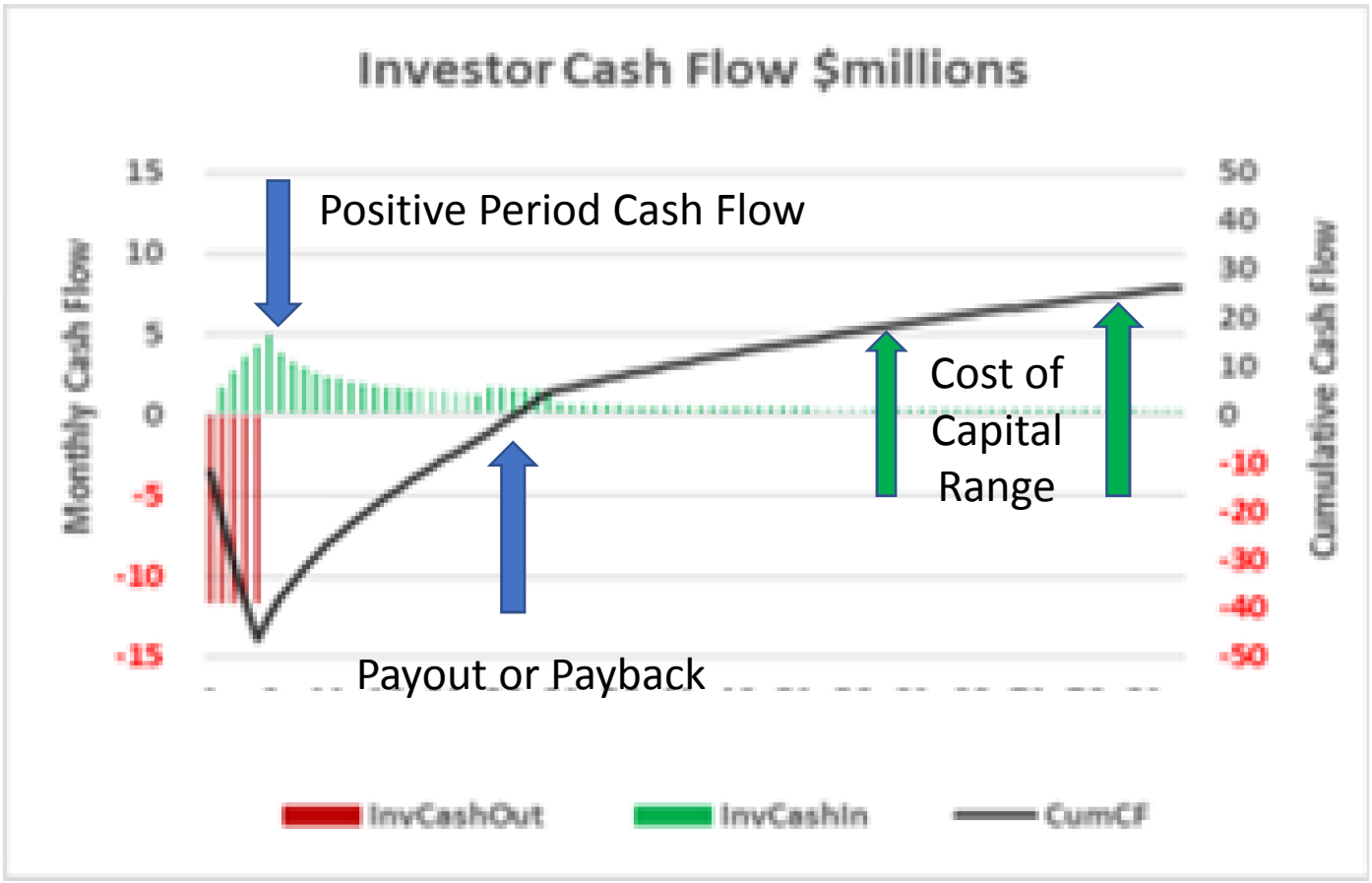
THE PROJECT "HOCKEY STICK"

