



Fraser Institute

# Global Petroleum Survey 2013

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## Acknowledgements

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## **Survey information**

The 2013 Fraser Institute Global Petroleum Survey was distributed to managers and executives of petroleum exploration and production companies around the world and to firms that provide support services to such companies.

The analyses contained in this report are based on information obtained from 864 respondents representing 762 companies. The exploration and development budgets of these participating companies totaled about \$312 billion in 2012. That represents more than 50 percent of global upstream expenditures last year, according to information reported in the International Energy Agency's most recent World Energy Outlook (International Energy Agency, 2012).

## Executive summary

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This report presents the results of the Fraser Institute’s 7th annual survey of petroleum industry executives and managers regarding barriers to investment in oil and gas exploration and production facilities in various jurisdictions around the globe. The survey responses have been tallied to rank provinces, states, other geographical regions (e.g. offshore areas) and countries according to the extent of such barriers. Those barriers, as identified by the survey respondents, include high tax rates, costly regulatory obligations, uncertainty over environmental regulations and the interpretation and administration of regulations governing the “upstream” petroleum industry, and concerns with regard to political stability and security of personnel and equipment.

A total of 864 respondents participated in the survey this year, providing sufficient data to evaluate 157 jurisdictions. By way of comparison 147 jurisdictions were evaluated in the 2012 survey, 135 in 2011, and 133 in 2010.

The jurisdictions were assigned scores for each of 16 questions pertaining to factors known to affect investment decisions. The scores are based on the proportion of negative responses a jurisdiction received on each question. The greater the proportion of negative responses for a jurisdiction, the greater were its perceived investment barriers and, therefore, the lower its ranking.

A Policy Perception Index (referred to in previous survey years as the All-Inclusive Composite Index) derived from the scores on each of the 16 factor questions captures investors’ perceptions on conditions affecting investment decisions and provides a comprehensive assessment of each jurisdiction. The Policy Perception Index does not factor in a jurisdiction’s known petroleum reserves. A new section has been added to this year’s report to show how jurisdictions compare on their Policy Perception Index measure in the context of their proved reserves.

On the Policy Perception index, the 10 least attractive jurisdictions for investment (starting with the worst) are Venezuela, Ecuador, Iran, Bolivia, Russia—Offshore Arctic, Uzbekistan, Russia—Eastern Siberia, South Sudan, Iraq, and Russia—Other (i.e., all of Russia except for Offshore Arctic, Offshore Sakhalin, and Eastern Siberia). Each of the jurisdictions in this group except Russia—Offshore Arctic and South Sudan were also among the 10 least desirable jurisdictions for investment in oil and gas exploration and development identified in the 2012 survey.

The jurisdictions with Policy Perception Index scores in the first quintile (i.e., less than 20, suggesting that obstacles to investment are lower than in all other jurisdictions assessed by the survey), are all located in Canada, the United States, and Europe. According to this year’s survey, the 10 most attractive jurisdictions for investment worldwide are Oklahoma, Mississippi, Saskatchewan, Texas, Arkansas, Kansas, Alabama, North Dakota, Manitoba, and Netherlands—North Sea. Six of these jurisdictions were in last year’s top 10 most attractive jurisdictions. Saskatchewan, Arkansas, and Alabama (2 US states that were not ranked in 2012), and Netherlands—North Sea were not in

last year's top 10 list. These 4 jurisdictions displaced Netherlands, New Mexico, Denmark, and West Virginia from the list.

As mentioned above, a new section has been added to this year's report to examine how jurisdictions compare on their Policy Perception Index measure when their proved oil and gas reserves are considered. Jurisdictions with proved (sometimes referred to as "proven") reserves have been split into three tiers based on their holdings of the world's proved oil and gas reserves with Tier One jurisdictions each holding at least 1 percent, Tier Two holding between 0.1 and 1 percent, and Tier Three holding up to 0.1 percent.

Twenty-seven of the jurisdictions assessed hold at least 1 percent of the world's proved oil and gas reserves, ranging from India's 13.9 billion barrels of oil equivalent (Bboe) to Iran's 369.6 Bboe. Together, the jurisdictions in this group of large reserve holders (Tier One) account for 92 percent of global reserves. Most remarkably, the 9 Tier One jurisdictions that stand out as the least attractive for investment on the basis of their Policy Perception Index scores (Venezuela, Iran, the four Russian regions, Iraq, Libya, and Kazakhstan) account for more than half of the world's proved oil and reserves. The seven large-reserve holders that rank highest according to that measure are Texas, Qatar, Alberta, United Arab Emirates, Norway—North Sea, Australia—Offshore, and Kuwait.

Forty-one jurisdictions assessed in the survey hold at least 0.1 percent of global reserves, but less than 1 percent, ranging from Chad's 1.5 Bboe to Oman's 11.8 Bboe. Of these, Ecuador, Bolivia, Uzbekistan, and South Sudan appear to pose the greatest barriers to upstream investment. The 10 most attractive jurisdictions with reserves in this size group (Tier Two) are: Oklahoma, Arkansas, North Dakota, Netherlands—Onshore, Louisiana, Wyoming, United Kingdom—North Sea; Norway, Oman, and Utah.

Of the 70 jurisdictions with very little proved oil and gas reserves, and no more than 0.1 percent of the global amount (ranging from almost negligible holdings in the case of Spain—Offshore to West Virginia's 1.3 Bboe), those deemed the least attractive for investment on the basis of poor Policy Perception Index scores are: Argentina—Salta, Kyrgyzstan, the 5 other Argentine provinces included in the survey, Somaliland, and Guatemala. The top performers in this group of very small reserve holders (Tier Three) are Mississippi, Saskatchewan, Kansas, Alabama, Manitoba, and the Netherlands—North Sea.

Barriers to investment have increased in a number of jurisdictions over the past year. In particular, Policy Perception Index scores increased by at least 15 points compared with the corresponding 2012 scores for New Mexico, Michigan, Colorado, Cyprus, Hungary, Guyana, France, Romania, California, Bulgaria, New York, Guatemala, Quebec, and Kyrgyzstan, indicating that investors perceive that these jurisdictions have increased investment barriers. The deterioration in attractiveness for investment was greatest in Colorado, Hungary, Cyprus, Guatemala, California, Bulgaria, and New York.

This year, 14 jurisdictions improved their relative attractiveness for investment by at least 10 points on the Policy Perception Index measure. Of those, Chile, Jordan, Mali, and Pakistan improved by at least 20 points and each achieved significant gains in the global and regional Index rankings. Other jurisdictions that improved significantly on that index this year are Namibia, Bahrain, Brunei, Thailand, Albania, South Africa, New Brunswick, Ivory Coast, East Timor, and Yemen.

Two optional survey questions were included in this year's survey. First, participants were asked "how would your assessment of investment potential change were the United States to implement federal control over hydraulic fracturing?" In response, slightly more than half of the respondents indicated that they would decrease or modestly decrease their assessment as a result, while 27 percent would not change their assessment.

Second, survey participants were asked "how would your assessment of the attractiveness of Western Canada and the Northwest Territories for investment change if Canada continues to face a shortfall in oil-transport capability to Eastern Canada, export markets overseas, and US refiners?" The majority (62%) of respondents noted that the attractiveness would decline while nearly a third (29%) would not change their assessment.

Respondents' comments highlight reasons for the investment attractiveness (or not) of some jurisdictions. As in previous surveys, investors indicate that they continue to turn away from jurisdictions with onerous fiscal regimes, political instability, and land claim disputes. Similarly, investors prefer to avoid jurisdictions with costly, time-consuming uncertain regulations. Other factors being equal, competitive tax and regulatory regimes can attract investment and thus generate substantial economic benefits.

# Survey methodology

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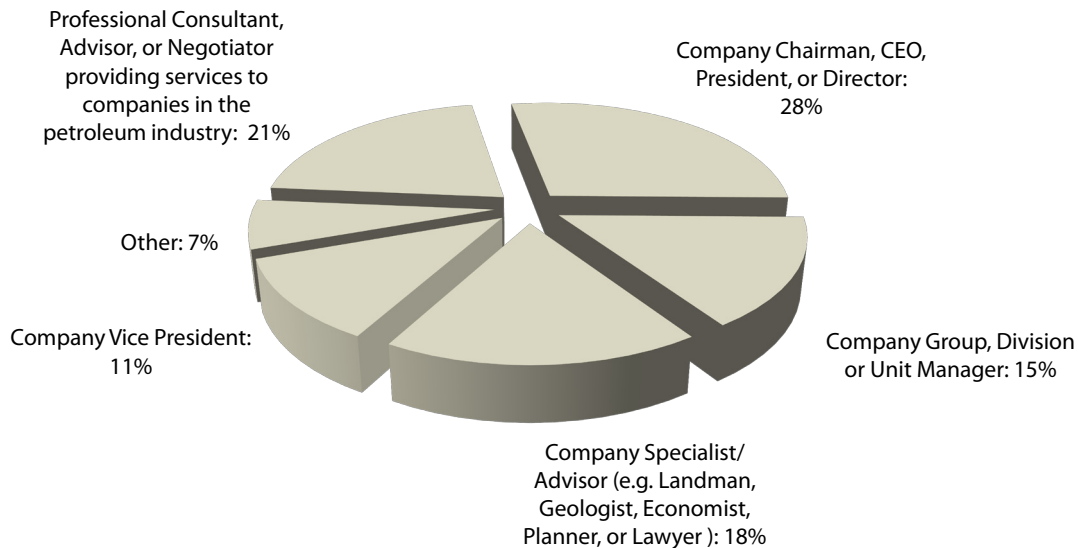
## Sample design

This survey is designed to identify provinces, states, offshore regions, other geographic areas, and countries with the greatest barriers to investment in oil and gas exploration and production. Jurisdictions assessed by investors as relatively unattractive may then be prompted to consider policy reforms that could improve their rankings. Presumably, petroleum companies use the information that is provided to corroborate their own assessments and to identify jurisdictions where business conditions and the regulatory environment are most attractive for investment. The survey results are also a useful source of information for the media, providing independent information as to how particular jurisdictions compare.

The survey was distributed to managers and executives in the “upstream” petroleum industry. This includes exploration for oil and gas reserves, and the production of crude oil, bitumen, and both conventional sources of natural gas and non-conventional sources such as coalbed methane, and gas embedded in shale formations. It does not include the refining, upgrading, or processing of crude oil, bitumen, and raw natural gas, or the transportation and marketing of petroleum products.

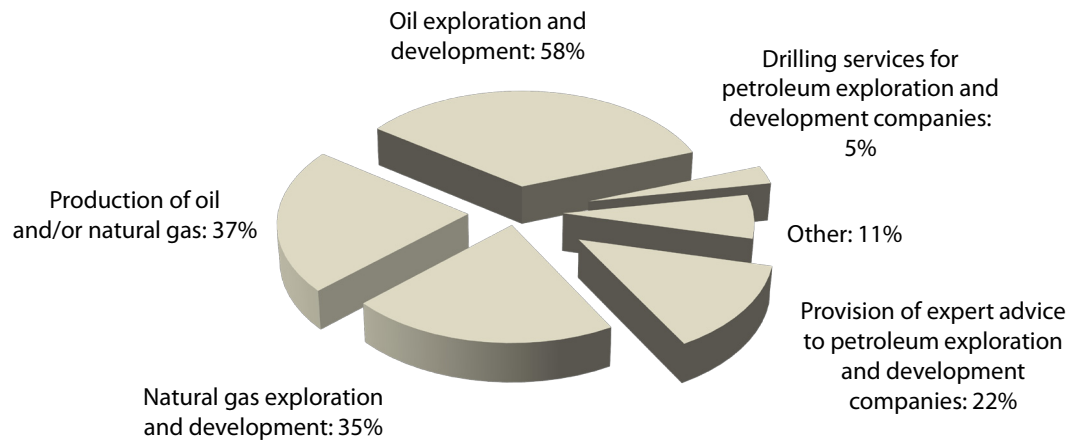
The names of potential respondents were taken from publicly available membership lists of trade associations and other sources. In addition, some industry associations and non-profit think tanks (e.g., the Instituto Argentino del Petroleo y del Gas; the Asociación Española de Compañías de Investigación, Exploración, Producción de Hidrocarburos y Almacenamiento Subterráneo; the Central Asian Free Market Institute in Kyrgyzstan; the Economic Policy Institute-Bishkek Con-

**Figure 1: The position survey respondents hold in their company, 2013**





**Figure 2: Activities performed by firms of survey respondents, 2013**



sensus also in Kyrgyzstan; the Initiative for Public Policy Analysis in Nigeria; the Nassau Institute in the Bahamas; and POPULI in Bolivia) provided contact information.

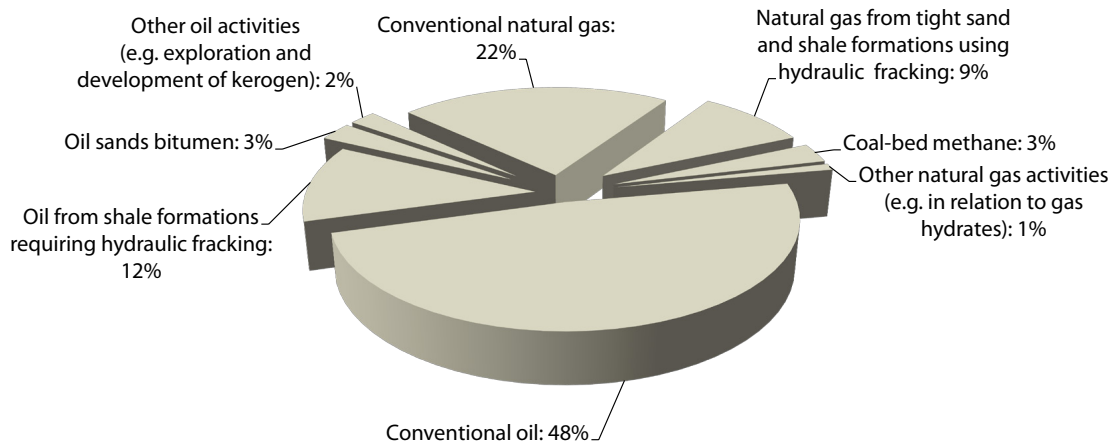
The survey was conducted from February 20, 2013, until May 6, 2013. A total of 864 responses were received from individuals working with 762 companies. As figure 1 illustrates, just over half (55%) of the respondents identified themselves as either a manager or holding a higher-level position. The exploration and development budgets of the companies that were represented totalled about \$312 billion in 2012. This accounts for more than 50 percent of the total of \$619 billion of global upstream expenditures of these kinds that were made last year, according to an estimate in the International Energy Agency's most recent World Energy Outlook (International Energy Agency, 2012). Figure 2 shows that 94 percent of the firms participating in the survey are engaged in the exploration and development of oil and/or natural gas, 37 percent are engaged in production of oil and/or natural gas, and 27 percent provide expert advice and/or drilling services.<sup>1</sup>

Figure 3 shows the principal focus of the petroleum exploration and development activities of companies whose managers or other representatives participated in the survey. The focus of most of these companies (71 percent) is on finding and developing conventional oil and gas reserves. The percentage of companies focusing on finding and developing conventional oil and gas reserves has declined in recent years from 82 percent in 2011 and 80 percent in 2012. Unconventional natural gas exploration and development represented 29 percent of the focus of companies in 2013.

Sixteen percent of the upstream activity reported by participants employed by petroleum firms involves unconventional oil resources. The majority of this activity (70 percent) involves the recovery of oil from shale formations using hydraulic fracking, 17 percent is focused on oil sands

<sup>1</sup> Firms were invited to select all activities performed; therefore, activities reported exceed 100 percent.

**Figure 3: Company focus in petroleum exploration and development business, as indicated by respondents**



bitumen and 13 percent on other oil activities such as the exploration or development of oil from kerogen found in shale rock.

Thirteen percent of upstream activity of participants in the survey involves unconventional natural gas resources. The majority of this activity (70 percent) involves the recovery of natural gas from tight sand and shale formations using hydraulic fracking. Twenty-two percent is focused on coal-bed methane. Other unconventional natural gas activities (related to gas hydrates) were reported by seven percent of the petroleum firms in the survey.

## Survey questionnaire

The survey was designed to capture the opinions of managers and executives regarding the level of investment barriers in jurisdictions with which their companies are familiar. Respondents were asked to indicate how each of the 16 factors listed below influence company decisions to invest in various jurisdictions.

1. Fiscal terms— include licenses, lease payments, royalties, other production taxes, and gross revenue charges, but not corporate and personal income taxes, capital gains taxes, or sales taxes.
2. Taxation in general— the tax burden, including personal, corporate, payroll, and capital taxes, and the complexity of tax compliance, but excluding petroleum exploration and production licenses and fees, land lease fees, and royalties and other charges directly against petroleum production.
3. Environmental regulations—stability of regulations, consistency, and timeliness of regulatory process, regulations not based on science, etc.
4. Regulatory enforcement—uncertainty in the jurisdictions with which you are familiar regarding the administration, interpretation, stability, or enforcement of existing regulations.
5. Cost of regulatory compliance—re: filing permit applications, participating in hearings, etc.
6. Protected areas—uncertainty concerning what areas can be protected as wilderness or parks, marine life preserves, or archaeological sites.
7. Trade barriers—tariff and non-tariff barriers to trade and restrictions on profit repatriation, currency restrictions, etc.
8. Labour regulations and employment agreements—impact of labor regulations, employment agreements, labor militancy/work disruptions, and local hiring requirements.
9. Quality of infrastructure—includes access to roads, power availability, etc.
10. Quality of geological database—includes quality, detail, and ease of access to geological information.
11. Labor availability and skills—the supply and quality of labor, and the mobility that workers have to relocate.
12. Disputed land claims—the uncertainty of unresolved claims made by aboriginals, other groups, or individuals.
13. Political stability.
14. Security—the physical safety of personnel and assets.
15. Regulatory duplication and inconsistencies (includes federal/provincial, federal/state, inter-departmental overlap, etc.)
16. Legal system—legal processes that are fair, transparent, non-corrupt, efficiently administered, etc.

The 16 factors above were unchanged from the 2012 survey. However two questions that had been included—on socioeconomic agreements or community development conditions and on corruption of government officials—were dropped this year in response to complaints from previous years’ respondents that the survey had become onerously lengthy. Too, those questions were seen to be redundant, or overlap heavily with other questions.

For each of the 16 factors, respondents were asked to select one of the following five responses that best described each jurisdiction with which they were familiar:

1. Encourages investment
2. Is not a deterrent to investment
3. Is a mild deterrent to investment
4. Is a strong deterrent to investment
5. Would not invest due to this criterion

The 2013 survey included a list of 157 jurisdictions that respondents could select for evaluation, including all of the Canadian provinces and territories except Ontario, Prince Edward Island, and Nunavut; many US oil and gas producing states (as well as the US Alaska, Pacific, and Gulf Coast offshore regions); all six Australian states, the Australian offshore, and the Timor Gap Joint Petroleum Development Area (JPDA); and countries with current or potential petroleum production capacity. Russia was split into four categories: Offshore Arctic, Offshore Sakhalin, Eastern Siberia, and the rest of the country. Six provinces in Argentina were also included in the survey: Chubut, Mendoza, Neuquen, Salta, Santa Cruz, and Tierra del Fuego. Brazil was again represented by three separate categories: onshore concessions, offshore concessions, and offshore “pre-salt” regions. Mexico and Saudi Arabia, where investment in upstream petroleum exploration and development is mostly confined to government-owned facilities, were again excluded from the list of jurisdictions that respondents could rank.

This year’s survey list added five new jurisdictions: Botswana, French Guiana, Seychelles, Spain—Offshore and Spain—Onshore.

## Scoring the survey responses

For each jurisdiction, we calculated the percentage of negative scores for each of the 16 factors.<sup>2</sup> We then developed an index for each factor by assigning the jurisdiction with the highest percentage of negative responses a value of 100, and correspondingly lower values to the other jurisdictions

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2 The negative scores were determined by the number of times respondents graded a factor as “a mild deterrent to investment,” “a strong deterrent to investment,” or indicated that they “would not invest” in the jurisdiction because of issues related to that factor.

according to their scores. Jurisdictions with the lowest index values are considered the most attractive by upstream investors and thus rank above jurisdictions with higher values as a consequence of having greater proportions of negative scores.

In past years, only jurisdictions evaluated on all 16 factors by at least 5 respondents were included in the rankings. This year, we were able to increase this minimum threshold to 10 for all jurisdictions except Botswana, Malta, Jordan, Mali, US Offshore—Pacific, Somaliland, and Kyrgyzstan for which 5 to 8 responses were received for all 16 policy questions. This allowed us to rank all of the 157 jurisdictions listed in the questionnaire. The median number of responses to all questions across all jurisdictions was 24.5, which compares favorably with 15 in the 2012 survey.

In addition to rankings for each of the 16 factors, jurisdictions were ranked on the basis of five composite indices, as follows.

### **Policy Perception Index**

The Policy Perception Index value (referred to in previous surveys as the All-Inclusive Composite Index) for each jurisdiction is derived from the equally-weighted<sup>3</sup> scores achieved on all 16 factors. This index captures the perceptions of managers and executives regarding the level of investment barriers on a range of factors and conditions affecting investment decisions as well as capturing a wide range of energy policies. It is the most comprehensive measure of the investment barriers within each jurisdiction and most of the discussion that follows is based on the jurisdictional scores and rankings obtained using it. A large score on this measure indicates that investors regard the jurisdiction in question as relatively unattractive for investment.

### **Commercial Environment Index**

The Commercial Environment Index ranks jurisdictions on five factors that affect after-tax cash flow and the cost of undertaking petroleum exploration and development activities:

- fiscal terms
- taxation in general
- trade barriers
- quality of infrastructure
- labor availability and skills

For each jurisdiction the scores for this index were calculated by averaging the negative scores for each of these five factors. A high index value indicates that industry managers and executives consider that the business conditions reflected in this measure constitute significant barriers to investment.

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3 The scores for each of the 16 factors are published online to permit interested parties to tailor weighting and composite indices to suit their needs.

## **Regulatory Climate Index**

The Regulatory Climate Index reflects the scores assigned to jurisdictions for the following six factors:

- the cost of regulatory compliance
- regulatory enforcement
- environmental regulations
- labor regulations and employment agreements
- regulatory duplication and inconsistencies
- legal system

A relatively high value on the Regulatory Climate Index indicates that regulations, requirements, and agreements in a jurisdiction constitute a substantial barrier to investment, resulting in a relatively poor ranking.