POSITIVE CASH FLOW DOES NOT EQUAL PROFIT



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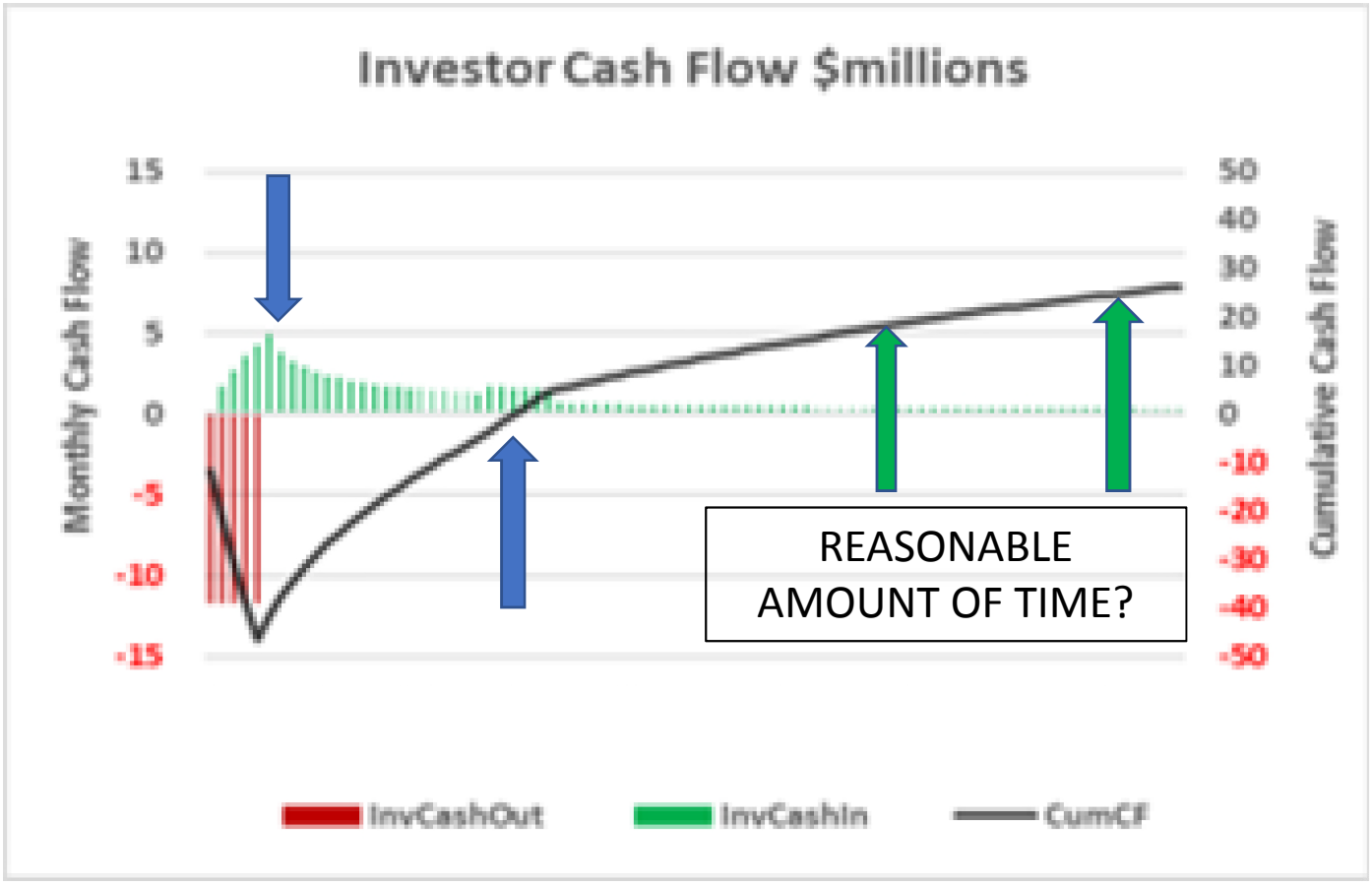
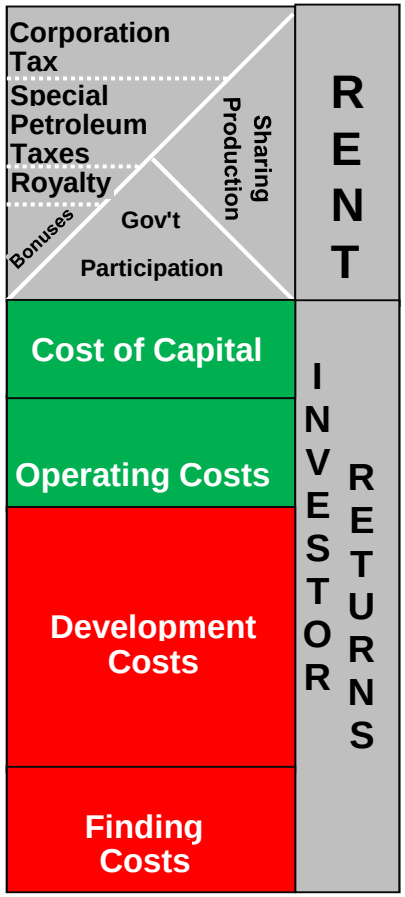
THE PROJECT "HOCKEY STICK"