## **Geopolitical Risk Index**

The Geopolitical Risk Index represents the scores garnered by jurisdictions for political stability and security. These factors are considered to be more difficult to overcome than either regulatory or commercial barriers because a change in the political landscape is usually required for significant progress to be achieved. A high score on the Geopolitical Risk Index indicates that investment in that jurisdiction is relatively unattractive because of political instability and/or security issues that threaten the physical safety of personnel or present risks to an investor's facilities.

## **Best practices**

The inclusion of a question in the survey on the extent to which exploration and development might increase if a full and complete transition to "best practices" (in relation to the main drivers of investment decisions) were to occur allowed us to measure the potential impact of the adoption of best practices on the attractiveness for investment in each jurisdiction.

## Global results

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### Policy Perception Index

Table 1 compares the 2013, 2012, 2011, 2010, and 2009 scores and rankings on the Policy Perception Index. The first column presents the 2013 ranking, and the second column indicates how the jurisdiction ranked in the 2012<sup>4</sup> survey, etc. The second set of columns presents the absolute scores for each jurisdiction in each of the 5 years, respectively, based on the percentage of negative responses to each of the survey questions. Those at the top of the list are regarded as having relatively low investment barriers and, therefore, as being more attractive for investment. Readers are reminded again that these rankings are driven purely by responses to the survey questions and do not account for the extent of the jurisdictions' proved oil and gas reserves, which will be discussed later. Hence it is possible for jurisdictions with relatively small or even no reserves to score more highly on evaluations of their business conditions, regulatory regimes, and other factors (but excluding the extent of their petroleum resources) than jurisdictions with much larger reserves.

The 10 jurisdictions with the highest percentage of negative responses, indicating the greatest barriers to investment, are:

1. Russia—other
2. Iraq
3. South Sudan
4. Russia—Eastern Siberia
5. Uzbekistan
6. Russia—Offshore Arctic
7. Bolivia
8. Iran
9. Ecuador
10. Venezuela

With the exception of South Sudan and Russia—Offshore Arctic, all of these jurisdictions were also in the 10 least attractive jurisdictions for investment in the 2012 survey. Of the four Russian jurisdictions in the 2013 survey, only Russia—Offshore Sakhalin is not in the group of 10 least attractive jurisdictions this year, ranking 140<sup>th</sup> least attractive (of 157). The two jurisdictions displaced from the bottom 10 in the 2013 survey are Libya and Argentina—Santa Cruz. Libya has improved its score although its ranking has dropped from 143 (of 147) in 2012 to 145 (of 157).

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4 Note that, for any jurisdiction, comparison of the 2012 and 2013 values for this Index is affected by the fact that scores on the question regarding socioeconomic agreements/community development conditions were included in the calculation prior to 2013 and scores on the corruption question were included in the calculation for 2012.

**Table 1: Jurisdictional rankings according to the extent of investment barriers (based on Policy Perception Index values)**

	2013 Rank in Group of 157	2012 Rank in Group of 147	2011 Rank in Group of 135	2010 Rank in Group of 133	2009 Rank in Group of 140	2013 Score	2012 Score	2011 Score	2010 Score	2009 Score
US—Oklahoma	1	1	4	9	9	9.84	4.71	11.81	13.00	11.30
US—Mississippi	2	2	1	6	5	11.19	6.30	4.89	11.65	9.88
CA—Saskatchewan	3	13	11	17	38	11.43	14.60	17.48	17.63	25.02
US—Texas	4	3	5	2	8	11.71	8.03	12.17	9.53	10.97
US—Arkansas	5	N/A	15	13	1	12.34	N/A	19.16	15.62	6.73
US—Kansas	6	8	3	19	3	12.64	12.32	11.70	18.80	8.93
US—Alabama	7	N/A	8	10	2	15.34	N/A	17.00	13.41	8.88
US—North Dakota	8	4	10	24	28	15.92	9.88	17.44	19.65	22.37
CA—Manitoba	9	5	12	8	21	16.87	11.05	17.52	12.48	20.98
Netherlands— North Sea	10	12	7	26	18	18.66	14.30	15.88	20.26	19.16
Netherlands	11	6	24	25	25	21.68	11.42	22.11	20.02	21.63
Faroe Islands	12	18	26	N/A	N/A	22.11	19.59	23.33	N/A	N/A
Denmark	13	9	17	33	40	22.46	13.09	20.47	23.99	25.53
US—Louisiana	14	15	14	15	15	22.57	15.26	18.87	16.62	16.18
US—Wyoming	15	11	27	4	16	22.63	13.87	23.38	10.25	17.35
United Kingdom— North Sea	16	22	22	29	39	23.47	21.44	21.77	21.23	25.02
Botswana***	17	N/A	N/A	N/A	N/A	23.96	N/A	N/A	N/A	N/A
Qatar	18	32	33	30	35	24.16	25.42	25.73	21.47	23.90
CA—Alberta	19	21	51	60	92	24.47	21.08	32.73	36.70	47.46
Norway	20	31	54	51	46	25.18	25.31	33.52	32.69	28.28
US—Montana	21	23	43	35	41	25.89	22.17	29.74	24.26	25.74
US—West Virginia	22	10	6	49	58	25.91	13.64	13.35	31.93	32.34
United Kingdom	23	38	32	32	45	26.40	27.63	25.35	23.55	27.87
CA—Newfound- land & Labrador	24	47	50	50	82	26.43	33.78	32.34	32.39	40.87
United Arab Emirates	25	42	39	41	47	26.49	30.65	28.59	28.89	28.29
Chile	26	76	20	22	23	26.63	49.51	21.45	19.55	21.46
AU—South Australia	27	29	21	14	17	26.91	24.83	21.50	15.74	18.73
Norway—North Sea	28	19	31	47	37	27.06	19.95	24.89	31.47	24.81
US—Ohio	29	14	2	12	36	27.35	14.97	10.16	13.76	24.06
CA—Nova Scotia	30	35	34	53	54	27.52	26.17	26.64	33.28	30.37
Oman	31	46	57	44	52	27.84	32.77	34.18	30.03	29.78
US—Utah	32	24	18	7	13	28.09	22.65	21.28	12.04	15.45
AU—Northern Territory	33	44	30	16	32	29.25	32.12	24.87	17.14	23.46



**Table 1: Jurisdictional rankings *continued* ...**

	<b>2013 Rank in Group of 157</b>	<b>2012 Rank in Group of 147</b>	<b>2011 Rank in Group of 135</b>	<b>2010 Rank in Group of 133</b>	<b>2009 Rank in Group of 140</b>	<b>2013 Score</b>	<b>2012 Score</b>	<b>2011 Score</b>	<b>2010 Score</b>	<b>2009 Score</b>
New Zealand	34	20	16	18	30	29.60	20.59	20.33	18.32	23.19
Ireland	35	17	N/A	N/A	27	29.60	18.26	N/A	N/A	21.88
US—New Mexico	36	7	41	54	43	30.36	11.92	28.79	34.27	26.75
Seychelles	37	N/A	N/A	N/A	N/A	30.98	N/A	N/A	N/A	N/A
Namibia	38	67	49	48	19	31.31	43.72	32.09	31.88	19.80
CA—Yukon	39	58	N/A	36	105	31.99	38.04	N/A	25.50	54.05
US—Illinois	40	N/A	13	3	12	32.51	N/A	17.75	9.65	15.26
US Offshore— Gulf of Mexico	41	26	60	11	14	33.07	22.89	36.38	13.44	15.96
Georgia	42	49	N/A	N/A	N/A	33.40	35.04	N/A	N/A	N/A
Malta***	43	25	N/A	N/A	N/A	33.76	22.86	N/A	N/A	N/A
Bahrain	44	78	38	46	24	34.51	49.71	28.37	30.81	21.62
Jordan***	45	99	N/A	75	87	34.60	58.86	N/A	44.40	44.56
Poland	46	41	36	37	93	35.03	29.12	27.24	26.84	47.53
CA—British Columbia	47	39	69	52	71	35.55	27.73	41.44	33.16	37.66
Turkey	48	66	70	84	101	35.63	43.56	41.51	48.15	51.57
AU—Western Australia	49	40	37	21	56	35.70	28.78	28.18	19.13	31.25
Brunei	50	85	71	45	55	35.81	52.56	41.51	30.46	31.15
Morocco	51	57	61	67	61	36.18	37.72	36.58	40.97	33.49
AU—Tasmania	52	51	28	23	44	36.69	35.74	23.66	19.61	27.13
Trinidad and Tobago	53	69	58	59	59	37.45	44.79	34.18	36.54	32.81
Australia— Offshore	54	33	40	31	N/A	37.65	25.86	28.61	21.93	N/A
Germany	55	36	35	39	50	38.07	26.27	27.04	27.48	28.90
AU—Victoria	56	43	19	20	57	38.74	31.78	21.40	18.96	31.52
Japan	57	37	56	69	74	39.05	27.37	33.96	42.06	38.53
US—Pennsylvania	58	34	65	66	51	39.13	26.04	40.37	40.44	29.56
Thailand	59	84	64	73	64	39.14	51.82	39.90	43.42	35.77
Kuwait	60	64	74	83	77	39.56	42.23	43.76	46.10	39.71
CA—Northwest Territories	61	60	103	74	120	40.84	39.62	64.84	44.08	62.84
US—Michigan	62	30	29	38	22	41.03	24.87	23.87	27.27	21.00
Uruguay	63	81	52	27	67	41.38	51.31	32.76	21.10	36.26
Spain—Offshore	64	N/A	N/A	N/A	N/A	41.52	N/A	N/A	N/A	N/A
Spain—Onshore	65	N/A	N/A	N/A	N/A	41.85	N/A	N/A	N/A	N/A
US—Colorado	66	16	53	61	81	42.02	16.85	33.47	37.35	40.42
Albania	67	95	73	81	85	43.41	57.19	42.34	45.64	42.90
Malaysia	68	83	79	63	75	43.55	51.77	47.47	39.71	39.06

**Table 1: Jurisdictional rankings *continued* ...**

	<b>2013 Rank in Group of 157</b>	<b>2012 Rank in Group of 147</b>	<b>2011 Rank in Group of 135</b>	<b>2010 Rank in Group of 133</b>	<b>2009 Rank in Group of 140</b>	<b>2013 Score</b>	<b>2012 Score</b>	<b>2011 Score</b>	<b>2010 Score</b>	<b>2009 Score</b>
AU—Queensland	69	50	42	34	49	45.07	35.40	29.12	24.06	28.80
Israel	70	54	81	N/A	N/A	45.33	37.06	48.73	N/A	N/A
South Africa	71	106	85	88	99	45.62	63.75	51.55	49.95	50.36
Philippines	72	91	86	55	90	47.15	55.56	53.31	35.68	45.65
Colombia	73	65	48	42	66	47.65	43.36	31.81	29.60	36.16
Ghana	74	80	72	89	73	47.88	51.27	41.89	50.33	37.95
US Offshore— Alaska	75	52	78	57	72	48.11	35.92	47.23	36.20	37.92
Cyprus	76	27	N/A	N/A	N/A	48.22	24.43	N/A	N/A	N/A
Mauritania	77	97	111	N/A	N/A	48.55	57.69	70.56	N/A	N/A
Tunisia	78	56	62	62	20	49.35	37.66	36.93	38.95	20.42
US—Alaska	79	61	83	68	78	49.70	40.16	50.84	41.80	39.75
Hungary	80	28	9	43	91	49.83	24.79	17.06	29.82	46.62
CA—New Brunswick	81	102	59	N/A	N/A	49.94	62.08	35.80	N/A	N/A
Greenland	82	59	44	56	83	50.65	38.60	30.08	36.04	41.44
Mali***	83	128	N/A	N/A	N/A	50.90	74.23	N/A	N/A	N/A
AU—New South Wales	84	63	45	40	62	50.92	41.50	30.14	28.05	33.77
Ivory Coast	85	108	80	99	128	50.99	64.04	47.74	55.79	69.76
Cameroon	86	82	98	76	108	51.66	51.49	59.82	44.70	55.27
Suriname	87	N/A	87	70	111	51.94	N/A	54.19	42.26	57.52
Lebanon	88	71	N/A	N/A	N/A	52.22	45.61	N/A	N/A	N/A
Tanzania	89	89	89	82	96	52.32	54.67	54.95	45.66	49.09
Guyana	90	48	97	N/A	125	52.39	34.12	58.48	N/A	65.99
Mozambique	91	90	75	97	80	52.71	55.54	45.22	55.19	40.32
Pakistan	92	129	107	105	119	53.26	74.43	67.70	62.17	62.77
Azerbaijan	93	70	104	108	86	53.93	45.58	65.45	64.33	43.91
Italy	94	96	77	78	103	54.17	57.42	46.91	45.01	52.83
Kenya	95	86	N/A	N/A	N/A	54.56	52.58	N/A	N/A	N/A
France	96	55	46	58	48	55.26	37.23	30.65	36.43	28.61
Romania	97	53	63	95	65	55.34	36.57	38.56	53.96	36.09
US—California	98	45	91	87	79	55.70	32.47	55.99	49.35	40.13
Vietnam	99	92	84	64	104	56.13	55.73	51.23	40.29	53.95
US Offshore— Pacific***	100	N/A	101	103	33	56.20	N/A	63.17	60.66	23.55
China	101	103	90	90	88	57.23	62.53	55.43	51.66	44.86
Gabon	102	100	99	91	95	57.85	59.15	60.23	52.10	48.74
Ethiopia	103	72	N/A	119	134	58.74	47.07	N/A	76.15	74.24
Equatorial Guinea	104	107	121	101	124	58.74	63.85	76.85	59.16	65.15

**Table 1: Jurisdictional rankings *continued* ...**

	<b>2013 Rank in Group of 157</b>	<b>2012 Rank in Group of 147</b>	<b>2011 Rank in Group of 135</b>	<b>2010 Rank in Group of 133</b>	<b>2009 Rank in Group of 140</b>	<b>2013 Score</b>	<b>2012 Score</b>	<b>2011 Score</b>	<b>2010 Score</b>	<b>2009 Score</b>
Brazil—Onshore concession contracts	105	88	67	*	*	59.02	52.72	40.83	*	*
Peru	106	94	76	85	102	59.22	57.01	46.37	48.36	51.60
Brazil—Offshore concession contracts	107	74	68	*	*	59.71	48.08	41.22	*	*
Angola	108	118	117	93	112	60.14	69.84	72.70	52.65	58.72
French Guiana	109	N/A	N/A	N/A	N/A	60.18	N/A	N/A	N/A	N/A
Niger	110	79	N/A	112	142	60.75	50.88	N/A	65.46	99.03
Timor Gap (JPDA)	111	73	47	72	63	61.09	47.34	30.75	42.52	34.82
Madagascar	112	105	100	98	N/A	61.14	63.54	62.66	55.54	N/A
East Timor	113	121	112	118	N/A	61.28	71.63	70.68	76.06	N/A
Bulgaria	114	62	55	86	84	61.68	40.93	33.94	49.21	41.54
Brazil—Offshore presalt area profit sharing contracts	115	75	66	*	*	61.73	48.36	40.79	*	*
Greece	116	93	N/A	N/A	106	61.99	55.80	N/A	N/A	54.26
Egypt	117	104	93	79	69	62.62	62.70	56.47	45.32	37.15
Uganda	118	87	122	94	N/A	64.06	52.66	77.72	53.41	N/A
US—New York	119	68	N/A	102	29	64.20	44.08	N/A	59.34	22.73
Yemen	120	130	120	116	100	64.42	74.50	75.25	69.66	51.46
Republic of the Congo (Brazzaville)	121	113	113	104	116	66.41	67.29	70.71	60.90	61.04
Democratic Republic of the Congo (Kinshasa)	122	120	129	106	130	69.32	71.03	85.14	62.81	70.68
Turkmenistan	123	98	124	128	115	70.23	58.79	80.31	87.41	60.57
India	124	124	109	107	107	70.41	72.98	69.56	63.34	54.71
Papua New Guinea	125	123	96	110	94	70.62	72.96	57.68	65.11	48.29
Algeria	126	125	125	109	118	71.04	73.23	80.93	64.37	61.83
Myanmar	127	115	108	113	133	71.18	68.82	68.42	66.59	73.60
Guatemala	128	77	N/A	N/A	97	73.48	49.57	N/A	N/A	49.69
Argentina—Neuquen	129	111	102	*	*	73.76	65.49	63.88	*	*
Cambodia	130	135	110	92	123	73.89	79.97	70.38	52.35	64.08
Argentina—Santa Cruz	131	140	94	*	*	74.02	84.00	57.13	*	*
Indonesia	132	127	114	111	114	74.36	74.14	71.57	65.12	59.66
Chad	133	132	115	114	132	74.96	74.92	71.94	66.98	73.46

**Table 1: Jurisdictional rankings *continued* ...**

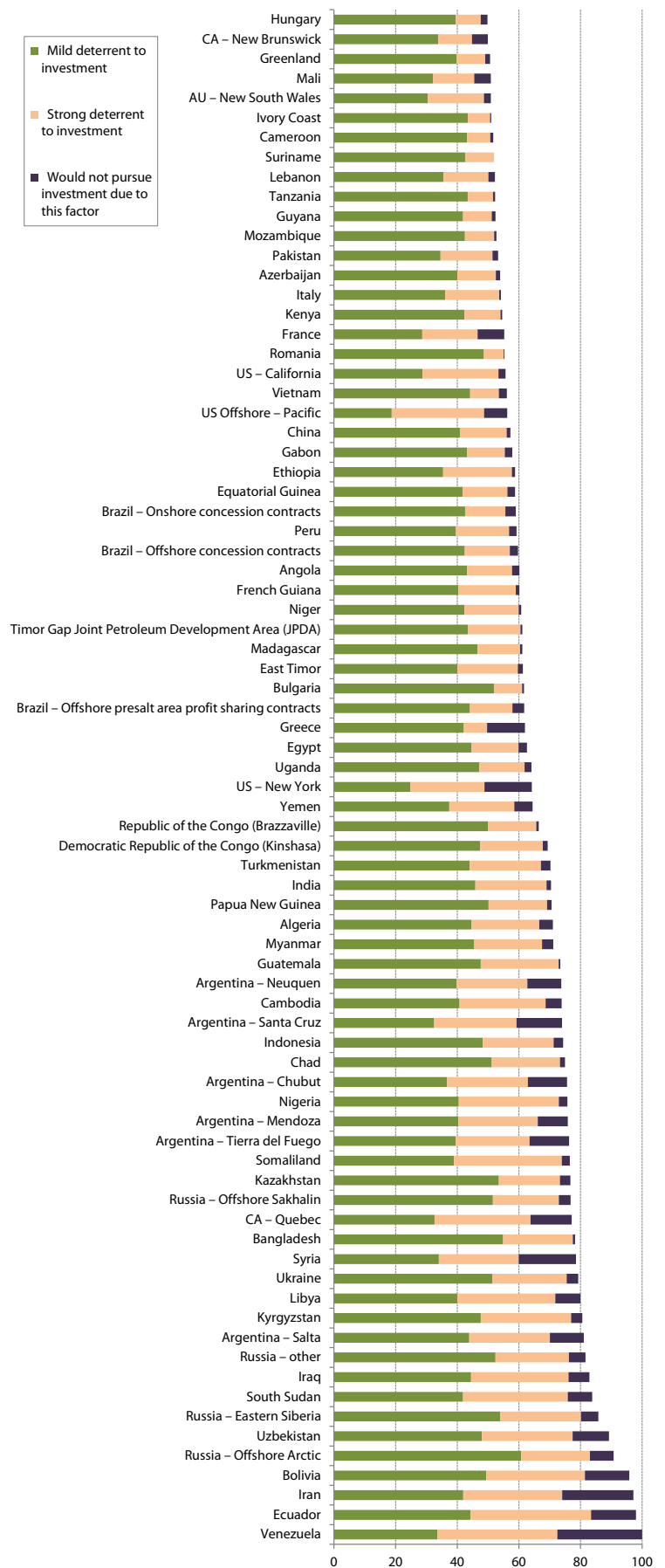
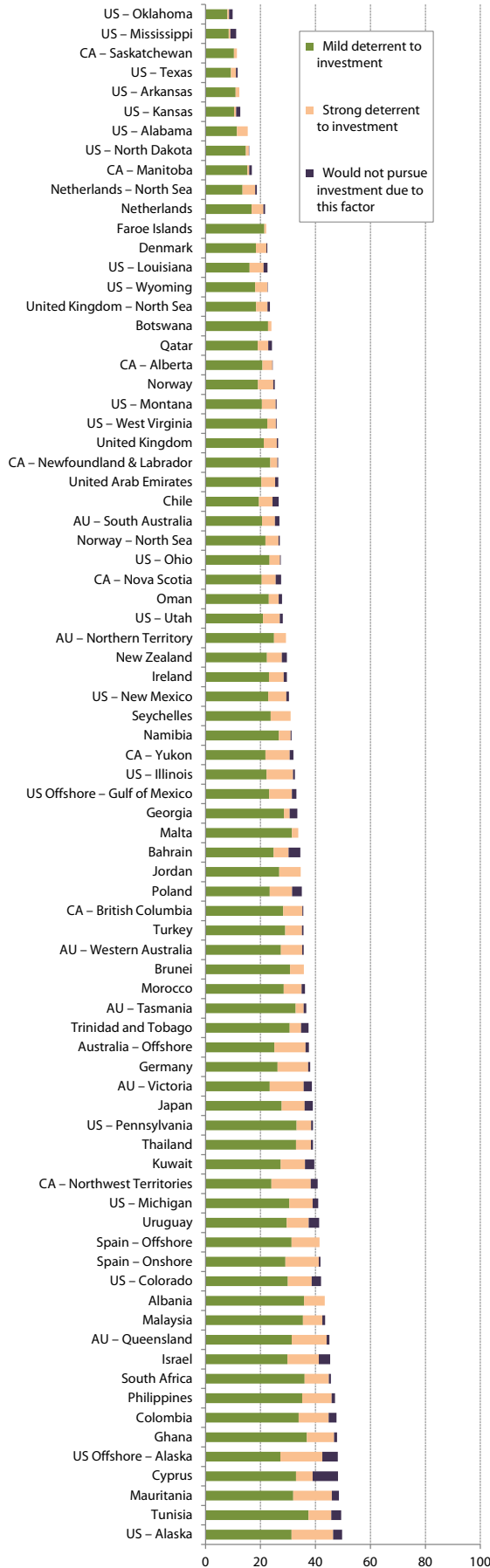
	<b>2013 Rank in Group of 157</b>	<b>2012 Rank in Group of 147</b>	<b>2011 Rank in Group of 135</b>	<b>2010 Rank in Group of 133</b>	<b>2009 Rank in Group of 140</b>	<b>2013 Score</b>	<b>2012 Score</b>	<b>2011 Score</b>	<b>2010 Score</b>	<b>2009 Score</b>
Argentina—Chubut	134	112	95	*	*	75.62	65.55	57.48	*	*
Nigeria	135	137	123	126	136	75.75	81.31	79.36	83.38	74.85
Argentina—Mendoza	136	119	88	N/A	N/A	75.88	69.99	54.66	N/A	N/A
Argentina—Tierra del Fuego	137	122	*	*	*	76.29	72.58	*	*	*
Somaliland***	138	110	N/A	N/A	N/A	76.56	65.22	N/A	N/A	N/A
Kazakhstan	139	134	131	124	135	76.73	78.64	89.27	80.45	74.43
Russia—Offshore Sakhalin	140	133	*	*	*	76.75	77.31	*	*	*
CA—Quebec	141	101	92	77	68	77.11	60.53	56.24	44.89	36.89
Bangladesh	142	114	118	115	137	78.23	67.75	72.99	68.75	74.99
Syria	143	131	106	96	109	78.53	74.66	67.69	55.17	56.27
Ukraine	144	116	119	130	126	79.27	69.12	74.16	88.73	69.16
Libya	145	143	127	121	113	79.98	85.55	83.69	76.60	58.95
Kyrgyzstan***	146	109	105	123	117	80.60	64.21	66.34	79.74	61.04
Argentina—Salta	147	126	82	*	*	81.08	73.50	49.56	*	*
Russia—Other	148	138	*	*	*	81.62	82.33	*	*	*
Iraq	149	139	128	125	129	82.88	82.60	83.95	81.41	70.09
South Sudan	150	117	**	**	**	83.80	69.15	**	**	**
Russia—Eastern Siberia	151	144	*	*	*	85.80	85.91	*	*	*
Uzbekistan	152	141	130	122	110	89.22	84.97	88.37	78.37	56.91
Russia—Offshore Arctic	153	136	*	*	*	90.74	80.94	*	*	*
Bolivia	154	147	133	133	143	95.80	100.00	96.18	100.00	100.00
Iran	155	145	132	129	127	97.17	88.44	92.50	87.93	69.29
Ecuador	156	142	134	127	140	97.97	85.34	96.27	85.59	87.80
Venezuela	157	146	135	132	141	100.00	97.09	100.00	97.18	91.86
Austria	N/A	N/A	23	5	4	N/A	N/A	22.06	10.35	9.81
CA—Ontario	N/A	N/A	25	28	60	N/A	N/A	22.57	21.22	33.30
Sudan	**	**	116	120	139	**	**	71.96	76.23	82.64
Russia	*	*	126	131	138	*	*	81.24	91.45	78.69
Argentina	*	*	*	117	131	*	*	*	71.07	71.51
Brazil	*	*	*	80	89	*	*	*	45.58	45.43

\*Broken down into regions.

\*\*Sudan became two countries: South Sudan was ranked but not Sudan.

\*\*\* Responses below the 10 threshold but higher than 5.

# Figure 4: Policy Perception Index



Argentina—Santa Cruz also improved its score and moved up to the 131<sup>st</sup> least attractive jurisdiction (of 157) in 2013 compared with 140<sup>th</sup> (of 147) in 2012.

Figure 4 presents the Policy Perception Index rankings for the 157 jurisdictions ranked this year.

Respondents ranked the following 10 jurisdictions as the most attractive for investment in petroleum exploration and development:

1. Oklahoma
2. Mississippi
3. Saskatchewan
4. Texas
5. Arkansas
6. Kansas
7. Alabama
8. North Dakota
9. Manitoba
10. Netherlands—North Sea

Six of these jurisdictions—Oklahoma, Mississippi, Texas, Kansas, North Dakota, and Manitoba—also ranked among the top 10 jurisdictions worldwide in 2012. Of those six, all but Manitoba were also among the top 10 in 2011 along with Alabama and the Netherlands—North Sea. Alabama was not ranked in 2012<sup>5</sup> and the Netherlands—North Sea dropped to 12<sup>th</sup> (of 147) in 2012.

Oklahoma and Mississippi rank first and second, respectively, this year, unchanged from their 2012 standings. Saskatchewan has moved into the top 10 to 3<sup>rd</sup> (of 157) from 13<sup>th</sup> (of 147) in 2012. Texas dropped one spot to 4<sup>th</sup> from 3<sup>rd</sup> in 2012 while Arkansas moved to 5<sup>th</sup> after failing to rank in 2012 due to insufficient data. Kansas moved up to 6<sup>th</sup> (of 157) from 8<sup>th</sup> (of 147) in 2012 while Alabama ranked 7<sup>th</sup> after failing to rank in 2012. North Dakota and Manitoba each dropped four spots in this year's survey to rank 8<sup>th</sup> and 9<sup>th</sup> (of 157) respectively. Finally the Netherlands—North Sea moved up to 10<sup>th</sup> in 2012 after dropping out of the top 10 to 12<sup>th</sup> (of 147) in the 2012 survey. Displaced from the top 10 this year were the Netherlands (to 11<sup>th</sup> of 157), Denmark (to 13<sup>th</sup>), and West Virginia (to 22<sup>nd</sup>). New Mexico dropped significantly in this year's ranking, to 36<sup>th</sup> place (of 157) from 7<sup>th</sup> (of 147) in 2012.

Chile, Namibia, Bahrain, Jordan, Brunei, Thailand, Albania, South Africa, New Brunswick, Mali, Ivory Coast, and Pakistan, all scored much lower Policy Perception Index scores this year (by at least 11 points) and therefore achieved significantly improved rankings. The improvements in scores were most remarkable in the case of Jordan (-24.26), Mali (-23.33), Chile (-22.88), Pakistan

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5 Alabama was not ranked in 2012 due to insufficient data.

(-21.18), South Africa (-18.13), and Brunei (-16.76). Improved scores enabled each of these jurisdictions to move up considerably in the rankings, indicating that survey respondents now regard them as more favorable for upstream petroleum investment than in 2012. For example, Jordan now ranks as the 45<sup>th</sup> (of 157) most attractive jurisdiction worldwide compared with 99<sup>th</sup> place (of 147) in 2012 and Mali is 83<sup>rd</sup> (of 157) compared with 128<sup>th</sup> (of 147) a year ago. The reasons underlying these and other significant improvements are examined in the regional analysis that is presented later in this report.

Respondents also awarded higher (i.e., less favorable) overall scores to a number of jurisdictions this year, indicating that barriers to investment there appear to have increased since the 2012 survey was undertaken. Deterioration (i.e., higher values) of 15 points or more in the scores this year compared with 2012 occurred in New Mexico, Michigan, Colorado, Cyprus, Hungary, Guyana, France, Romania, California, Bulgaria, New York, Guatemala, Quebec, and Kyrgyzstan. Obstacles to investment are indicated to have increased the most in Colorado (+25.17), Hungary (+25.04), Guatemala (+23.90), Cyprus (+23.79), California (+23.22), Bulgaria (+20.75), and New York (+20.13).

Map 1 (see Appendix 2) illustrates the relative attractiveness of jurisdictions around the globe for investment based on scores from the Policy Perception Index. Readers are reminded again that these rankings are driven purely by responses to the survey questions and do not account for the extent of the jurisdictions' proved oil and gas reserves, which will be discussed later. The scores, from 0 to 100, have been divided into five equal ranges (quintiles). Those in the 0 to 19.99 range (first quintile) are rated as most attractive for investment while jurisdictions with scores ranging from 80.0 to 100 (fifth quintile) are the least attractive.

### **First quintile**

Only the top 10 jurisdictions previously mentioned have scores in the top range (first quintile, light blue) in 2013. These are:

- Oklahoma
- Mississippi
- Saskatchewan
- Texas
- Arkansas
- Kansas
- Alabama
- North Dakota
- Manitoba
- Netherlands—North Sea

This compares with 19 jurisdictions with first quintile scores in 2012 and 15 in 2011. All of the jurisdictions in the first quintile this year also scored in the first quintile in 2012, with the exception of Arkansas and Alabama which were not ranked in 2012 due to insufficient data. The Netherlands, Faroe Islands, Denmark, Louisiana, Wyoming, West Virginia, Norway—North Sea, Ohio, Ireland, and New Mexico slipped from the first quintile in 2012 to the second quintile in 2013. Colorado, which also scored in the first quintile in 2012, has dropped to the third quintile.

US jurisdictions account for 7 of the 10 jurisdictions with first quintile scores this year. Two jurisdictions (Saskatchewan and Manitoba) are in Canada. The only other jurisdiction in the top 10 grouping is the Netherlands.

## Second quintile

The 50 jurisdictions with scores from 20 to 39.99 (second quintile) according to the Policy Perception Index are identified in dark blue in Map 1. This compares with 48 second quintile jurisdictions in 2012. Geographically, this year this group is concentrated in North America (with 10 US and 5 Canadian jurisdictions), Europe (13 countries), and Oceania (New Zealand, Brunei, and 6 Australian jurisdictions). Seven jurisdictions in the second quintile are in the Middle East North Africa region and three are in the rest of Africa. Asia and Latin America are each represented in the second quintile by 2 jurisdictions.

All of the jurisdictions with scores in the second quintile are listed below in the order of their rank (i.e., best to worst score). Due to their improved (lower) scores, the nine jurisdictions marked with an up arrow (↗) moved up into the second quintile this year from the third quintile in 2012. Botswana, Seychelles, and Illinois were not evaluated in 2012. Ten jurisdictions fell from the first quintile in 2012 to the second quintile in 2013 (see previous section) and the remaining 28 jurisdictions in the second quintile group were also in this group in 2012.

Netherlands  
Faroe Islands  
Denmark  
Louisiana  
Wyoming  
United Kingdom—North Sea  
Botswana  
Qatar  
Alberta  
Norway  
Montana  
West Virginia  
United Kingdom  
Newfoundland & Labrador



United Arab Emirates  
Chile ↗  
South Australia  
Norway—North Sea  
Ohio  
Nova Scotia  
Oman  
Utah  
Northern Territory  
New Zealand  
Ireland  
New Mexico  
Seychelles  
Namibia ↗  
Yukon  
Illinois  
US Offshore—Gulf of Mexico  
Georgia  
Malta  
Bahrain ↗  
Jordan ↗  
Poland  
British Columbia  
Turkey ↗  
Western Australia  
Brunei ↗  
Morocco  
Tasmania  
Trinidad and Tobago ↗  
Australia—Offshore  
Germany  
Victoria  
Japan  
Pennsylvania  
Thailand ↗  
Kuwait ↗

## Third quintile

Investors generally perceive jurisdictions with Policy Perception Index scores from 40 to 59.99 (i.e., in the third quintile) as somewhat less attractive than those with scores in the first and second quintiles. The 47 jurisdictions that achieved third quintile scores this year, colored green on Map 1 (up from 40 in 2012) are listed below in order of their rank (best to worst).

One reason for the increased number of jurisdictions falling in the third quintile this year is that four of those listed (Spain—Offshore, Spain—Onshore, Suriname, US Offshore—Pacific) were not evaluated in 2012. Of the 43 jurisdictions with scores in the third quintile range this year that were also evaluated in 2012, Colorado dropped into the third quintile this year from a first quintile performance a year ago. Thirteen jurisdictions, marked with a down arrow (▼) below, dropped into the third quintile in 2013 from the second quintile in 2012. In addition to Colorado, the deterioration was particularly severe in Hungary, Cyprus, and California. The index scores for each of these four jurisdictions increased (i.e. worsened) by at least 23 points (see table 1). Seven jurisdictions marked with an up arrow (▲) registered third quintile performances this year compared with only fourth quintile ratings in 2012. In the case of Mali, Pakistan, and South Africa, the improvement resulted from reductions in their index scores of 18 or more points. The remaining 22 jurisdictions scored in the third quintile both this year and in 2012.

Northwest Territories ▼  
Michigan ▼  
Uruguay  
Spain—Offshore  
Spain—Onshore  
Colorado  
Albania  
Malaysia  
Queensland ▼  
Israel ▼  
South Africa ▲  
Philippines  
Colombia  
Ghana  
US Offshore—Alaska ▼  
Cyprus ▼  
Mauritania  
Tunisia ▼  
Alaska  
Hungary ▼  
New Brunswick ▲

Greenland ⚓  
 Mali ↗  
 New South Wales  
 Ivory Coast ↗  
 Cameroon  
 Suriname  
 Lebanon  
 Tanzania  
 Guyana ⚓  
 Mozambique  
 Pakistan ↗  
 Azerbaijan  
 Italy  
 Kenya  
 France ⚓  
 Romania ⚓  
 California ⚓  
 Vietnam  
 US Offshore—Pacific  
 China ↗  
 Gabon  
 Ethiopia  
 Equatorial Guinea ↗  
 Brazil—Onshore concession contracts  
 Peru  
 Brazil—Offshore concession contracts

#### Fourth quintile

Jurisdictions with Policy Perception Index scores from 60 to 79.99 (i.e., the fourth quintile) all received relatively high percentages of negative scores. This indicates that investors regard them as less attractive than jurisdictions with lower scores, i.e., those in the first, second, or third quintiles. Thirty-eight jurisdictions have scores in the fourth quintile this year compared with 35 in 2012. They are colored orange on Map 1.

The fourth quintile jurisdictions are listed below in the order of their respective ranks. French Guiana was not evaluated in 2012. The nine jurisdictions that slipped into the fourth quintile this year from the third quintile last year are flagged with a down arrow (⚓). Of these, the deterioration was especially severe in the case of Guatemala, Bulgaria, and New York, whose scores worsened (i.e.,

increased) by more than 20 points. Argentina—Santa Cruz, Nigeria, and Libya achieved improved scores this year—moving into the fourth quintile from the fifth.

The 25 jurisdictions in the fourth quintile that are neither flagged nor mentioned above were also in this quintile in 2012.

Angola  
French Guiana  
Niger 🚩  
Timor Gap (JPDA) 🚩  
Madagascar  
East Timor  
Bulgaria 🚩  
Brazil—Offshore pre-salt area profit sharing contracts 🚩  
Greece 🚩  
Egypt  
Uganda 🚩  
New York 🚩  
Yemen  
Republic of the Congo (Brazzaville)  
Democratic Republic of the Congo (Kinshasa)  
Turkmenistan 🚩  
India  
Papua New Guinea  
Algeria  
Myanmar  
Guatemala 🚩  
Argentina—Neuquen  
Cambodia  
Argentina—Santa Cruz  
Indonesia  
Chad  
Argentina—Chubut  
Nigeria  
Argentina—Mendoza  
Argentina—Tierra del Fuego  
Somaliland  
Kazakhstan  
Russia—Offshore Sakhalin  
Quebec

Bangladesh  
Syria  
Ukraine  
Libya

### **Fifth quintile**

The fifth quintile (shown on Map 1 in red) is reserved for jurisdictions rated as the least attractive to investors. Their scores range from 80 to 100. This year, as in 2012, there are 12 jurisdictions in this category, which indicates their relative unattractiveness for upstream investment. In order of their rankings, these are:

Kyrgyzstan  
Argentina—Salta  
Russia—Other  
Iraq  
South Sudan  
Russia—Eastern Siberia  
Uzbekistan  
Russia—Offshore Arctic  
Bolivia  
Iran  
Ecuador  
Venezuela

All of these countries were in the fifth quintile in 2012 with the exception of Kyrgyzstan, Argentina—Salta and South Sudan, which dropped into the fifth quintile this year after achieving fourth quintile scores in 2012. Kyrgyzstan's change was most significant, with its index score rising (i.e., worsening) by 16.4 points. Three (of the four) Russian regions are in the fifth quintile again this year: Russia—Other, Russia—Eastern Siberia, and Russia—Offshore Arctic. Three fifth-quintile scorers last year (Argentina—Santa Cruz, Nigeria, and Libya) scored better and moved up to the somewhat less unattractive fourth quintile this year.

### **Policy Perception Index rankings segmented according to jurisdictions' proved reserves**

Ranking the attractiveness of jurisdictions for investment according to their commercial environment, regulatory climate, political risk, and other factors (e.g. security of personnel and equipment, and quality of infrastructure and data) as we have been doing since the survey was initiated in 2007 has proven useful. However, this approach ignores the fact that decisions to invest in petroleum exploration and development are always conditioned by the extent of a jurisdiction's

petroleum resources. While jurisdictions with relatively small proved oil and gas reserves (and generally, relatively little petroleum production), such as Manitoba and Mississippi, may achieve high Policy Perception Index scores and rankings, they cannot be expected to attract nearly as much investment as jurisdictions with similar attributes according to that measure, but with much larger petroleum reserves (e.g. Qatar, Alberta, and the United Arab Emirates). Therefore, in this section, we assess how jurisdictions in each of 3 proved reserves classifications or “tiers,” compare on the Policy Perception index measure. The combination of a high ranking on the Policy Perception Index with extensive proved oil and gas reserves provides a strong indication that a jurisdiction will have considerable appeal to upstream investors.

Proved (sometimes referred to as “proven”) reserves are discovered oil or gas resources which, on the basis of test wells, are believed to be feasible for commercialization, assuming current oil and gas prices and using already available transportation infrastructure such as pipelines. By ignoring discovered resources not yet proven to constitute “reserves,” this approach penalizes jurisdictions such as Brazil’s offshore pre-salt region whose known but unproven resources are thought to have enormous potential. It also gives no recognition to jurisdictions believed to hold significant yet-to-be discovered oil and gas resources such as Alaska—US Offshore, Russia—Offshore Arctic, Kenya, and Greenland. In spite of these shortcomings, we were limited to working with proved reserves because data were available on this basis for nearly all of the jurisdictions included in our survey.<sup>6</sup>

The Tier One classification encompasses 27 jurisdictions which, in each case, hold at least 1 percent (when rounded) of the proved reserves held by 138 of the 157 jurisdictions included in the survey which have proved oil and/or gas reserves.<sup>7</sup> The proved reserves held by these jurisdictions range from 13.9 billion barrels of oil equivalent (Bboe) in India to 369.6 Bboe in Iran, and constitute 92.1 percent of the proved reserves of the group of 138 jurisdictions.

Table 2 indicates the Policy Perception Index scores and rankings and proved reserves for each of the Tier One jurisdictions.

The top seven large reserve holders according to the Policy Perception Index are Texas, Qatar, Alberta, United Arab Emirates, Norway—North Sea, Australia—Offshore, and Kuwait. Of these, only Texas ranks in the most favourable first quintile; the 6 others achieved slightly less attractive second quintile scores this year. The six least attractive large reserve holders are Venezuela, Iran, Russia—Offshore Arctic, Russia—East Siberia, Iraq, and Russia—Other, all with least attractive fifth quintile scores and, as a group, comprising almost 46 percent of total proved reserves. If that

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6 The data sources that we used for proved reserves are provided in Appendix 1.

7 The 19 jurisdictions excluded because they have no proved reserves are: Botswana, Brazil—Offshore Profit Sharing Contracts, Cambodia, Cyprus, Faroe Islands, French Guiana, Greenland, Guyana, Kenya, Lebanon, Mali, Malta, New South Wales, Niger, Quebec, Seychelles, Tasmania, East Timor, and Uruguay.

sub-group were enlarged to encompass the next 3 least attractive jurisdictions according to the Policy Perception Index (i.e., the 3 worst fourth quintile performers this year: Libya, Russia—Offshore Sakhalin, and Kazakhstan) it would represent more than half of the world’s proved oil and gas reserves.

The 41 Tier Two jurisdictions each have at least 0.1 percent of the proved reserves of the group of 138 reserve holders. The reserves of these jurisdictions range from Chad’s 1.5 Bboe to Oman’s 11.8 Bboe. As a whole, the Tier Two jurisdictions hold 6.8 percent of total proved reserves.