HOW LONG DOES IT TAKE TO EARN A FAIR RETURN?





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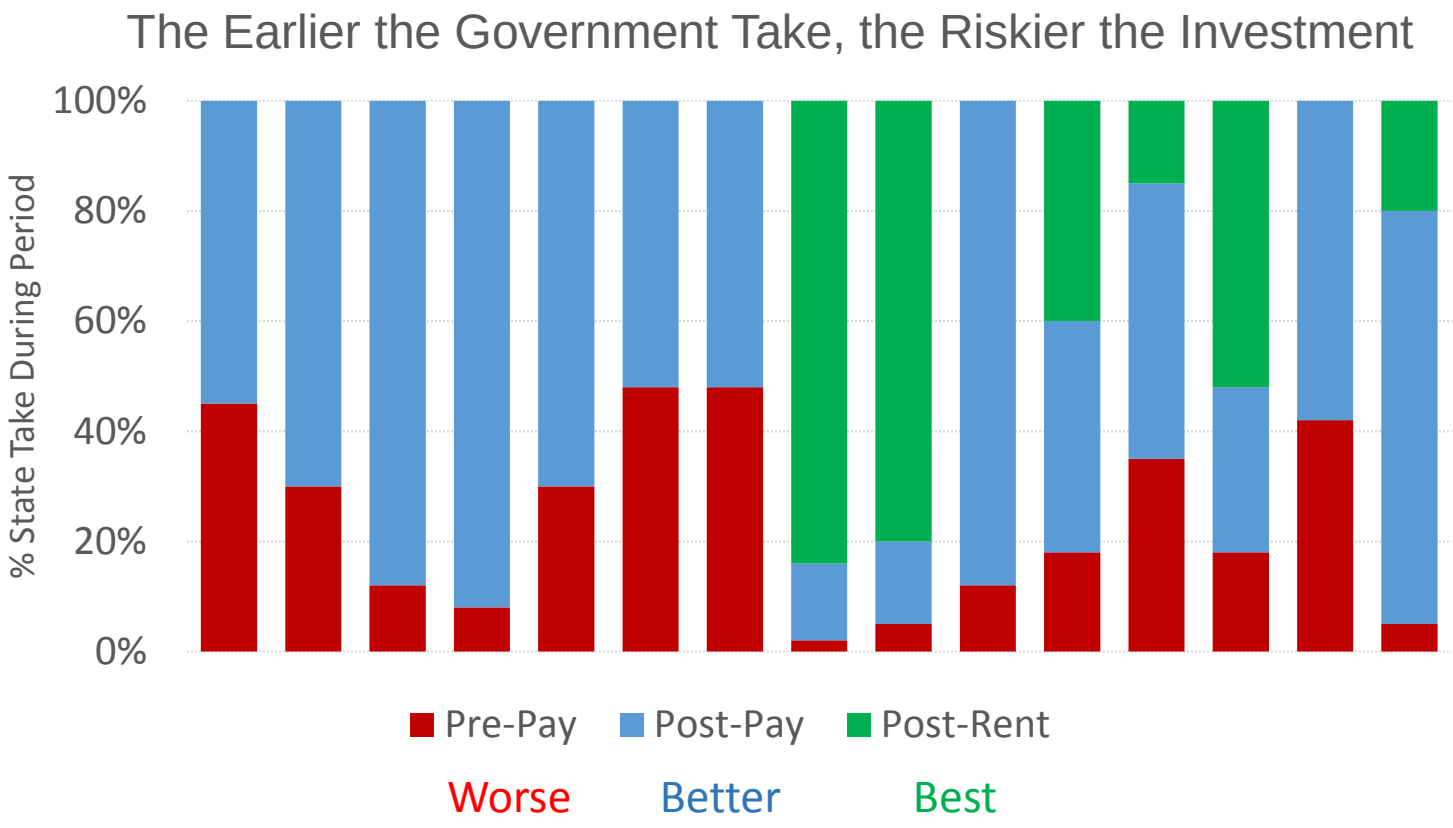
RISK, ANOTHER IMPORTANT CRITERIA