**Table 2: Tier One Comparisons**

	<b>Tier One</b>	<b>Policy Perception Index score</b>	<b>Proved Reserves (bboe)</b>
1	Texas	11.71	24.529
2	Qatar	24.16	189.996
3	Alberta	24.47	177.020
4	United Arab Emirates	26.49	138.002
5	Norway—North Sea	27.06	14.220
6	Australia—Offshore	37.65	28.029
7	Kuwait	39.56	113.275
8	Malaysia	43.55	21.932
9	Azerbaijan	53.93	15.386
10	China	57.23	34.842
11	Brazil—Offshore CC	59.71	16.609
12	Angola	60.14	15.550
13	Egypt	62.62	18.747
14	Turkmenistan	70.23	161.110
15	India	70.41	13.890
16	Algeria	71.04	41.936
17	Indonesia	74.36	23.608
18	Nigeria	75.75	70.928
19	Kazakhstan	76.73	42.410
20	Russia—Offshore Sakhalin	76.75	23.725
21	Libya	79.98	56.967
22	Russia—Other	81.62	204.753
23	Iraq	82.88	166.780
24	Russia—East Siberia	85.80	18.789
25	Russia—Offshore Arctic	90.74	135.091
26	Iran	97.17	369.581
27	Venezuela	100.00	332.981

**Table 3: Tier Two Comparisons**

	<b>Tier Two</b>	<b>Policy Perception Index score</b>	<b>Proved Reserves (bboe)</b>
1	Oklahoma	9.84	6.086
2	Arkansas	12.34	2.714
3	North Dakota	15.92	2.634
4	Netherlands	21.68	6.530
5	Louisiana	22.57	6.150
6	Wyoming	22.63	7.599
7	United Kingdom—North Sea	23.47	3.030
8	Norway	25.18	6.327
9	Oman	27.84	11.761
10	Utah	28.09	1.948
11	New Mexico	30.36	4.028
12	US Offshore—Gulf of Mexico	33.07	7.419
13	Bahrain	34.51	2.424
14	British Columbia	35.55	3.774
15	Brunei	35.81	3.006
16	Trinidad & Tobago	37.45	3.478
17	Pennsylvania	39.13	2.663
18	Thailand	39.14	2.292
19	Colorado	42.02	5.145
20	Colombia	47.65	3.072
21	Alaska	49.70	6.213
22	Pakistan	53.26	5.453
23	Italy	54.17	1.958
24	California	55.70	4.111
25	Vietnam	56.13	8.474
26	Gabon	57.85	3.871
27	Equatorial Guinea	58.74	1.948
28	Brazil—Onshore CC	59.02	1.431
29	Peru	59.22	3.569
30	Yemen	64.42	5.829
31	Rep. of Congo (Brazzaville)	66.41	2.538
32	Papua New Guinea	70.62	3.004
33	Myanmar	71.18	1.508
34	Chad	74.96	1.500
35	Bangladesh	78.23	2.616
36	Syria	78.53	4.388
37	Ukraine	79.27	6.568
38	South Sudan	83.80	5.441
39	Uzbekistan	89.22	11.154
40	Bolivia	95.80	2.315
41	Ecuador	97.97	6.211



Policy Perception Index scores and rankings and proved reserves for each of the Tier Two proved-reserves-level jurisdictions are indicated in table 3. The 3 most attractive jurisdictions, all with first quintile scores on the Policy Perception Index measure, are Oklahoma, Arkansas, and North Dakota. These are followed by 7 jurisdictions with low second quintile scores: Netherlands, Louisiana, Wyoming, United Kingdom—North Sea; Norway, Oman, and Utah. The 3 largest reserves holders of the ten most attractive Tier Two jurisdictions are Oman (11.8 Bboe), Wyoming

**Table 4: Tier Three Comparisons**

	<b>Tier Three</b>	<b>Policy Perception Index score</b>	<b>Proved Reserves (bboe)</b>
1	Mississippi	11.19	0.473
2	Saskatchewan	11.43	0.965
3	Kansas	12.64	1.061
4	Alabama	15.34	0.567
5	Manitoba	16.87	0.034
6	Netherlands—North Sea	18.66	1.051
7	Denmark	22.46	1.121
8	Montana	25.89	0.631
9	West Virginia	25.91	1.340
10	United Kingdom	26.40	1.102
11	Newfoundland & Labrador	26.43	0.864
12	Chile	26.63	0.797
13	South Australia	26.91	0.222
14	Ohio	27.35	0.223
15	Nova Scotia	27.52	0.032
16	Northern Territory	29.25	0.070
17	New Zealand	29.60	0.295
18	Ireland	29.60	0.065
19	Namibia	31.31	0.411
20	Yukon	31.99	0.021
21	Illinois	32.51	0.082
22	Georgia	33.40	0.106
23	Jordan	34.60	0.041
24	Poland	35.03	0.900
25	Turkey	35.63	0.311
26	Western Australia	35.70	0.113
27	Morocco	36.18	0.011
28	Germany	38.07	0.687
29	Victoria	38.74	0.032
30	Japan	39.05	0.182
31	Northwest Territories	40.84	0.129

*continued next page ...*

**Table 4: Tier Three Comparisons**

	<b>Tier Three</b>	<b>Policy Perception Index score</b>	<b>Proved Reserves (bboe)</b>
32	Michigan	41.03	0.616
33	Spain—Offshore	41.52	0.003
34	Spain—Onshore	41.85	0.148
35	Albania	43.41	0.205
36	Queensland	45.07	0.225
37	Israel	45.33	1.310
38	South Africa	45.62	0.337
39	Philippines	47.15	0.789
40	Ghana	47.88	0.810
41	US Offshore—Alaska	48.11	0.023
42	Mauritania	48.55	0.287
43	Tunisia	49.35	0.855
44	Hungary	49.83	0.080
45	New Brunswick	49.94	0.020
46	Ivory Coast	50.99	0.287
47	Cameroon	51.66	1.092
48	Suriname	51.94	0.072
49	Tanzania	52.32	0.043
50	Mozambique	52.71	0.841
51	France	55.26	0.128
52	Romania	55.34	1.310
53	US Offshore—Pacific	56.20	0.582
54	Ethiopia	58.74	0.164
55	Australia—Timor Gap JPDA	61.09	0.509
56	Madagascar	61.14	0.187
57	Bulgaria	61.68	0.052
58	Greece	61.99	0.017
59	Uganda	64.06	1.000
60	New York	64.20	0.071
61	Democratic Republic of the Congo (Kinshasa)	69.32	0.245
62	Guatemala	73.48	0.270
63	Argentina—Neuquen	73.76	1.109
64	Argentina—Santa Cruz	74.02	0.771
65	Argentina—Chubut	75.62	1.318
66	Argentina—Mendoza	75.88	0.375
67	Argentina—Tierra del Fuego	76.29	0.256
68	Somaliland	76.56	0.037
69	Kyrgyzstan	80.60	0.077
70	Argentina—Salta	81.08	0.244

(7.6 Bboe), and Netherlands (6.5 Bboe). The proved reserves of all 10 of the most attractive jurisdictions in this group are 54.8 Bboe. This represents just 2.0 percent of the world's proved reserves.

The four least attractive Tier Two jurisdictions are Ecuador, Bolivia, Uzbekistan, and South Sudan, all with fifth quintile Policy Perception index scores. The 6 next worst jurisdictions in this tier, as indicated by their poor fourth quintile scores, are the Ukraine, Syria, Bangladesh, Chad, Myanmar, and Papua New Guinea. Combined, the 10 least attractive Tier Two jurisdictions have proved reserves of 44.7 Bboe or about 1.7 percent of the world total.

Policy Perception Index scores and rankings and proved reserves for each of the 70 Tier Three low-proved-reserves jurisdictions are indicated in table 4. These jurisdictions each have up to 0.1 percent of the proved reserves held by the 138 jurisdictions, ranging from almost negligible holdings in the case of Spain—Offshore to West Virginia's 1.34 Bboe, and, altogether, 1.1 percent of total proved reserves.

The six most attractive of the Tier Three jurisdictions, all with first quintile Policy Perception Index scores, are Mississippi, Saskatchewan, Kansas, Alabama, Manitoba, and the Netherlands—North Sea. They are followed by 12 jurisdictions with low second quintile scores: Denmark, Montana, West Virginia, United Kingdom, Newfoundland & Labrador, Chile, South Australia, Ohio, Nova Scotia, Australian Northern Territory, New Zealand, and Ireland.

The least attractive jurisdictions among this group of low-proved-reserve holders are Argentina—Salta and Kyrgyzstan, both with fifth quintile scores, and 7 jurisdictions with the worst (i.e., upper half) fourth quintile scores: the 5 other Argentine provinces that were included in the survey, Somaliland, and Guatemala.

## Commercial Environment Index findings

Figure 5 ranks jurisdictions based on the five commercial environment index factors: fiscal terms, taxation in general, trade barriers, quality of infrastructure, and labor availability and skills.

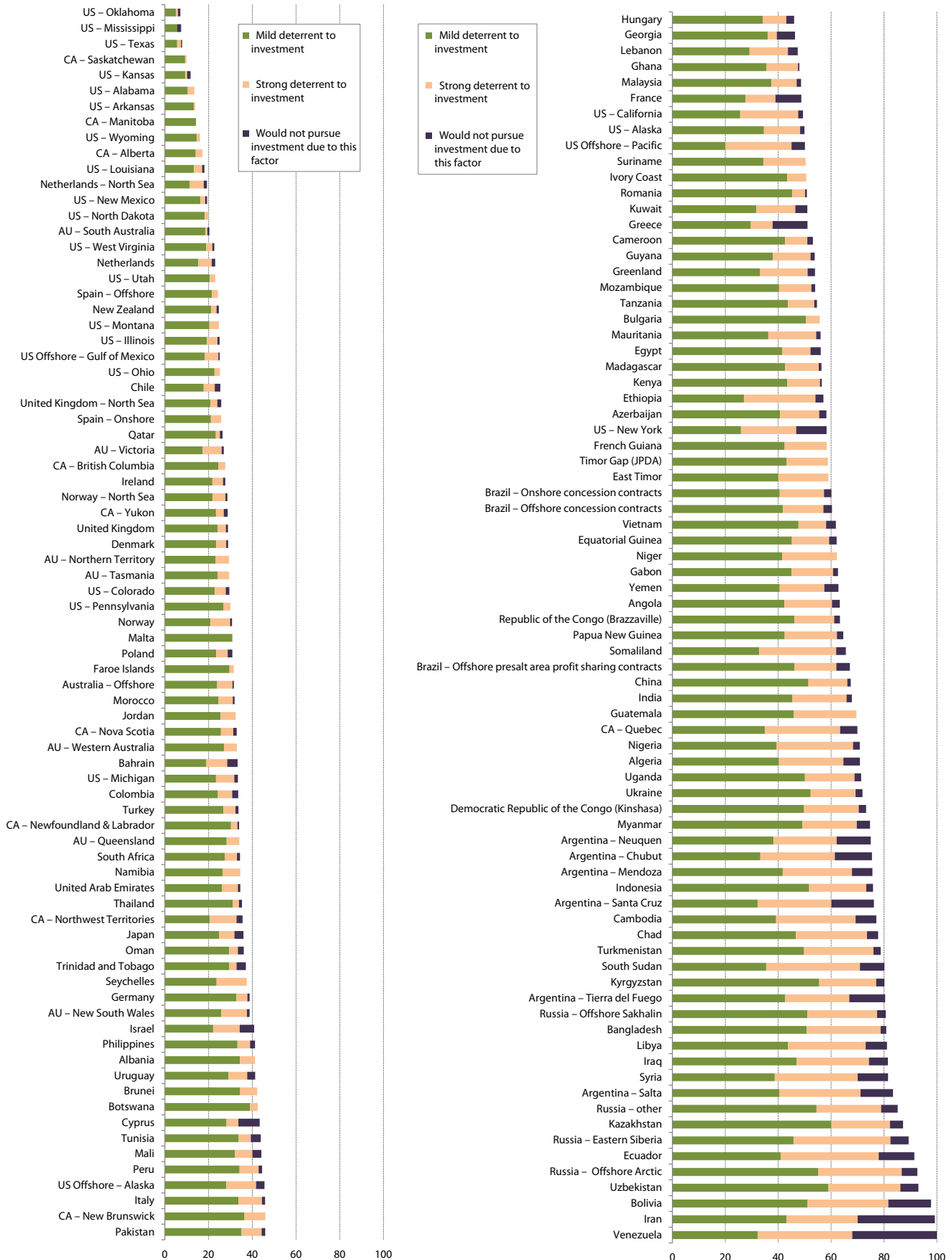
Based solely on the responses to these 5 factors, the 10 least attractive jurisdictions are Venezuela, Iran, Bolivia, Uzbekistan, Russia—Offshore Arctic, Ecuador, Russia—Eastern Siberia, Kazakhstan, Russia—other, and Argentina—Salta.

This year, Russia—Offshore Arctic, Ecuador, and Kazakhstan displaced Libya, Uruguay, Cambodia, and Yemen in this group.<sup>8</sup> Although Libya's score on the commercial environment remained in the undesirable fifth quintile, Cambodia and Yemen each improved to the fourth quintile range. Uruguay improved most notably, moving from the fifth quintile in 2012 to a low (41.3) third quintile score.

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8 Note that, for any jurisdiction, comparison of the 2012 and 2013 values for this Index is affected by the fact that scores on the corruption question were only included in the calculation for 2012.

**Figure 5: Commercial Environment Index**



Oklahoma ranks as the most commercially attractive jurisdiction again this year, followed closely by Mississippi and Texas. Other jurisdictions in the first quintile according to the Commercial Environment Index are Saskatchewan, Kansas, Alabama, Arkansas, Manitoba, Wyoming, Alberta, Louisiana, Netherlands—North Sea, New Mexico, and North Dakota. Canadian and US jurisdictions dominate the first quintile with 10 US states and 3 Canadian provinces in this quintile and only the Netherlands—North Sea from outside of North America.

## Regulatory Climate Index results

The Regulatory Climate Index (figure 6) ranks jurisdictions according to investors' perceptions of the regulatory hurdles that are in place, including regulatory enforcement, regulatory inconsistency and duplication, environmental regulations, labor regulations, fairness and transparency of the legal system, and the cost of regulatory compliance. Poor performance on regulatory issues is a major reason why many jurisdictions are regarded as relatively unattractive for investment.

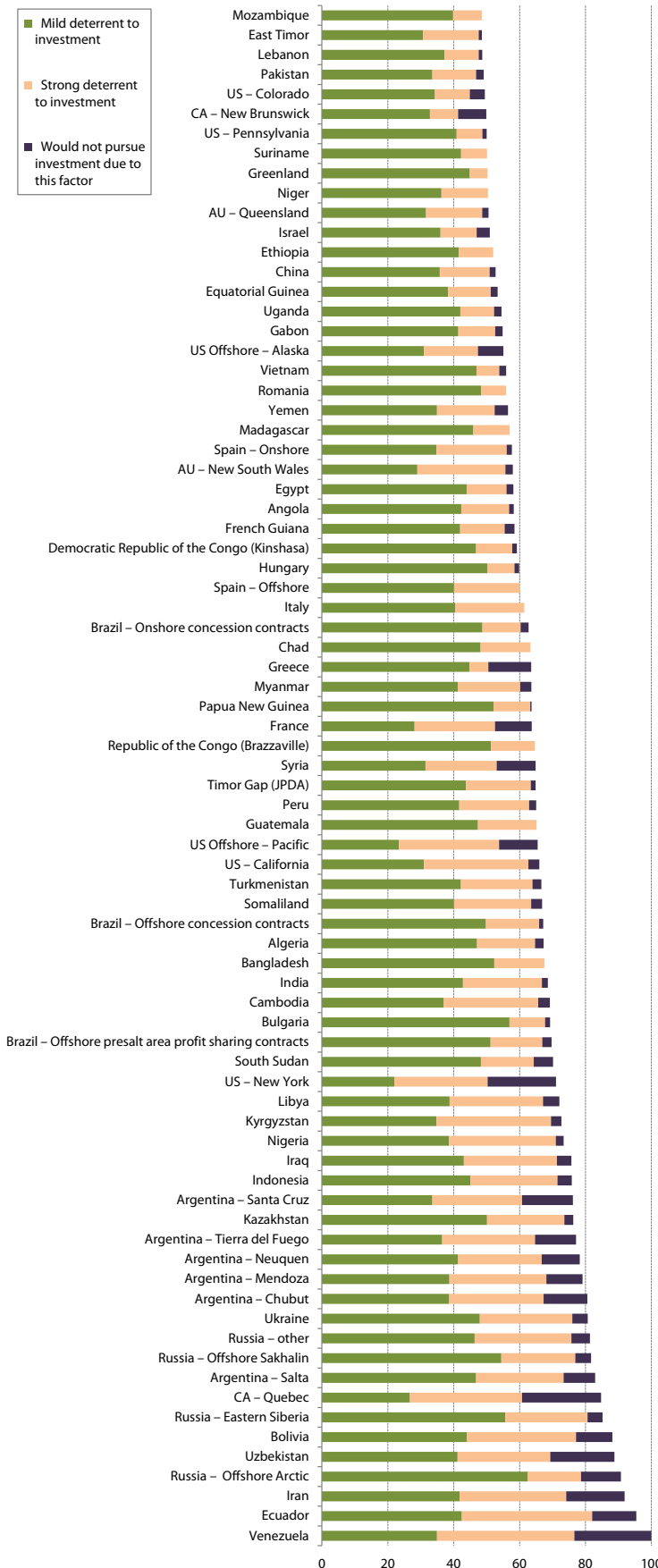
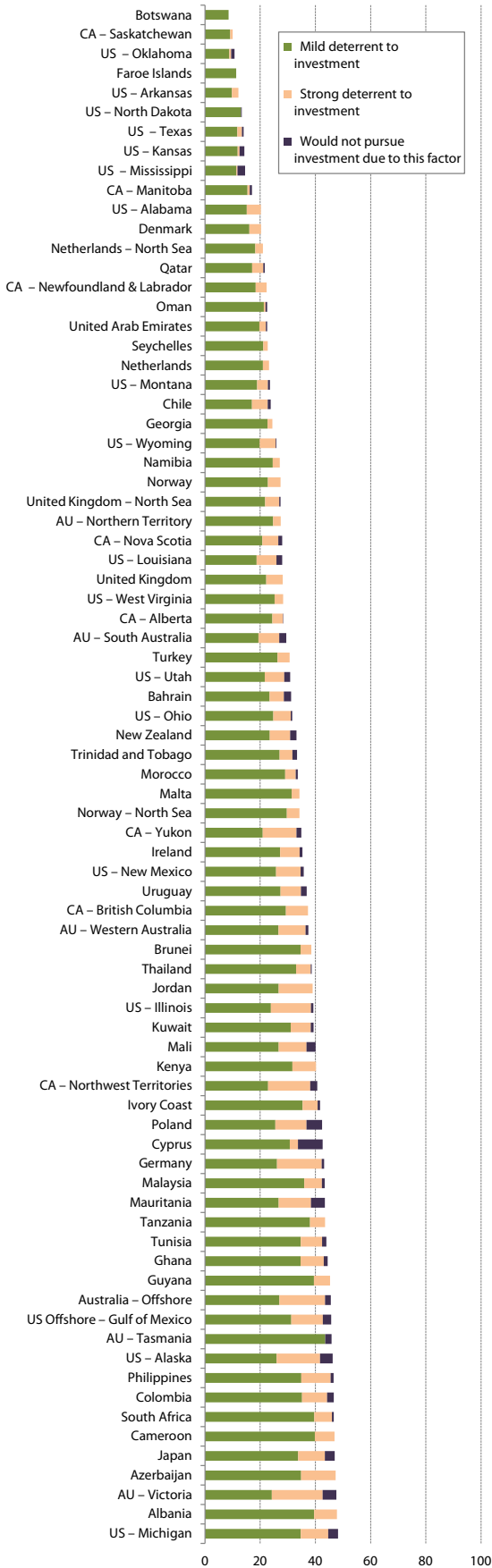
Based on the responses to these factors, the 10 least attractive jurisdictions on the Regulatory Climate Index are Venezuela, Ecuador, Iran, Russia—Offshore Arctic, Uzbekistan, Bolivia, Russia—Eastern Siberia, Quebec, Argentina—Salta, and Russia—Offshore Sakhalin. This group is similar to that reported in the 2012 survey except that Quebec and Argentina—Salta have replaced Argentina—Santa Cruz and Kazakhstan. Both Quebec and Salta dropped from the fourth quintile in 2012 into the bottom 10 according to this measure in 2013. In addition to the 10 worst jurisdictions according to the Regulatory Climate Index, Russia—Other, Ukraine, and Argentina—Chubut were also awarded undesirable fifth quintile ratings with respect to the regulatory climate.

The 10 most attractive jurisdictions on the Regulatory Climate Index this year are Botswana, Saskatchewan, Oklahoma, Faroe Islands, Arkansas, North Dakota, Texas, Kansas, Mississippi, and Manitoba. The most attractive jurisdictions are similar to last year's with the exception of Botswana and Arkansas—which were not included in the 2012 survey—and Faroe Islands which moved up from the second quintile. All 10 most attractive jurisdictions achieved first quintile ratings on the Regulatory Climate Index. No other jurisdictions have first quintile regulatory climate scores. Three jurisdictions that had first quintile ratings on the Regulatory Climate Index in 2012—West Virginia, Denmark, and Ohio—slipped into the second quintile range in 2013.

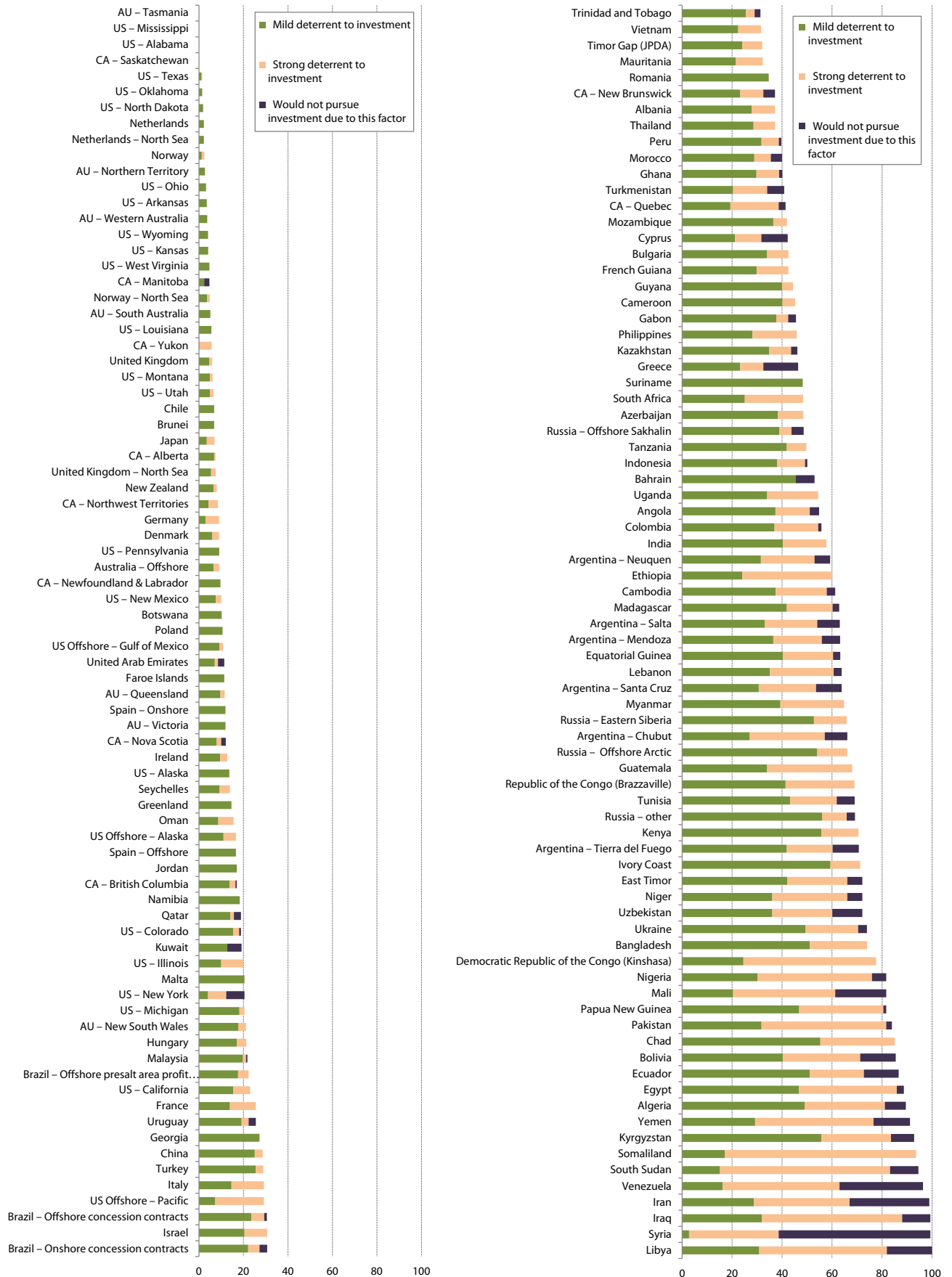
## Geopolitical Risk Index

The Geopolitical Risk Index focuses on political risk and on the security of personnel and physical assets. As figure 7 indicates, 18 jurisdictions (Libya, Syria, Iraq, Iran, Venezuela, South Sudan, Somaliland, Kyrgyzstan, Yemen, Algeria, Egypt, Ecuador, Bolivia, Chad, Pakistan, Papua New Guinea, Mali, and Nigeria) scored in the fifth quintile this year on this measure. This compares with only 10 jurisdictions in the fifth quintile in 2012. The reason for the difference is that 8 of the

# Figure 6: Regulatory Climate Index



**Figure 7: Geopolitical Risk Index**



listed jurisdictions (Iran, Ecuador, Somaliland, Kyrgyzstan, Algeria, Egypt, Ecuador, and Chad) dropped from fourth quintile scores on the Geopolitical Risk Index in 2012 to fifth quintile scores this year. This indicates that upstream investors regard them as posing greater political and/or security risks than a year ago.

A relatively high percentage of the negative responses some jurisdictions received on the political stability and security issue questions indicate that respondents simply “would not pursue investment” in those jurisdictions due to this factor. Those jurisdictions for which the survey responses used in the evaluations contained the largest percentages of this most negative type of response are Syria, Iran, Venezuela, and Mali.

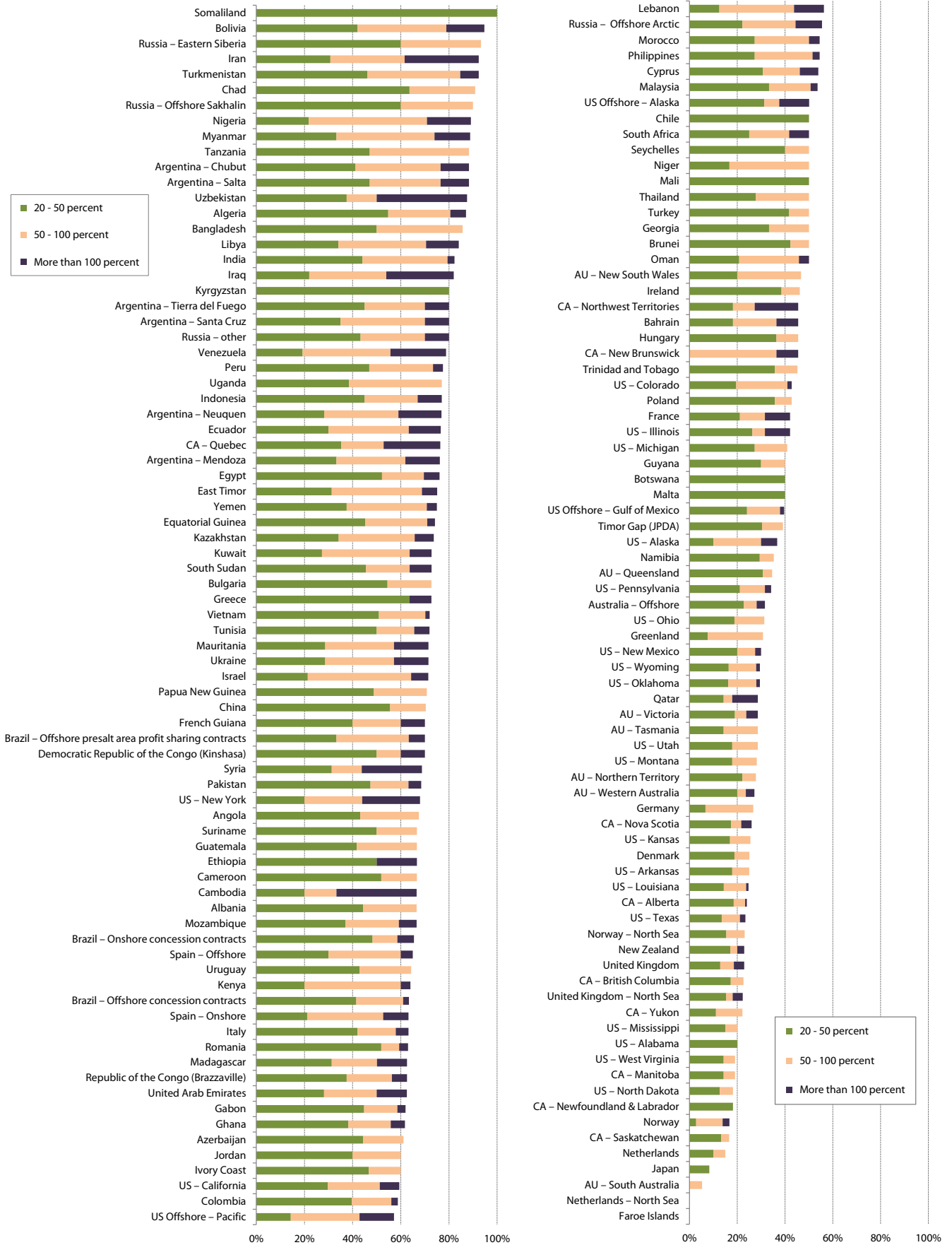
## Potential for improvement

In this year’s survey, respondents were again asked, “How much do you think oil and gas exploration and development in each of the jurisdictions with which you are familiar might increase if a full and complete transition to ‘Best Practices’ in relation to the main drivers of investment decisions—such as royalties, environmental regulations, cost of regulatory compliance, profit repatriation, a fair and transparent legal system, and security of personnel and assets—were to occur?” Respondents were asked to answer to the question for each jurisdiction with which they are familiar by selecting from one of five possible responses: 1) Not at all; 2) Only slightly; 3) 20 to 50 percent; 4) 50 to 100 percent; and 5) More than 100 percent.

The results (figure 8) indicate that a relatively large percentage (20% or more) of respondents believe that exploration and development could increase by more than 100 percent in Uzbekistan, Cambodia, Iran, Iraq, Syria, New York, Quebec, and Venezuela if best practices were adopted. Combining all the responses that indicate that best practices could increase exploration and development by at least 20 percent (i.e., the type 3, 4 and 5 responses) shows that survey respondents believe that activity could potentially be boosted by the greatest percentage in Somaliland, Bolivia, Russia—Eastern Siberia, Iran, Turkmenistan, Chad, Russia—Offshore Sakhalin, Nigeria, Myanmar, Tanzania, Argentina—Salta, Argentina—Chubut, Uzbekistan, Algeria, Bangladesh, Libya, India, and Iraq. Moreover, as figure 10 indicates, the adoption of best practices would likely lead to greater upstream investment in many other jurisdictions as well.



# Figure 8: Transition to Best Practices



## Results by continental region

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### North America

Compared to other regions of the world, many jurisdictions in Canada and the United States are rated as attractive for upstream investment.

#### Canada

Table 5 summarizes this year's shifts in the relative attractiveness of Canadian jurisdictions compared with 2012. Readers are reminded that these rankings are based on the factors in the Policy Perception Index only, and do not factor a jurisdiction's proved oil and gas reserves or its petroleum resource potential. As in 2009, 2010, 2011, and 2012, Manitoba and Saskatchewan are the top 2 Canadian jurisdictions, though they have swapped positions once again. Saskatchewan achieved a slightly lower Policy Perception Index score this year and therefore moved higher in the ranking. However, Manitoba received higher percentages of negative scores overall and slipped a bit on the Policy Perception Index scale.

As figure 9 illustrates, Saskatchewan is again seen as the most attractive Canadian jurisdiction for upstream petroleum investment after having relinquished that position to Manitoba in 2012. At the other end of the scale, Quebec stands out as the Canadian jurisdiction posing the greatest barriers to investment.

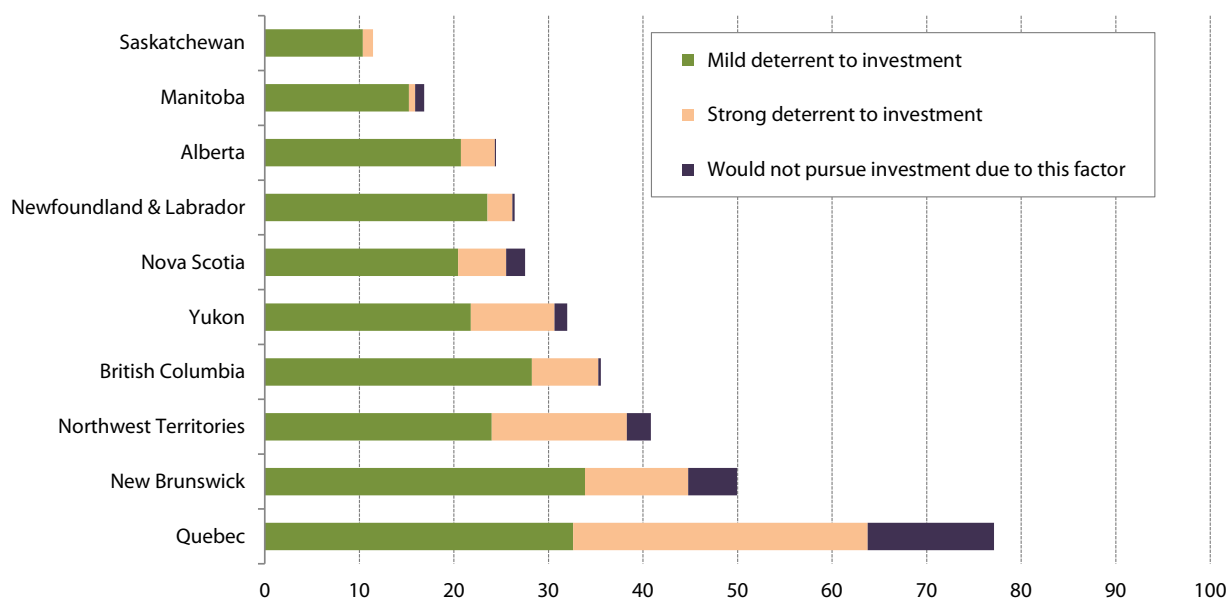
Canada had 10 jurisdictions in the 2013 survey and two, Saskatchewan (ranked 3<sup>rd</sup> of 157) and Manitoba (ranked 9<sup>th</sup>), achieved commendable first quintile rankings. Five provinces (Alberta,

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**Table 5: Rankings of Canadian Jurisdictions for 2013 and their Policy Perception Index Scores**

Rank in 2013	Jurisdiction	Score	Rank in 2012
1	Saskatchewan	11.43	2
2	Manitoba	16.87	1
3	Alberta	24.47	3
4	Newfoundland & Labrador	26.43	6
5	Nova Scotia	27.52	4
6	Yukon	31.99	7
7	British Columbia	35.55	5
8	Northwest Territories	40.84	8
9	New Brunswick	49.94	10
10	Quebec	77.11	9

**Figure 9: Policy Perception Index—Canada**



Newfoundland and Labrador, Nova Scotia, Yukon, and British Columbia) are in the second quintile this year and the Northwest Territories and New Brunswick fall in the third quintile. Only Quebec is now in the fourth quintile.

Quebec has fallen from 101<sup>st</sup> (of 147) in 2012 to 141<sup>st</sup> (of 157) in 2013 suggesting that it is becoming less attractive for upstream petroleum exploration investment. Quebec’s Policy Perception Index score deteriorated from 60.5 to 77.1—the worst performance of all the Canadian jurisdictions—with investment now apparently being deterred even more than in 2012 due to poorer results with regard to the cost of regulatory compliance (38%)<sup>9</sup>; taxation in general (25%); and uncertainty concerning protected areas (23%). British Columbia dropped in the Policy Perception Index ranking from 39<sup>th</sup> (of 147) in 2012 to 47<sup>th</sup> (of 157) this year as a consequence of poorer (i.e., higher) scores on the survey questions pertaining to uncertainty concerning environmental regulations (19%), political stability (12%), and taxation in general (11%).

The Northwest Territories slipped marginally from a high second quintile placement in 2012 (score 39.6) to the third quintile (score 40.8) while also dropping one spot in the rankings to 61<sup>st</sup> (of 157) in 2013. Manitoba fell four spots in the rankings from 5<sup>th</sup> (of 147) in 2012 to 9<sup>th</sup> (of 157) in 2013.

9 The numbers in brackets show the difference between the total percentage of responses which indicate that a particular factor is a deterrent to investment (i.e., the combined responses of types “3. Is a mild deterrent to investment,” “4. Is a strong deterrent to investment,” and “5. Would not pursue exploration investment in this region due to this factor”) from 2012 to 2013.

Alberta achieved a slightly higher ranking this year, moving from 21<sup>st</sup> position (of 147) in 2012 to 19<sup>th</sup> (of 157) in spite of realizing a slightly poorer Policy Perception Index score. Nova Scotia also achieved a higher ranking, moving up five spots to 30<sup>th</sup> (of 157) in 2013, although it too had a slightly poorer overall score. The Canadian jurisdiction that improved the most in the ranking this year was Newfoundland and Labrador which is now 24<sup>th</sup> (of 157) compared with 47<sup>th</sup> (of 147) a year ago as the result of an improved overall scores , most notably with regard to the labour regulations and employment agreements question (-50%).

New Brunswick benefitted from having the most improved Policy Perception Index score amongst the Canadian jurisdictions after dropping significantly in the rankings in 2012 as a consequence of considerable deterioration in its overall score. New Brunswick moved up from the fourth quintile (score 62.1) in 2012, to the third quintile (score 49.9) in 2013 and improved its ranking from 102 (of 147) to 81 (of 157), mainly as the result of improved performance on the regulatory enforcement (-48%), labour regulations (-39%), and trade barriers factors (-30%). However, in spite of these improvements, New Brunswick is next to last in Canada, after Quebec, in terms of its attractiveness for exploration and development investment. In both cases this is probably the result of policies regarding to the potential application of hydraulic fracking to recover natural gas from shale formations, and the manner in which those policies are being administered.

Respondents' comments about various provinces ranged from complimentary to critical. The comments in the following section have been edited for length, grammar, and spelling, to retain confidentiality, and to clarify meanings.

## **Alberta**

“Alberta: Safe and simple language and rules. Hopefully no more royalty reviews. Political uncertainty in BC is a concern.”

“Transparent and coordinated regulatory process. Rule of law.”

“Clear and predictable regulation. Open to new kinds of resources. Risk-taking investors. Geological and technical know-how. Access to markets.”

“Most recently, some rural municipalities in Alberta are realizing a windfall profit through an antiquated Drill and Equipment Tax which is providing excessive revenues. This tax is an impediment to drilling. Furthermore, it is causing an imbalance in government revenues amongst provincial and municipal jurisdictions.”

## **British Columbia**

“Carbon tax in BC is a huge burden on natural gas companies.”

“Political uncertainty in BC is a concern.”

“Regulatory paperwork and timing for approvals continues to get more complicated and cumbersome in Alberta and BC. This may be a necessary burden given environmental concerns/awareness by the general public.”

### Manitoba

“Strong labor force, and excellent government support of industry. Trying to be better than [just] competitive.”

“General mistrust or over control of industry and the threat of unfavorable change.”

### New Brunswick

“Corrupt government officials who are more concerned with re-election rather than supporting and developing an industry.”

“Minister of Natural Resources does not understand the regulations which have been made and interprets them differently for each company.”

### Nova Scotia

“Additional regulation and oversight, local employment requirements on large projects, multiple levels of government involvement.”

### Saskatchewan

“Investment favourable environment. Consistent application of laws and general support by provincial government of oil and gas development.”

“Collaborative approach to setting regulations that involve environmental, industry, and local concerns.”

“Statistical Inventory Reconciliation (SIR) is very effective with landowners and processes to get wells drilled. Regulations have very little time impairment on activities.”

### Quebec

“Government is not supportive of industry; public against development of industry; poor royalty system; very business unfriendly.”

“Expropriations and *de facto* expropriations in Quebec without compensation are particularly discouraging relative to expectations of rule of law.”

“Total uncertainty fueled by inconsistencies in messages given by the government.”

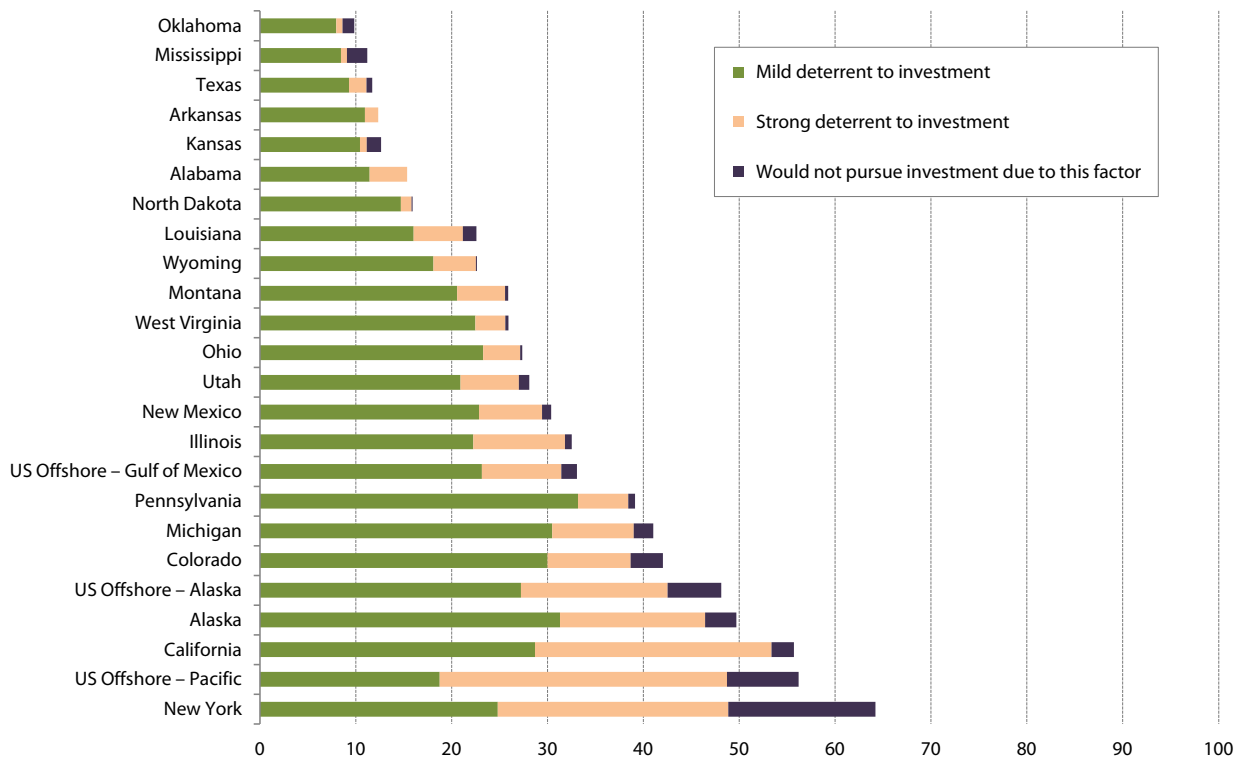
## The United States

Twenty-four US jurisdictions were included in the 2013 survey list and sufficient responses were received to allow us to rank all of them. Arkansas, Alabama, Illinois, and US Offshore—Pacific were included this year’s report after being excluded from the report on the results of the 2012 survey as a consequence of insufficient responses.

Oklahoma is again the most attractive US and global jurisdiction, followed by Mississippi. Five other US jurisdictions are also in the first quintile and among the top 10 most attractive jurisdictions: Texas, Arkansas, Kansas, Alabama, and North Dakota this year (figure 10). With the exception of Arkansas and Alabama, these jurisdictions were all in the first quintile in 2012 as well.

Ten US jurisdictions are in the second quintile. Louisiana, Wyoming, West Virginia, Ohio, and New Mexico all dropped to the second quintile this year from the first quintile, joining Montana, Utah, Illinois, US Offshore—Gulf of Mexico, and Pennsylvania. New Mexico’s attractiveness for investment appears to have worsened considerably as its Policy Perception Index score increased from 11.9 in 2012 to 30.4 and its ranking fell from 7<sup>th</sup> (of 147) to 36<sup>th</sup> (of 157) largely as a result of poorer scores on the questions pertaining to uncertainty concerning protected areas (40%), regulatory enforcement (32%), and disputed land claims (21%).

**Figure 10: Policy Perception Index—United States**



There are six US jurisdictions in the third quintile including Michigan, US Offshore—Alaska, and California, which dropped from the second quintile in 2012 to the third quintile. Michigan’s Policy Perception Index score deteriorated from 24.9 in 2012 to 41.0 this year mainly due to the perception that the regulatory climate has worsened considerably. California also received much poorer grades from survey respondents this year as indicated by an increase in its overall score (from 32.5 to 55.7) largely as the result of deterioration in its commercial environment (particularly fiscal terms and taxation in general). Colorado dropped into the third quintile (score 42.0) from the first quintile (score 16.9) in 2012 reversing 4 years of improved scores on the Policy Perception Index. Colorado’s rank plummeted from 16<sup>th</sup> (of 147) to 66<sup>th</sup> (of 157), the largest drop among the US jurisdictions, largely as a result of increased negative sentiment with regard to uncertainty concerning protected areas (40%), regulatory duplication (37%), and disputed land claims (35%). Alaska and the US Offshore—Pacific also placed in the third quintile.

New York is the only US jurisdiction with a fourth quintile score (64.2) this year, dropping from the third quintile in 2012 (score 44.1). New York ranks 119<sup>th</sup> (of 157) this year, dropping from 68<sup>th</sup> (of 147) in 2012. The deterioration in the state’s attractiveness for investment is largely the consequence of poorer scores in relation to legal system fairness (38%), taxation in general (28%), and regulatory duplication (26%) questions.

Three US jurisdictions (Colorado, California, and New York) saw their Policy Perception Index scores deteriorate (i.e., increase) by more than 20 points this year while six others (New Mexico, Michigan, West Virginia, Gulf of Mexico, Pennsylvania, and US Offshore—Alaska) received overall grades at least 10 points worse than in 2012. None of the US jurisdictions in this year’s survey benefitted from improved Policy Perception Index scores. This suggests that the US as a whole is now regarded as somewhat less attractive for upstream petroleum development than in 2012.

Survey participants’ comments on a number of American jurisdictions are presented below. Comments in have been edited for length, grammar, and spelling, to retain confidentiality, and to clarify meanings.