THE RELATIONSHIP BETWEEN LEVEL OF RISK AND TIME



Pre-Pay: *Before Investor has recovered his costs*
Post-Pay: *After cash payout but before a 15% return on capital*
Post-Rent: *After cash payout plus 15% return have been recovered by investor*

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TIME TO FIRST OIL

ALASKA VERSUS THE LOWER 48

- From the 1st investment dollar spent to 1st revenue dollar earned, producers in the Lower 48 can begin to earn their money back materially sooner than producers in Alaska

- What creates the years of difference?
  - Exploration activities in Alaska are on large scale areas, more often without current activity and data
  - Seasonal activity limitations, timing of permitting and licensing
  - L48 can be well by well developments, where as Alaska is full field

- What does the difference mean for investment?
  - The longer development time the greater the risk
  - L48, early well revenue can pay for future wells, whereas Alaska requires almost all capital upfront
  - Flipside, Alaska fields can lead to decades of revenue

TIME TO COST RECOVERY

WHAT'S ALLOWED AND TIMING OF RECOVERY

- The concept of cost recovery is a globally accepted standard, applied various ways throughout fiscal systems. The most important parameters are:
  - Which costs can be deducted and/or recovered?
  - When can the deductions/recovery take place?
  - Before or after tax is due?

- Non-deductibility or exclusion of costs (such as disallowance of some or all NOLs) significantly hurts economics and increases risk, thus creating a deterrence for producers to invest

- Global standard is to deduct and recover costs, such as exploration, development, production, administration and services

- Usual minor exclusions are financing interest, excess corporate overhead, penalties, entertainment, and donations

EXAMPLE ECONOMIC IMPACTS

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INSIGHT. INQUIRY. INGENUITY.

ECONOMIC IMPACT OF CERTAIN TOOLS

EXAMPLE PROJECT UNDER A PSC

• Production:	200 MMboe
• Oil to gas ratio:	50%:50%
• Average costs:	$27.50/boe
• DMO:	15%
• DMO price discount:	25%
• Oil price:	$100/bbl
• Gas price:	$6.3/MMbtu
• Cap for Cost Recovery:	100%
• Uplift:	0%
• Profit Share:	50%
• R-factor:	Yes
• Abandonment:	Lump Sum
• Depreciation:	SL, 5 years
• Income Tax:	25%

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ECONOMIC IMPACT OF CERTAIN TOOLS

VARYING THE LEVEL OF UPLIFT

- Uplift basically provides compensation for the time value of money
- Basically interest on unrecovered costs
- On the combined case going from no uplift to an uplift of 20%
  - ATCF: 25% increase
  - NPV10: 53% increase
  - IRR: 4 percentage point increase
- When uplifts are allowed they tend to be in the range of 10 to 15%

Oil	Non Recovered Costs Uplift				
	0%	5%	10%	15%	20%
ATCF	1,577	1,616	1,658	1,712	1,776
NPV10%	622	651	683	720	764
IRR	25.2%	25.9%	26.8%	27.7%	28.7%

Gas	Non Recovered Costs Uplift				
	0%	5%	10%	15%	20%
ATCF	384	444	530	687	952
NPV10%	(19)	15	60	130	202
IRR	9.4%	10.5%	11.8%	13.6%	14.9%