### **Alaska**

“Tradition of good business productive model combined with optimal labor quality, distribution, and fiscal policy.”

### **Colorado**

“Oil and gas regulatory agency has a majority of officers non-knowledgeable about the industry and economics of same.”

“Constantly changing regulatory environment with a hostile and anti-development bias. Many lower level governmental entities feel the need to control the industry and promulgate their own redundant, ill-informed regulations that inevitably result in great

costs and delays on the industry. “Fractivists” have convinced many cities to ban fracking or attempt to regulate it. State regulatory agencies continuously attempt to apply even tighter restrictions in a constantly changing, although consistently more restrictive, environment that creates uncertainty and risk. Even though I live in Colorado, the company I founded will not do business in this state.”

### **Louisiana**

“Legacy litigation on-shore Louisiana has crippled the industry. The continued denial or failure to process off-shore permits has also crippled the industry in this state.”

### **Mississippi**

“Ease of regulation and low costs to operate with good lease terms.”

“The State Oil & Gas Board of Mississippi is not hostile to exploration and production activity and is proactive in promoting natural resource development while also fulfilling its regulatory role in protecting the environment and conservation of resources. This is consistent with the stated public policy of the state as set out by the legislature.”

### **New Mexico**

“Companies refuse to invest in New Mexico because of uncertain status of the Lesser Prairie Chicken on the endangered list.”

### **New York**

“Strong anti-oil exploration policies and propaganda.”

“New York sits on top of massive reserves that it will not allow the industry to develop.”

### **Pennsylvania**

“State government actively promotes the development of the resource.”

### **Texas**

“Stability, infrastructure, limited tax, fair regulation, knowledgeable regulators, streamlined permitting process, limited federal interference.”

“Proactive approach to oil and gas development is encouraged by local and state authorities.”



“Regulations encourage exploration and production. Long history of exploration and production. Knowledgeable professionals in Railroad Commission. Reasonable expectations of landowners, including the State of Texas.”

“Easy access, large resource base, abundant service company infrastructure, large amounts of capital.”

### **US Offshore—Gulf of Mexico**

“Mature business environment, effective regulations. However, it could improve the environmental overseeing.”

“Stable tax royalty fiscal regime. Toughening but still transparent regulatory environment. No windfall taxes in high commodity price environment. Limited or no commodity marketing restrictions.”

### **West Virginia**

“The city of Morgantown, WV, is shutting down two wells from further development. The two wells were already drilled and were awaiting hydrofracture.”

### **Wyoming**

“Access, clarity of requirements—legal, environmental, etc.”

“Tax Royalty system without state participation and production sharing elements makes it the most compelling for investment.”

## Oceania

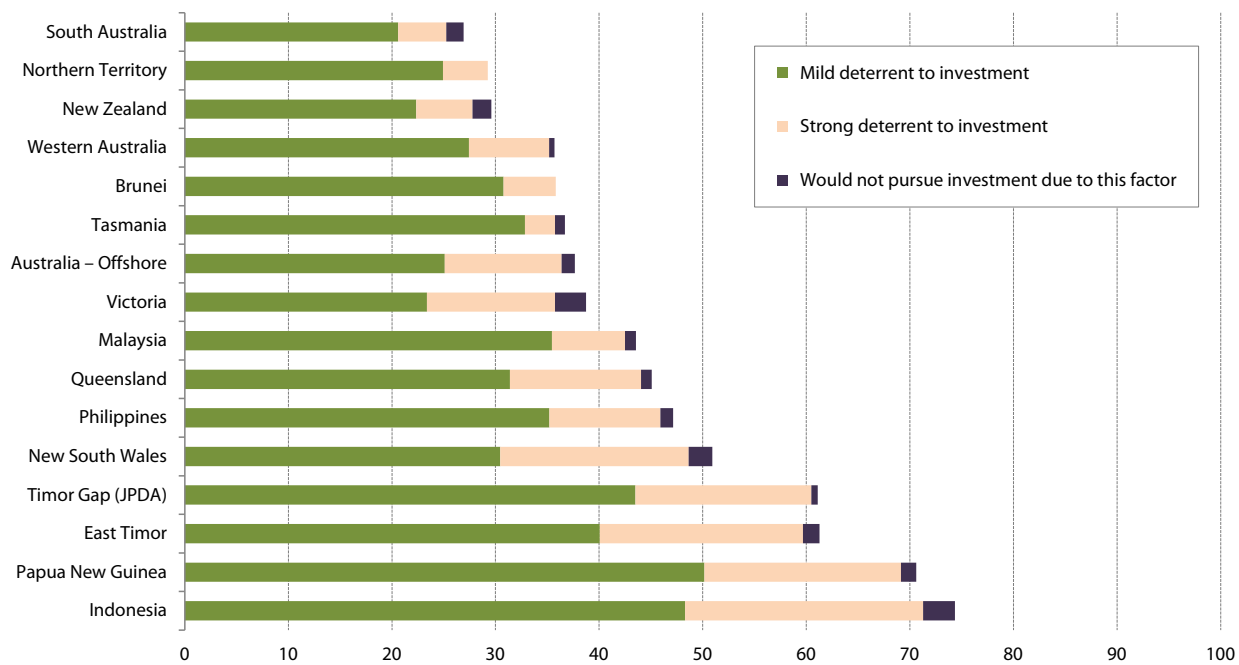
In the survey Oceania is composed of sixteen jurisdictions. These are the six Australian states, the Northern Territory, and the Australian Offshore (both of which fall under Australian federal jurisdiction), the Timor Gap Joint Petroleum Development Area (JPDA), East Timor, New Zealand, Brunei, Malaysia, the Philippines, Papua New Guinea, and Indonesia.

As figure 11 illustrates, the results for this region fall into three distinct categories again this year. Last year's three fourth-quintile countries (Indonesia, Papua New Guinea, and East Timor) were joined this year by the Timor Gap (JPDA) which fell into the fourth quintile after rating in the third quintile in 2012. The Timor Gap (JPDA) saw its ranking fall the most amongst the Oceania jurisdictions, dropping from 73<sup>rd</sup> (of 147) in 2012 to 111<sup>th</sup> (of 157) as greater percentages of negative responses suggest that survey respondents are more concerned with regulatory duplication and inconsistencies (35%), disputed land claims (31%), and political stability (21%) there than a year ago. East Timor improved both in terms of its rank and score as most elements of its commercial environment are seen to be more positive than they were.

There are now four third quintile jurisdictions in the Oceania region: New South Wales, Philippines, Malaysia, and Queensland. The latter dropped into the third quintile range after achieving a second quintile score in 2012.

There are eight jurisdictions in the second quintile this year including the Australian jurisdictions of Victoria, Australia—Offshore, Western Australia, the Northern Territory, South Australia, and

**Figure 11: Policy Perception Index—Oceania**



Tasmania, as well as New Zealand and Brunei. South Australia is the most attractive jurisdiction in this region. Last year's highest ranked jurisdiction in Oceania, New Zealand, saw its Policy Perception Index score and rank deteriorate largely because of increased negative responses for regulatory duplication (25%), labour and skills availability (14%), and the quality of infrastructure (11%). Australia—Offshore also dropped in the rankings this year in part due to a worsening regulatory climate. Brunei improved the most amongst the Oceanian jurisdictions, moving into the second quintile from the third, and up in the rankings from 85<sup>th</sup> (of 147) in 2012 to 50<sup>th</sup> (of 157) in 2013 in part due to lower percentages of respondents now being concerned by the cost of regulatory compliance (-42%), trade barriers (-33%), and disputed land claims (-27%) issues than previously.

Respondents offered both positive and negative comments about conditions in the jurisdictions that we surveyed in the Oceania region. The comments in the following section have been edited for length, grammar, and spelling, to retain confidentiality, and to clarify meanings.

### **Australia in general**

“Favourable fiscal terms, exploration is incentivized, regulations transparent. Ease of access to authorities and technical data.”

“Australian labour costs and unionism are a significant deterrent to working here.”

“Policy in Australia is being driven by green-based, alarmist, anti-fossil fuel groups and the government federally is very scared running into a federal election. This generates great uncertainty for the industry, particularly with a weak state government in New South Wales and is going to drive exploration dollars out of that state and overseas. The eastern Australian economy is going to be starved of gas and industry is going to suffer for this.”

### **Australia—Offshore**

“Transparent, and unambiguous laws and policies, availability of qualified personnel and excellent geological database system.”

### **East Timor**

“Government interference.”

“Fails to honour the wording and intention of agreements.”

“East Timor is increasingly seen as failing to honour treaties and uses media to lobby for its political agenda.”

“East Timor—inability to access onshore licences.”

## Indonesia

“Indonesia which has rich natural resources and it pioneered production sharing contracts early on and later followed by the rest of the world. Government is accessible for problem resolution.”

“Indonesia—high fiscal take and difficulty of doing business.”

“Indonesia: Absurdly detailed regulatory interference and distrust of investors coupled with regional-based approvals from uninformed local power brokers and corrupted officials.”

“Land access becoming problematic, lack of clarity, overlap with other usage.”

## Malaysia and Indonesia

“It’s all relative. Malaysia has a lot of regulations and control of operations by Petronas, but there is a degree of certainty in outcome with the right approach, and the opportunity scope is mixed with different levels of regulation/fiscal terms that try to match with investor appetite. Indonesia, on the other hand, seems determined to continue with uncertain regulations and policies, with nationalization of resources as the ultimate goal.”

## Malaysia

“There is a single national regulator.”

“Clear, transparent, and efficient legal and administrative process to do business.”

## New South Wales

“Erratic and wildly changing regulations governing coalbed methane exploration and development in NSW over the last four years.”

“Inconsistency in its regulations. Several companies have stopped operations in the state, and we are also likely to.”

## New Zealand

“New Zealand is a model regulatory environment. It is predictable, the sanctity of law and contracts is paramount, and legal interpretation gets a day in court.”

“Good terms, open government with no state jurisdictions overlapping the national regime.”

“Opaque decision making in New Zealand Petroleum & Minerals; native title issues never completely sorted; Resource Management Act results in extraordinarily long timelines to any development.”

“New Zealand is unable to facilitate effective oil and gas exploration activities due to an ineffective consent and public comment process.”

### **Philippines**

“The Philippines is a very encouraging place to invest in oil and gas. In spite of its being underexplored, there is a basis to claim that it has huge deposits especially in the off-shore Palawan.”

“Fiscal regime is very favourable while regulatory and labour issues are also quite good.”

### **South Australia**

“Pro-active government (and opposition), stable and attractive fiscal regime, informed and professional regulator, very superior access to essential data.”

“South Australia is becoming well-known for rapid approvals and cutting through green and red tape.”

### **Victoria**

“Victoria government unable to mandate, so put a moratorium on coal seam gas (CSG) exploration and fracking.”

### **Western Australia**

“Native title onshore Western Australia is increasingly painful, caught between state and federal legislation both probably sub optimally conceived and drafted.”

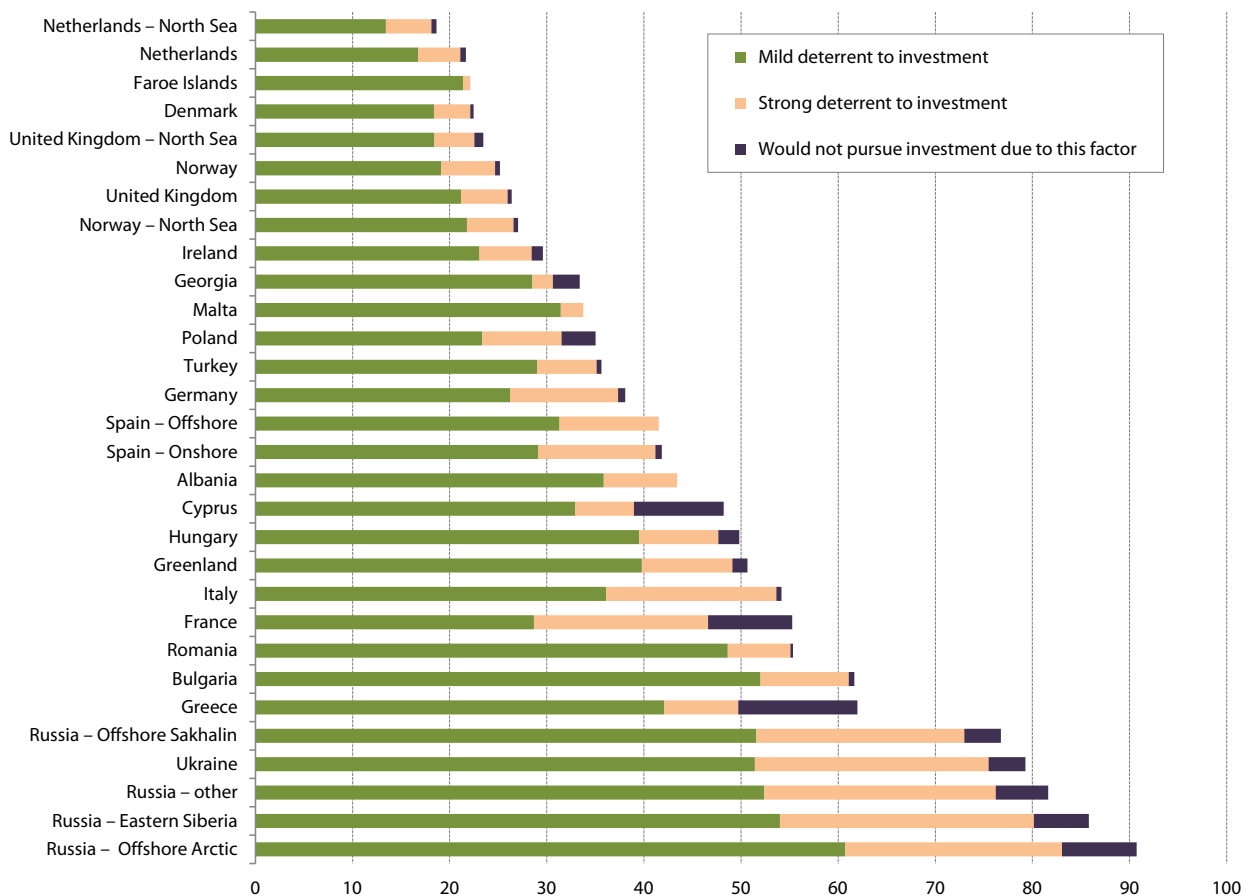
## Europe

Figure 12 shows the rankings for European jurisdictions based on this year's Policy Perception Index values. We were able to evaluate 30 jurisdictions in this region compared with 28 in 2012 as Spain—Offshore and Spain—Onshore were added to the 2013 survey.

Three Russian jurisdictions—Offshore Arctic, Eastern Siberia, and Other—are in the fifth quintile and amongst the 10 least attractive global jurisdictions for upstream petroleum exploration investment. They fell in the fifth quintile in 2012 as well.

Four European jurisdictions are in the fourth quintile this year. Both Bulgaria and Greece dropped from the third quintile in 2012 to the low fourth quintile range. Bulgaria's attractiveness has fallen significantly due to a deteriorating commercial environment—especially with regard to the taxation regime (46%) and fiscal terms (39%) factors—as well as increased concern regarding political stability (34%). Greece's attractiveness deteriorated largely because of increased negative responses for its commercial environment—especially trade barriers (42%) and quality of infra-

**Figure 12: Policy Perception Index—Europe**



structure (30%)—although it also improved notably in terms of labour and skill availability (-53%). Russia—Offshore Sakhalin, and the Ukraine are also in the fourth quintile, as in 2012.

There are nine European jurisdictions in the third quintile this year, up from five in 2012. The main reason for the increase is that five jurisdictions—Romania, France, Greenland, Hungary, and Cyprus—have each been awarded markedly worse Policy Perception Index scores (by more than 10) indicating deteriorating attractiveness for exploration investment which has dropped these jurisdictions from the second to the third quintile. Both of the Spanish jurisdictions that were added to the survey list this year are also ranked in the third quintile. Italy and Albania are ranked in the third quintile again, although both improved their overall score and ranking, especially Albania.

This year 14 (of 30) European jurisdictions rated in the attractive first and second quintiles compared with 18 (of 28) in 2012. Turkey moved up to the second quintile from the third quintile while Ireland, Denmark, Faroe Islands, Norway—North Sea, and Netherlands dropped to the second quintile from the first. The Netherlands—North Sea is the only European jurisdiction in the first quintile. It is also among the most attractive 10 jurisdictions of the 157 that were ranked this year.

Hungary, Cyprus, and Bulgaria all achieved worse scores on the Policy Perception Index by at least 20 points indicating that their attractiveness for upstream petroleum investment has deteriorated. Accordingly, their Index rankings dropped significantly. Hungary fell from 28<sup>th</sup> place (of 147) in 2012 to 80<sup>th</sup> spot (of 157) largely because of increased concerns regarding uncertainty pertaining to environmental regulations (58%), fiscal terms (39%), and regulatory enforcement (37%). Cyprus dropped from 27<sup>th</sup> position (of 147) in 2012 to 76<sup>th</sup> (of 157) mainly as a result of less favourable scores on the disputed land claims (44%), legal system fairness (43%) and political stability (31%) questions.<sup>10</sup> In addition, the following eight jurisdictions saw their scores on the Policy Perception Index worsen by at least 10 points compared with 2012: Ukraine, Romania, France, Greenland, Germany, Malta, Ireland, and Netherlands.

Albania and Turkey exhibited the greatest improvements among the European jurisdictions this year. Turkey moved up the rankings from 66<sup>th</sup> in 2012 to 48<sup>th</sup> place largely because of improvements to its regulatory climate. Albania climbed from 95<sup>th</sup> (of 147) to 67<sup>th</sup> spot as respondents indicated less concern with the quality of infrastructure (-47%), labour availability and skills (-38%), and political stability (-32%).

Compared with last year, the attractiveness of Europe for upstream petroleum investment has deteriorated in 2013. This finding is not surprising given the economic challenges currently facing the region.

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10 The reasons for Bulgaria's worse performance are explained earlier in this section.

The comments received for European jurisdictions range from positive to critical. Some of them are provided below and the comments have been edited for length, grammar and spelling, to retain confidentiality, and to clarify meanings.

## Faroe Islands

“Incredibly low fiscal take, cooperative regimes.”

## France

“The decision of the French government to take back all the onshore licenses for unconventional petroleum.”

“Political interference in the administration of upstream exploration and development which has halted all administrative and permit approvals for up to three years; cumbersome well permitting process requiring 2+ years to permit a simple exploration well (3 months normal average outside France); interference by local and national politicians in hydrocarbons business, manipulation of media against hydrocarbons industry despite job and economic growth resulting from it; large scale ignorance at central government policy level which filters down through administration and society creating unfavorable environment.”

“‘Green’ socialist government has put all licensing activity on hold and banned any kind of fracking (conventional or unconventional). New ‘Code Minier’ in preparation but no idea what it will contain.”

## Greece

“Lack of big areas of unexplored acreage. Poor hydrocarbon systems.”

“Greece has an abundance of oil and has never had a well drilled on land. Why? Politics!”

## Hungary

“The Hungarian government stopped the former exploration licensing system 2.5 years ago, but a new system has not been fully developed yet—thus no new blocks available since October 2011. Environmental authorities completely forbid work on Natura 2000 areas (EUwide network of nature protection areas), which is not the case in other EU countries, and not what the Hungarian regulations say.”

“The Hungarian government should look at energy—especially upstream—companies as partners and not as enemies who, supposedly, generate high profits and take them out of the country. They should understand that upstream is a high risk, high reward



business, and the success of these companies is a success to the host country as well through the royalties and taxes paid, and keep this industry alive in Hungary.”

## Norway

“Clear, transparent, and predictable regime, generous exploration cost recovery.”<sup>11</sup>

## Norway North Sea

“Stable fiscal regime, clear legislation on terms and conditions, strong legal system.”

“Although the fiscal take is extremely high (close to 80%), they provide upfront cash compensation for close to 80% of exploration expenses.”

## Russia—Offshore Sakhalin

“Which jurisdiction has the least favorable policies: Anywhere in Russia due to the corruption and the scale of capital at risk in order to develop projects there.”

## Russia—Eastern Siberia

“Russian policy is not stable and the fiscal terms are too harsh for investors.”

## Russia—Offshore Arctic

“Expensive development, little juridical security, state monopoly.”

## Russia—Other

“In the case of Russia: hostility to the West, IOCs and practices verging on racketeering by oligarchs and government.”

“Russia—contractual uncertainty, lack of sanctity of contract. Resource ownership uncertainty.”

“Good hydrocarbon potential but serious above ground risks, particularly contract instability.”

“Regulator uncertainty, corruption, concentration in national oil company hands, unwillingness to reform.”

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11 This comment likely applies to Norwegian offshore areas other than the North Sea: the country has no onshore oil and gas reserves.

## Netherlands

“The Netherlands regulatory framework is held ransom by environmental pressure groups.”

## Spain

“Awarding an exploration permit in Spain may take more than 5 years. Many national, regional, and local administrations are involved in the process. Environmental permitting regulation for exploration and production (E&P) is not clear enough.”

## Turkey

“Flat royalty rate of 12.5%, corporate tax rate 20% (with write-offs for exploration and production expenditures), long exploration licence term up to 11 years, no restrictions on fracking, Brent-related oil prices and Russian-related domestic natural gas prices (>US\$10/Mcf), transparent regulations and independent regulatory agency, pro-business government, availability of infrastructure, ready markets for oil and gas (Turkey imports 98% of natural gas needs and 92% of oil needs), world class unconventional oil and natural gas opportunities (tight gas, shale gas, tight oil, shale oil), equipment availability at very competitive day rates (close to North American costs).”

“The past decade of political stability in Turkey, coupled with some of the best fiscal terms in the world make it a very attractive place to do business.”

## Ukraine

“Ukraine Authorities are corrupt, starting at the top. Impossible to ‘go it alone’ as a foreign company—essential you have a powerful Oligarch to provide cover.”

## United Kingdom

“Uncertainties in planning regime will negatively impact investment in onshore activity.<sup>12</sup> Lack of central government support means local decision makers will cause delays that are unacceptable to investors.”

“The UK has an exemplary policy climate—rational, well regulated, but not overregulated. Works well for companies as well as the ultimate beneficiaries (UK citizens). The UK follows the rule of law and has stable legal foundation.”

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12 Because the United Kingdom has no onshore proved oil and gas reserves of any remaining significance, this comment likely relates to expectations regarding exploration and development of natural gas believed to be embedded in onshore shale formations, which remain to be proven.

## Asia

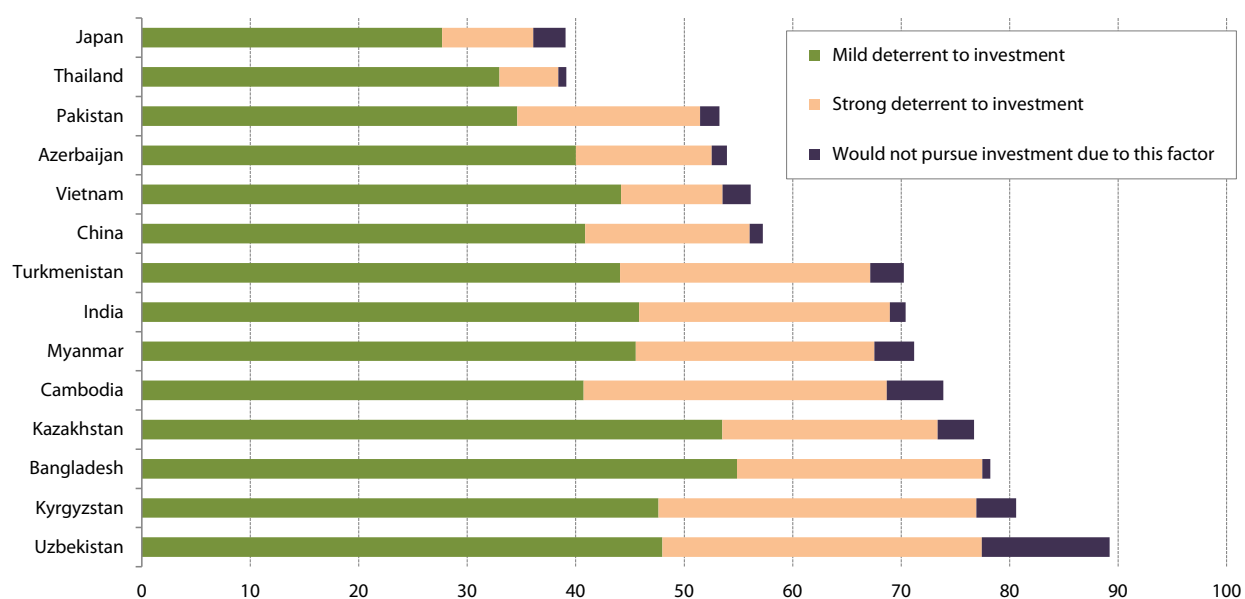
Figure 13 ranks the Asian jurisdictions that were evaluated this year according to their Policy Perception Index values.

Japan, again with an attractive second quintile rating, is still rated by petroleum explorers and developers as the most attractive jurisdiction for investment in Asia, although its attractiveness for investment fell in this year's survey as evidenced by a Policy Perception Index score near the upper bounds of the second quintile (39.1) compared with a score of 27.4 in 2012. The deterioration is due in part to increased negative sentiment with regard to taxation (37%), fiscal terms (13%), and regulatory enforcement (11%). Consequently, Japan dropped from 37<sup>th</sup> place (of 147) in the overall ranking in 2012 to 57<sup>th</sup> place (of 157) where it is closely followed by 39<sup>th</sup> ranked Thailand, which also has a second quintile score. Uzbekistan and Kyrgyzstan, both with undesirable fifth quintile scores, are apparently the two least attractive countries in the region.

Once again, most Asian jurisdictions have relatively unattractive third or fourth quintile ratings. However, there have been some notable changes in the relative attractiveness of some of the 14 Asian jurisdictions (the same group of countries as in 2012). Kyrgyzstan experienced the most significant deterioration in Policy Perception Index scoring and as a result has dropped from the fourth quintile in 2012 to the fifth quintile. The change is mostly due to increased concern over the country's geopolitical risk. Uzbekistan remains the least attractive jurisdiction in the region and one of the 10 least attractive jurisdictions overall.

Turkmenistan joined five other countries in the fourth quintile this year, dropping from a third quintile score in 2012. The country's poorer overall score largely resulted from increased uneasi-

**Figure 13: Policy Perception Index—Asia**



ness over commercial and regulatory factors, particularly labour and skills availability (32%), uncertainty concerning environmental regulations (23%), and taxation (23%). Bangladesh also received a poorer rating than a year ago while Cambodia improved somewhat in both rank and score. Both, like Kazakhstan, Myanmar, and India, remained in the fourth quintile this year.

Four Asian jurisdictions have third quintile scores this year: China, Vietnam, Azerbaijan, and Pakistan. Of these countries, Pakistan's attractiveness for upstream petroleum investment improved the most, allowing it to move into the third quintile from the fourth, and up in the rankings from 129<sup>th</sup> (of 147) in 2012 to 92<sup>nd</sup> (of 157). The improvement is mainly due to less negative sentiment being expressed by survey respondents regarding the cost of regulatory compliance (-36%), fiscal terms (-33%), and infrastructure (-28%). Thailand also received more favorable scores overall which allowed the country to move into the more attractive second quintile from the third, in part because of less negative sentiment over its geological database (-31%), uncertainty concerning disputed land claims (-25%) and regulatory enforcement (-21%).

Below are some of the comments received about the petroleum industry investment environment in various Asian countries. The comments in the following section have been edited for length, grammar and spelling, to retain confidentiality, and to clarify meanings.

### **Cambodia**

“Keeps adding on more fiscal devices even when the current regime is not viable.”

“The Cambodian government imposed a Custom Export duty on crude oil exports, which is tantamount to an additional royalty. When advised to reduce the royalty for marginal field production and seek to reap additional profits taxes correspondingly in the upside, the government forgot about the incentive that lowering the royalty on marginal fields would bring and slapped on an additional profit tax and oil share starting at the first dollar of profit—ouch! Consequently, there is no development!”

### **China**

“Well established petroleum laws and regulations, transparent on tax and tariffs, politically stable, not many community issues.”

“China has a less clear legal regime governing oil and gas exploitation and less political stability. There are also restrictions on business scopes of foreign invested companies in China.”

### **India**

“Changing taxation, immature industry and regulations. Difficulty dealing with government departments. Border issues with current blocks.”

“Complex laws, conflicts between central and state governments and too much out-dated bureaucracy.”

## **Pakistan**

“Pakistan is a relatively good country with an English legal, accounting, and education system, and high prospectivity.”

“Adhocism in policy making. Regulators did not keep up with the pace of policy makers in Pakistan in 2012.”

“The main issue with Pakistan is the security and political instability which has led to certain issues for multinational companies operating here for years. We have been working in the region since the early 1990s and have seen different phases in the political scenarios and, as a result, have witnessed unstable implementation of the policies. There has been some change in the last 5 years and democratic culture has been improved, and it is expected that with this change improvement in legislation implementation will be witnessed.”

## **Thailand**

“Thai track record of not messing around.”

“Thailand has a stable oil and gas environment and fiscal terms are very reasonable.”

“Environmental Impact Assessment (EIA) process suddenly stalled for one year immediately prior to concession termination. A governmental department that had never been involved much in the process previously suddenly became very interested. Participant from that department failed to show up repeatedly at meetings, causing the EIA not to be approved in a timely fashion and resulting in loss of concession. Later remedied after a lawsuit was filed with extension of concession term. Concession was generally known to be of value and I was concerned about official corruption and interest of 3rd parties in seeing concession go out for re-bid.”

“Relative to other SE Asian countries, easy to operate.”

## **Turkmenistan**

“Laws are good, one-window approach.”

## **Vietnam**

“Favourable fiscal terms. Government oil and gas departments are knowledgeable and encourage investment. Compliance with Production Sharing Contracts is transparent with minimal regulatory burden.”

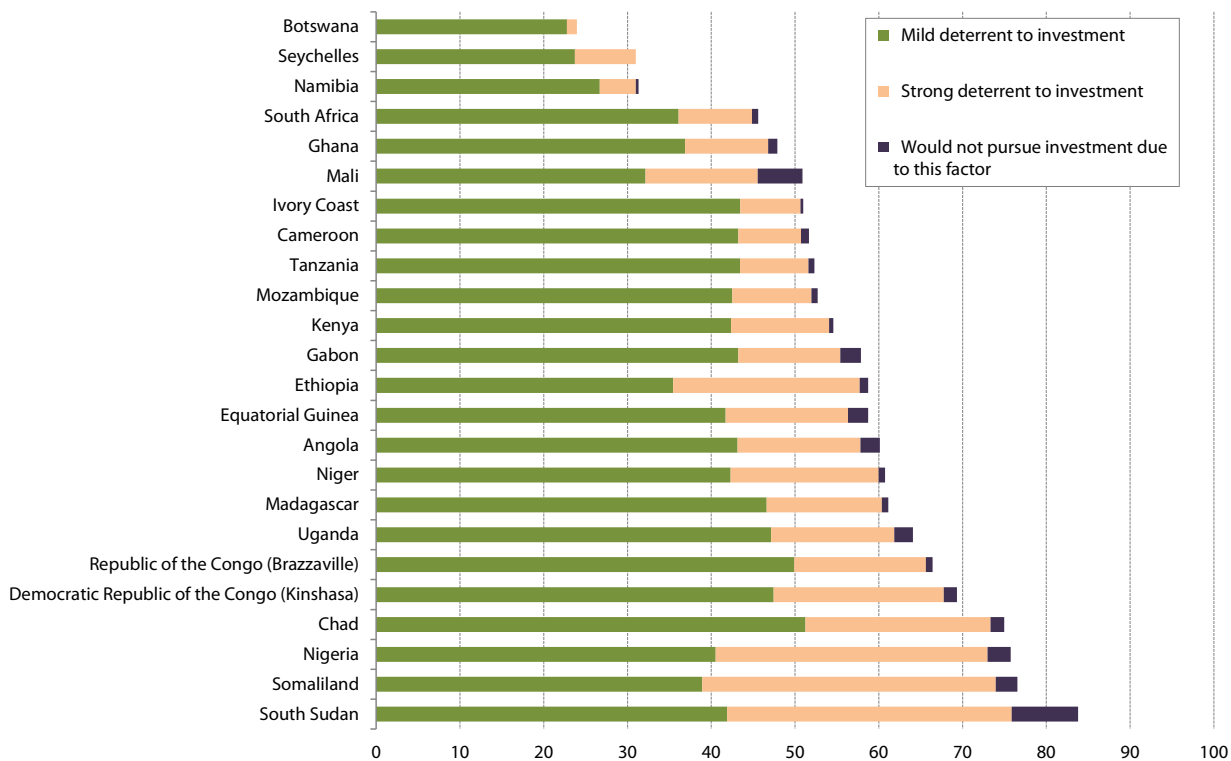
## Africa

This year we regrouped the African jurisdictions into two regions: 1) the Middle East and North Africa (MENA), and 2) the remainder of Africa (Africa). This change was made to be more consistent with the regional reporting and statistics produced by international organizations. This examines the survey results with respect to Africa (as redefined) and the following section, the MENA region.

Figure 14 shows the relative attractiveness of the 24 jurisdictions in Africa. This year, two African jurisdictions were added to the survey list: Botswana and Seychelles. Coincidentally, Botswana (ranked 17<sup>th</sup> overall) and Seychelles (37<sup>th</sup> of 157) are regarded as the most attractive jurisdictions for upstream investment in Africa—both with scores in the relatively attractive second quintile. Namibia is also in the second quintile having moved up from a 3<sup>rd</sup> quintile score in 2012 and jumping from 67<sup>th</sup> place (of 147) to 38<sup>th</sup> place (of 157) this year, largely as the result of investors' perceptions of reduced geopolitical risk and a stronger commercial environment.

There are 11 jurisdictions in the third quintile including Mali and South Africa. Both countries received significantly improved Policy Perception scores and rankings and moved up from fourth quintile scores in 2012. Mali improved the most, moving from 128<sup>th</sup> spot (of 147) in 2012 to 83<sup>rd</sup> place (of 157) as the result of improved scores on most of the regulatory factors, especially cost of

**Figure 14: Policy Perception Index—Africa**



compliance (-43%), and on questions affecting the commercial environment, especially taxation (-57%), and trade barriers (-43%). South Africa jumped from 106<sup>th</sup> spot (of 147) to 71<sup>st</sup> place (of 157) as the result of improved scores on all of the regulatory factor questions and less negative sentiment with regard to the quality of infrastructure (-38%). The Ivory Coast also achieved an improved score on the Policy Perception Index this year and moved into the third quintile from the fourth quintile as a result. Ethiopia's investment attractiveness ranking slipped both amongst the African jurisdictions and globally.

Uganda's and Niger's scores dropped from the third quintile range in 2012 into the less attractive fourth quintile this year. The deterioration in Uganda's overall score resulted from increased negativity expressed over its labour and skills availability (48%), regulatory duplication (39%), and security (34%). Security (38%) was also a reason for Niger's poorer performance along with legal system issues (40%). Somaliland dropped in the rankings as its scores on regulatory factors, notably environmental regulations (56%) were less robust than in 2012. Nigeria improved its score enough to allow the country to move up from the lower fifth quintile in 2012 to the fourth quintile. South Sudan, the lowest ranked African jurisdiction this year, dropped from 117<sup>th</sup> spot (of 147) in 2012 to 150<sup>th</sup> (of 157) placing it amongst the 10 least attractive jurisdictions.

Some of the respondents' comments concerning various African jurisdictions are presented below. These comments have been edited for length, grammar and spelling, to retain confidentiality, and to clarify meanings.

### **Botswana**

"Clear rules, good geological data, no corruption, native title issues defined."

"Not over regulated, fiscally and politically stable, and they realize that they need gas for their economy."

### **Chad**

"High on corruption and an unstable political and governance system."

### **Cameroon**

"Tough production sharing agreements in an area of marginal economic exploration opportunities."

### **Democratic Republic of the Congo (Kinshasa)**

"Not stable and high operation costs."

"Instability compared to neighbour Angola."

## Gabon

“Illegal takeover by government of onshore oil field worth 100M\$, having to go to international courts.”

## Kenya

“Kenya is horribly unpredictable. Success in neighbouring countries has made them distrusting of investors and they have been too quick to assume they have the leverage to tax operators that have yet to find any resources. They also overstate success stories to back changes in the law. Government officials have little interest in effectively communicating with companies.”

## Kenya and Mozambique

“They are eager to attract new investors.”

## Nigeria

“The policies behind offshore exploration, production, and development leading to the execution of Production Sharing Contracts between Nigerian National Petroleum Corporation (NNPC) and Oil Multinationals accords immense incentives to conduct petroleum operations in Nigeria.”

“Non passage of the Petroleum Industry Bill for over 3 years now has been a nightmare as it has brought uncertainty as to the industry in Nigeria. On the other hand, the space opened by the marginal field and indigenous ownership policy has seen dramatic rise in local capacity, participation, and competence in the last few years in Nigeria.”

“There is a need to curb the insecurity situation resulting from the militant unrest. Government needs to take responsibility in this area. Reduce corruption and have a good development and welfare plan for the people.”

## Niger

“Lack of clear rules.”

“Due to instability in the government, this country has not been able to make headway in developing its resources.”

## Seychelles

“Soft terms as newcomer to exploration and production.”



## South Africa

“Potential is limited but policies are very encouraging and forward-looking and legal/political stability is (so far) strong.”

## South Sudan

“The recent war with the north has made the country very volatile.”

## Uganda

“Lack of transparency. Red tape and bureaucracy are rife.”

## The Middle East and North Africa (MENA)

The 18 Middle East and North African countries evaluated in this year’s survey are presented in figure 15, ranked according to their relative attractiveness for investment as measured by the Policy Perception Index. Again this year, none of the region’s jurisdictions achieved first quintile Policy Perception Index scores, but seven do have relatively attractive second quintile scores.

Iran and Iraq are again ranked amongst the 10 least attractive jurisdictions in the survey and have overall scores in the least attractive fifth quintile. There are five MENA jurisdictions with scores in the fourth quintile including Libya, which moved up from the fifth quintile in 2012. Four jurisdictions have third quintile scores, including Tunisia which dropped from the second quintile in 2012 in part due to increased concerns with regard to quality of the geological database (29%), legal system (21%), and security (19%).

Both Jordan and Bahrain moved into the second quintile from the third quintile this year, as each achieved significantly improved scores on the Policy Perception Index and, as a result, moved up in the global ranking. Jordan climbed from 99<sup>th</sup> place (of 147) to 45<sup>th</sup> spot (of 157) in the global ranking as the result of significant improvements in survey respondents’ perceptions of the amount of geopolitical risk, infrastructure (-52%), and labour regulations and employment agreements (-50%). Bahrain moved from 78<sup>th</sup> place to 44<sup>th</sup> position because of less negative sentiment with regard to disputed land claims (-48%), labour and skills availability (-38%), labour regulations and employment agreements (-38%), and other factors. Qatar is again the most attractive jurisdiction in the region followed by the United Arab Emirates and Oman. All three moved up in the global rankings as the result of improved Policy Perception Index scores, indicating that they have become more attractive targets for investment in upstream petroleum exploration and production development.

Respondents provided the following comments regarding conditions in various countries in the Middle East and North Africa and comments have been edited for length, grammar and spelling, to retain confidentiality, and to clarify meanings.

### Algeria

“Very punitive fiscal regime and generally harsh environment.”

“Algeria has a tremendous exploration potential, but tough contractual terms and legal-fiscal changes are making some exploration and production (E&P) companies pull out of the country.”

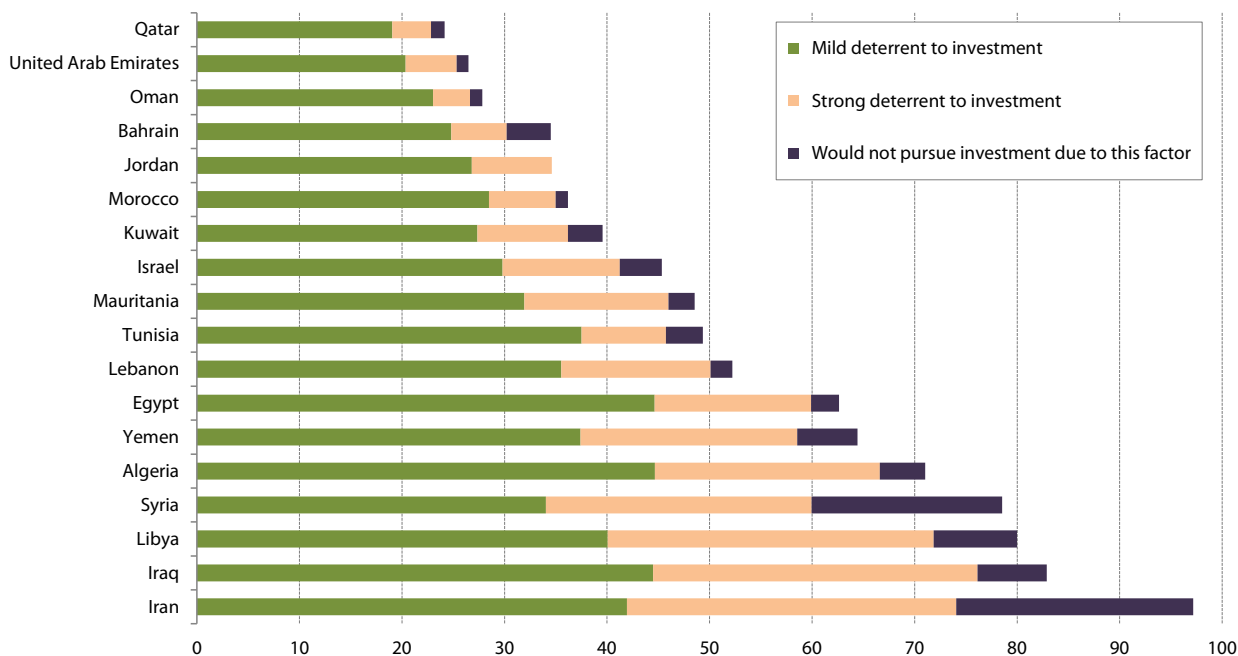
### Egypt

“Deferred and/or non-payment of contractor share of oil sales by the Egyptian General Petroleum Company (EGPC).”

### Israel

“Very anti-business and development, very slow bureaucracy with no fixed timelines, lack of knowledgeable regulatory authorities, experienced oil and gas professionals.”

**Figure 15: Policy Perception Index—Middle East**



## **Iran**

“Not responding to sanctions enough to help investment. Fails to recognize their weak value proposition.”

## **Iraq**

“Kurdistan in Iraq is most significant for exploration and production business and the local government there claims sovereignty over natural resources whereas Iraq federal government also claims sovereignty. Exploration and production companies would naturally feel helpless.”

“Technical Service Agreements with poor terms inconsistent with difficult work environment.”

## **Jordan**

“Ability to negotiate a stand-alone concession agreement together with all fiscals and environment/legal framework etc.”

## **Libya**

“Under Exploration and Production Sharing Agreement IV terms, full cycle returns to the contractor can be as low as 4% for new licence awards in the 2004 to 2008 period.”

“Fiscal terms only work for large companies and discoveries.”

## **Morocco**

“Very favourable conditions to investment.”

## **Oman**

“Fiscal and political stability, benign operating environment, mature services and labour, access to new opportunities, exploration success rate.”