Oil+Gas	Non Recovered Costs Uplift				
	0%	5%	10%	15%	20%
ATCF	1,962	2,049	2,153	2,286	2,460
NPV10%	619	679	750	836	945
IRR	18.6%	19.4%	20.4%	21.4%	22.7%

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ECONOMIC IMPACT OF CERTAIN TOOLS

DIFFERENT DEPRECIATION

- As discussed previously, there are many different ways to depreciate capital
- For a given project, there can actually be multiple schedules in use
  - One for the license or contract
  - One for corporate income tax
  - One for any regulated facilities
- If we use a basic straight line depreciation, and only vary the length of the depreciation period, the on the combined case:
  - No impact on ATCF
  - NPV10: 23% gain
  - IRR: 2.6 percentage point gain

Oil	SL Years Depreciation		
	1	5	10
ATCF	1,577	1,577	1,577
NPV10%	641	622	566
IRR	26.4%	25.2%	22.4%

Gas	SL Years Depreciation		
	1	5	10
ATCF	384	384	384
NPV10%	(19)	(19)	(60)
IRR	9.4%	9.4%	8.2%

Oil+Gas	SL Years Depreciation		
	1	5	10
ATCF	1,962	1,962	1,962
NPV10%	639	619	520
IRR	19.1%	18.6%	16.5%

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ECONOMIC IMPACT OF CERTAIN TOOLS

IMPACT OF DOMESTIC MARKET OBLIGATION

- Some host governments require that a portion of the oil & gas be supplied to local markets at discounted prices

- Using a local price at 75% of the international market while varying the % of total production committed to the DMO:
  - ATCF: 17% decrease
  - NPV10: 28% decrease
  - IRR: 2.8% decrease

Oil	%DMO @ P disc. = 25% of $/bbl = 100			
	0%	10%	20%	30%
ATCF	1,708	1,621	1,534	1,447
NPV10%	694	646	598	550
IRR	26.9%	25.7%	24.6%	23.4%

Gas	%DMO @ P disc. = 25% of $/mmbtu= 6.3			
	0%	10%	20%	30%
ATCF	433	401	368	335
NPV10%	11	(9)	(30)	(51)
IRR	10.4%	9.7%	9.0%	8.4%

Oil+Gas	%DMO @ P disc. = 25%			
	0%	10%	20%	30%
ATCF	2,141	2,021	1,902	1,782
NPV10%	721	653	585	516
IRR	20.0%	19.1%	18.1%	17.2%

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ECONOMIC IMPACT OF CERTAIN TOOLS

ABANDONMENT FUND

- An evaluation of an independent escrow fund established to provide for proper abandonment of all wells, platforms, pipelines and facilities after production ceases, paid on an annual basis
- Alternative is to be hit with a lump sum at the end of the asset life when there is no revenue for recovery of these costs
- Comparing provision for annual funding to a end of life lump sum
  - ATCF: 11% gain
  - NPV10: 6% decrease
  - IRR: 1.1% decrease

Oil	Abandonment Type	
	Lump Sum	Fund
ATCF	1,577	1,704
NPV10%	622	603
IRR	25.2%	24.0%

Gas	Abandonment Type	
	Lump Sum	Fund
ATCF	384	499
NPV10%	(19)	(38)
IRR	9.4%	8.9%

Oil+Gas	Abandonment Type	
	Lump Sum	Fund
ATCF	1,962	2,204
NPV10%	619	583
IRR	18.6%	17.5%

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THINGS TO CONSIDER

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FISCAL SYSTEM DESIGN

SUMMARY

- First, ask to ensure you have the whole picture
  - Competitive analysis is more than simplistic comparative data tables
  - Understand all key aspects of competing fiscal systems
  - The ‘obvious’ aspects usually don’t drive investment decisions
  - Understand the true differentiators and their impact on risk
  - Ask the IOCs in Alaska why they are spending billions in other countries with ‘higher tax rates’
- Second, there is no ‘ideal’ structure for sharing the benefits of oil and gas development so understand your drivers, e.g.
  - Multi-generational wealth creation
  - Fill the pipeline
- Third, review multiple options modelled against different future scenarios to improve chances of realizing goals
- Last, draw conclusions of competitiveness from a review of all aspects of your multifaceted system

THANK YOU

QUESTIONS?

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be in the know

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