## **Tunisia**

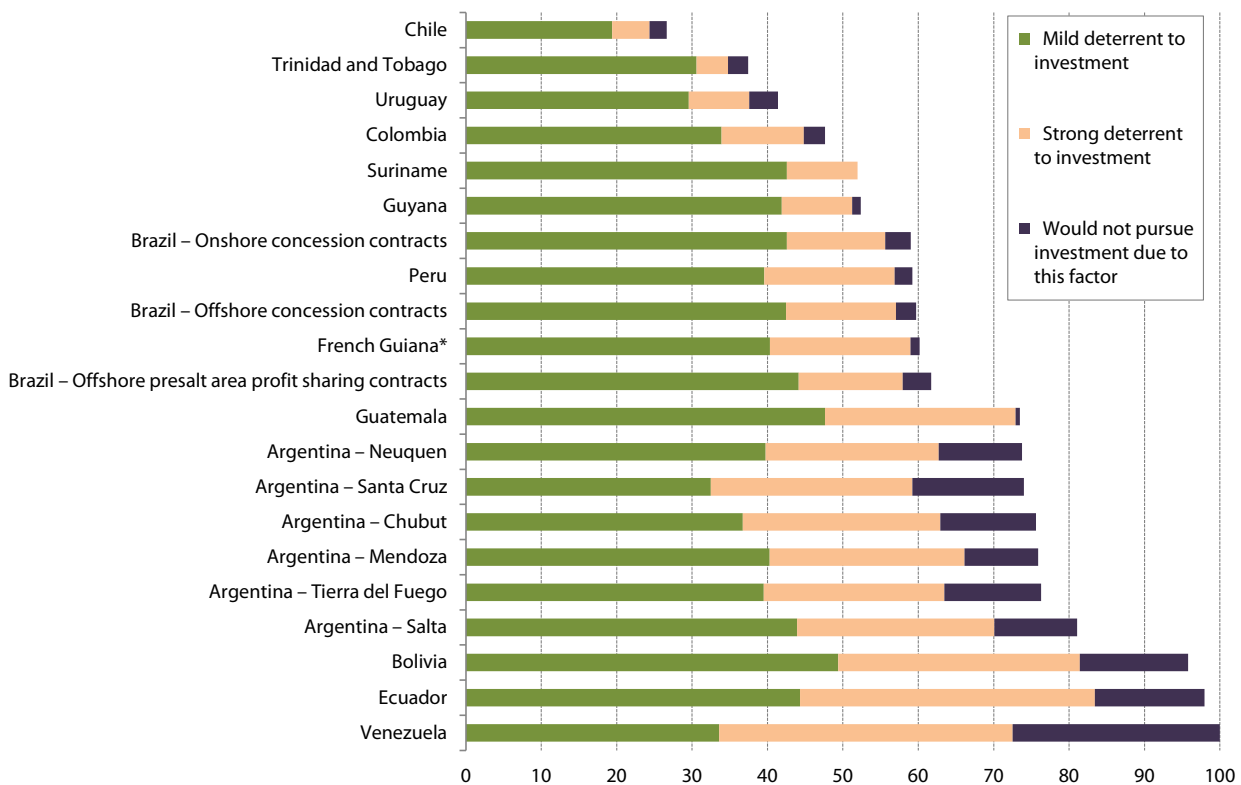
“Tunisian Approval Process at the moment is uncertain with no time limits!”

## Latin America and the Caribbean

Figure 16 presents the Latin American and Caribbean jurisdictions that were evaluated this year on the Policy Perception Index. Again this year, Brazil was broken out into three distinct jurisdictions: Onshore Concession Contracts (CCs), Offshore Concession Contracts, and Offshore Pre-salt Area Profit Sharing Contracts (PSCs). Argentina was broken down into six petroleum-producing provinces: Chubut, Mendoza, Neuquen, Salta, Santa Cruz, and Tierra del Fuego. French Guiana was added to this year's survey and Suriname was evaluated after not being included in the 2012 rankings, increasing the number of jurisdictions evaluated to 21 from 19.

Again this year, Venezuela, Ecuador, and Bolivia rank as the least attractive jurisdictions for investment in the region although Venezuela replaced Bolivia as the lowest ranked jurisdiction in the world. All three countries, together with Argentina—Salta have 5<sup>th</sup> quintile scores. Argentina—Santa Cruz received a sufficiently improved score to move from the 5<sup>th</sup> quintile to the fourth quintile. In part this is due to reductions in negative sentiment related to disputed land claims (-37%), uncertainty concerning environmental regulations (-36%), and protected areas (-21%). Four other Argentinian provinces—Tierra del Fuego, Mendoza, Chubut, and Neuquen—also have fourth quintile scores, but in each case their scores deteriorated somewhat this year. The 2013

**Figure 16: Policy Perception Index—Latin America and the Caribbean**



\*French Guiana is in South America but under French jurisdiction.

Policy Perception Index scores for Brazil—Offshore Pre-salt Profit Sharing Contracts and Guatemala resulted in both jurisdictions' scores dropping from the third quintile range to the fourth. Guatemala also fell significantly in the global rankings—from 77<sup>th</sup> place (of 147) in 2012 to 128<sup>th</sup> spot (of 157) as factors affecting both the regulatory climate and commercial environment were seen to pose greater barriers to investment, particularly trade barriers (47%), regulatory enforcement (38%), and taxation (36%). French Guiana ranks 109<sup>th</sup> with a low fourth quintile score.

Seven jurisdictions in Latin America and the Caribbean achieved third quintile scores this year, down from nine in 2012. Suriname, not evaluated in 2012, ranks 87<sup>th</sup> and has a score in this quintile. Both Brazil—Onshore Concession Contracts and Brazil—Offshore Concession Contracts have scores in the third quintile again this year, but in both cases, the scores are less robust than in 2012. As a consequence, these jurisdictions' rankings are lower than a year ago. Guyana, which ranked first in the region in 2012 dropped to the 6<sup>th</sup> most attractive in the region and fell in the global rankings from 48<sup>th</sup> (of 147) to 90<sup>th</sup> (of 157) in 2013, with an overall score in the third quintile instead of the second. The country's poorer performance is attributable to greater barriers to investment being indicated for most of the regulatory factor questions as well as for taxation (31%). Uruguay improved its ranking in the region as well as globally as a consequence of achieving a much improved third quintile Policy Perception Index score. This improvement was triggered by survey responses signalling less negativity on all the commercial environment factors with the exception of infrastructure quality.

Trinidad and Tobago moved up from the third quintile to the more attractive second quintile in 2013 and achieved a higher global ranking as the result of less negativity for all factors in its commercial environment. Chile registered the most improvement and is now seen as the most attractive jurisdiction for upstream petroleum investment in Latin America and the Caribbean Basin. Chile's overall score improved from the middle of the third quintile to the lower second quintile this year, improving its global ranking from 76<sup>th</sup> place (of 147) to 26<sup>th</sup> place (of 157). This resulted from improved scores on various regulatory climate questions, especially those on the cost of compliance (-63%), regulatory duplication and inconsistencies (-37%), and disputed land claims (-38%).

Respondents' comments on jurisdictions in Latin American and the Caribbean Basin are provided below. They have been edited for length, grammar and spelling, to retain confidentiality, and to clarify meanings.

### **Argentina in general**

“Regulated oil and natural gas prices in Argentina have stalled investment.”

“Argentina's natural gas comes now to Chile at a price of US\$18-19 per million British Thermal Units, and out of that approx. 80% are royalties and taxes. That is a horror story and a demonstration of government intervention in business.”

“Argentina—federal government expropriation of shares of Repsol, federal government controls on price, federal government controls on export volumes, powerful unions, and federal government misaligned with free enterprise (but aligned with disenfranchised poor majority, dependent on subsidies from unions and federal government).”

“Total failure to respect contracts and vested rights upheld by all instances of federal and provincial governments.”

### **Argentina—Neuquen**

“Well-developed policies. Politically less dependent on the federal government.”

### **Argentina—Santa Cruz and Tierra del Fuego**

“Political, legal, and contractual uncertainties are killing the business.”

### **Bolivia**

“Legal uncertainty. Populist expropriations. Land locked. Social and political instability. Poor training.”

“History of total expropriation is worse than anywhere, and no sign of this changing.”

### **Colombia**

“Launched an aggressive incentive program to invest by streamlining the initial investment processes, specifically related to environmental regulations. In Colombia, Environmental Impact Assessments (EIAs) are approved in 6 months compared to the average two months it takes in Peru.”

“Colombia has well-organized bid rounds. Subsurface data packages are good and open. Blocks awarding process is clear and transparent. Good contractual terms.”

“Actively seeking exploration and production investment, so adjusted fiscal terms, regulatory environment, and land management to attract that investment. Very recently, within last 1-2 years, environmental permitting challenges, and deteriorating fiscal and tax policies have eroded success of the previous 5-10 years.”

“Colombia has the most favourable conditions for petroleum investment.”

### **Ecuador**

“Government always changes signed contracts unilaterally.”

## French Guiana

“A new minister with responsibility for oil and gas in Paris unilaterally banned all off-shore drilling... Fortunately, she was replaced several days later but the replacement appears to refuse to sign anything that comes across the desk related to oil and gas.”

## Peru

“Peru just introduced a mandatory carry of the state company through the exploration phase for bid rounds. This at a time many players are leaving the country. The bid round will not go well.”

“Legislation has been stable and economy growing consistently for the last 10 years. Energy need has been growing, with under explored basins and reasonable entry prices.”

“Peru encourages oil and gas investment but the political interaction requires payoffs and under the table dealings.”

## Suriname

“Ex Dutch colony with questionable leadership and mentality for an oil producing area.”

## Uruguay

“Uruguay has been an example of good policy climate: without much prospectivity they managed to attract significant investment and world class players to start exploring their deep waters, based on attractive terms, flexibility, political stability, and legal certainty.”

## Venezuela

“Erratic, changing, and inconsistent legal, regulatory, and fiscal regimes.

“Pursuing internal socialist policies and hostile to liberal capital investment (and profit producing economic model) pursued by international companies.”

“Instability. Requirement to partner with inefficient state oil company.”

“Venezuela has been a horror story during the last 10 years: contract instability, expropriation without compensation, tax modifications, oil price windfall taxes, labor restrictions, political interference in operations, lack of legal certainty, etc.”

“The descent of PDVSA (Venezuela’s national oil company) from an exemplary international national oil company to its present degraded status, all due to political developments, is striking.”

“There are companies in Venezuela that have not been paid in months, not even in the national currency. Contracts are backtracked by expecting foreigners to invest their share, PDVSA’s share too (without PDVSA going into debt) and not have any say in operations, finance, and labor policy. Expropriation menaces are constant and you can never find the PDVSA person to talk to for any decision and complaint.”



## Optional survey questions

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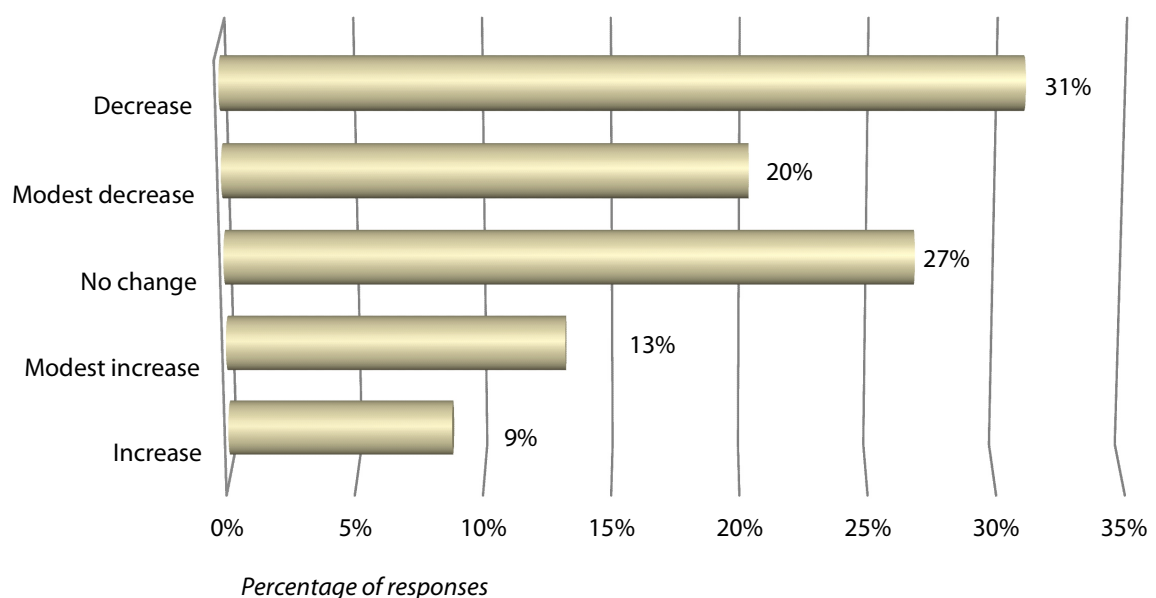
### Optional Question One

Participants were asked, “How would your assessment of investment potential change were the United States to implement federal controls over hydraulic fracturing?” Their responses follow (see figure 17). Slightly more than half of respondents would decrease or modestly decrease their assessment as a result. Twenty-seven percent of respondents would not change their assessment. However, 22 percent of respondents indicated that they would increase or modestly increase their assessment.

The results suggest that most of those who responded to this question by indicating that they would lower their assessment probably believe that federal controls would increase the cost of regulatory compliance to such a degree that they would prefer to focus on investment opportunities in the US that don't involve hydraulic fracking or to opportunities in other countries (which could involve fracking). Why, on the other hand, some respondents suggest that they would increase their assessment is unclear. This might reflect their belief that federal government controls would reduce regulatory uncertainty in relation to fracking.

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**Figure 17: How would your assessment of investment potential change were the United States to implement federal controls over hydraulic fracturing?**



The comments below were received regarding the regulatory environment for hydraulic fracturing in the United States. Comments have been edited for length, grammar and spelling, to retain confidentiality, and to clarify meanings.

“If the US controls or slows down hydraulic fracturing the investment climate in the US will slow down by at least 60-70 percent. This will destroy the US petroleum industry until a new administration is elected.”

“Industry does not like uncertainty and the provincial and federal and US state governments have generated tons of studies and reviews, but have not tackled the issues properly. In the US’s case, the process simply goes on and on. Not making a decision wipes out projects just as readily as bad government programs.”

“Surprised that US federal lands were not treated as a separate entity/jurisdiction. This would receive a very low/hostile rating as it is virtually impossible to conduct meaningful business on federal lands.”

“Outside of federal lands, the federal government has no business sticking its nose into private enterprise!”

“Projects deferred are often those destroyed. There is an open door for international trade in liquefied natural gas and that door is closing. Western Australia may have the market before the US can move.”

“Environmental regulations are one of the biggest impediments to our industry. We have had salt water or “brine” coming out of our wells for many years. Environmentalists now call this hazardous waste. In PA they use this salt brine to get rid of the snow. Apparently it wasn’t that much of an issue. Now environmentalists wish to ban fracking. This procedure has been around since 1954. Why is this now a problem? It seems that no matter where we go to drill or develop oil and gas, the state or federal governments are sticking their hands out and wanting money. Government interference will be the ruination of our industry if they keep maligning and over regulating our oil and gas.”

“Government regulation, whether federal, state, county or city, needs to be appropriately balanced from a commercial and environmental perspective so as to not completely derail investment. Alternative sources of energy are still a long way from being able to replace fossil fuels and economies need adequate fuel supplies at affordable costs in order to maintain and grow.”

“The government has no authority to outlaw such drilling practices except, perhaps, on federal lands in the US. We think that the federal government will not take such an ill-advised action on federal lands without being able to prove that fracking is causing some measureable damage. We have now been fracking wells since 1940s and have now fracked in excess of one million wells, including many on federal lands in the Rocky Mountain states.”

## Optional Question Two

Participants were also asked “How would your assessment of the attractiveness of Western Canada and the Northwest Territories for investment change if Canada continues to face a shortfall in oil-transport capability to Eastern Canada, export markets overseas, and US refineries?” Their responses follow (see figure 18). The majority of respondents (62%) indicated that the attractiveness of the region would decline. Twenty-nine percent of respondents would not change their assessment. Rather unexpectedly, nine percent of respondents indicated that they would assess Western Canada and the Northwest Territories as being more attractive for investment.<sup>13</sup>

The following comments were received regarding Canada’s oil-transport capability. Comments have been edited for length, grammar and spelling, to retain confidentiality, and to clarify meanings.

“Should we be surprised we don’t have the appropriate crude oil take-away capacity? Governments have been approving oil sands investment. Where are the equivalent pipes?”

“In Canada, the oil transportation challenge is the biggest issue. However, it is a two-part issue. Part one is just building/expanding pipelines. An equally large (or maybe larger) issue is whether these pipelines should have dilbit (diluted oilsands bitumen) in them or not.”

“Canadian energy is marginalized now due to issues of marketing the products and the view that North America is oversupplied with all forms of hydrocarbon versus demand. Investment climate will remain challenged until more markets can be opened although overall concerns about Chinese economic growth rates will still provide overall throttle on investment. Canada needs to project how its policies and procedures are an advantage to investment, and are lower risk than some of the procedures in the US—i.e., horizontal well completions, and also gas flaring that is going on to a very high extent in the US Bakken oil play.”

“Midstream constraints (pipelines) are the single biggest risk to the industry today in Western Canada. It has been the single biggest risk for years and industry has communicated these risks for years in anticipation of the bottlenecks. Unfortunately government is late to the game and risks billions of dollars in tax revenues and billions of dollars in investment as those capital dollars are diverted elsewhere. Hopefully the urgency of the matter is elevated.”

“Need the Keystone pipeline to bring oil from Canada to the US. It would help with pricing immediately.”

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13 How the outlook for upstream investment in Western Canada and the Northwest Territories could be seen to improve if Canada continues to face transportation bottlenecks is unclear. The rationale might be that the situation needs to get even worse in order to trigger governments to adopt measures that are necessary to expedite investment in required transportation infrastructure.

“Canadian federal government and provincial governments need to wake up and smell the flowers. The world of energy is moving ahead without Canada. If Canada doesn’t open up its export routes to both the west coast (primary) and east coast (secondary), then Canada is doomed to continue subsidizing the US profligate use of energy forever, to the loss of Canadian citizens today and the generations to follow.”

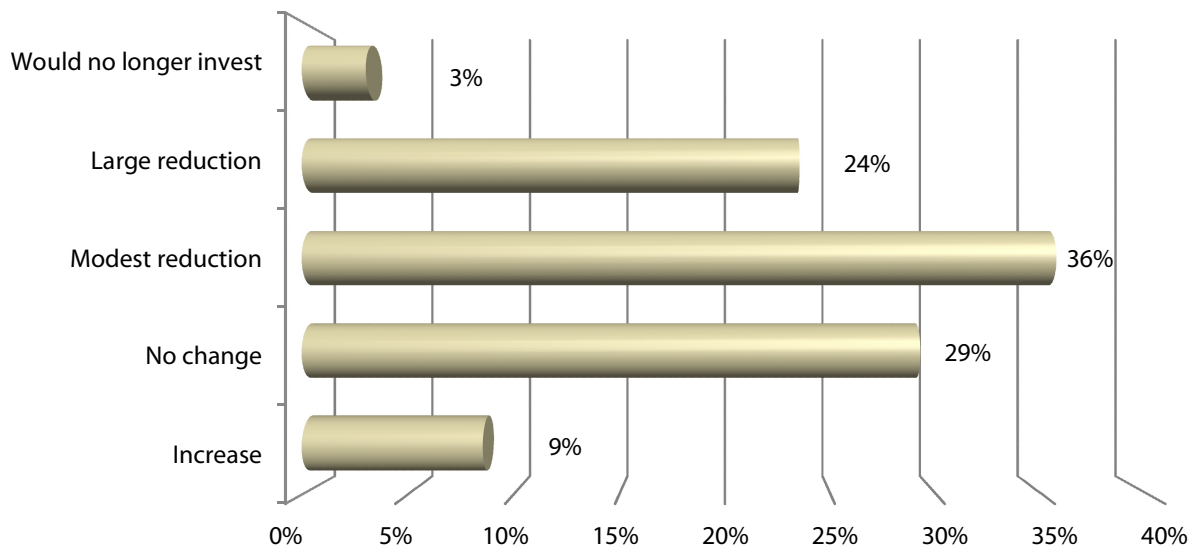
“We should not be ‘held hostage’ by the funds provided by US companies to the ‘Green Party’ to hinder additional pipelines to the West Coast. This market to Asia is essential to our wellbeing. The recent light oil production as a result of horizontal drilling and fracking in the North Dakota area is REAL and has already displaced our oil exports to the US. It appears that we have an oil and gas surplus and it is currently selling for a heavy discount.”

“Diversifying our markets to export both oil and gas should be a national priority/vision. The current lack of alternatives cost our country millions of dollars a day.”

“Keystone XL has become a fiasco. The regulatory process has been subverted by politics.”

“The continued debate over fracking and the Keystone XL pipeline points out a troubling trend in US policy: that economic arguments don’t matter in the face of strong political convictions. I would suggest that countries ranging from Venezuela to Germany are poster children for the fallacies inherent in that approach.”

**Figure 18: How would your assessment of the attractiveness of Western Canada and the Northwest Territories for investment change if Canada continues to face a shortfall in oil-transport capability to Eastern Canada, export markets overseas and U.S. refiners?**



## Additional comments from the Petroleum Survey

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Comments have been edited for length, grammar and spelling, to retain confidentiality, and to clarify meanings.

### Regulatory “horror stories” ...

#### Canada

“Carbon tax in BC is a huge burden on natural gas companies. Carbon tax payments in 2012 equalled royalty payments for our company.”

“Duplication and miscommunication between the [now former] Energy Resources Conservation Board and Alberta Environment... horrific!! And that Board’s unrealistic expectations from small junior sector participants.”

#### USA

“Corrupt and intrusive federal policies in the US are driving capital investments slowly to Canada and various overseas venues.”

“Michigan and New Mexico: Overzealous regulation personnel with strong-arm tactics and threats.”

“The state of North Dakota has all of its oil and gas information available to the public at a very nominal fee. Unfortunately, the worst “horror” stories I have are from federal land managers in North Dakota, whereas state and private lands are truly accessible.”

“Legacy lawsuits in Louisiana (unlimited environmental liability regardless of time passed or changes in producing companies) have driven the operators out of the state and reduced activity by over 25%. See *Corbello vs. Iowa Production*. Shell Oil had to pay \$80 million in damages for cleanup on land valued at \$100,000.”

“My horror story would be operating in the Gulf of Mexico, in shallow water, after the Macondo spill in deep water. The regulatory authority panicked and created unenforceable rules which set the industry back two years.”

“The City of Fort Collins in Colorado chose to annex an existing oil field in the 1990’s. The city chose how to zone the area and they chose to zone it residential. In the late 1990’s thru July 2010 the city approved three separate housing subdivisions with housing lots right up to existing well locations. Then Fort Collins City Council determined that the oil wells were industrial operations and approved a moratorium on drilling

and a ban on hydraulic fracturing and tried, but failed, to shut down operations in 2012 and 2013.”

“Preliminary conclusions of the draft US Environmental Protection Agency’s report on hydraulic fracking indicate a potential connection between fracturing and Pavillion, Wyoming, groundwater quality. However, the findings were not scientifically verified by a third party.”

“Shell’s experience in the Chukchi Sea off Alaska, whereby one government department leases the land and other departments prevent the lessee from exploring and developing it.”

## Oceania

“New South Wales: constantly changing the policy in relation to gas exploration, which is driving exploration away and will starve their economy of gas.”

“Federal Australian government in multiple backflips in policies, imposition of arbitrary bans, or no-go areas, introduction of additional tax and compliance burdens.”

“Many examples in Australia where a public that is not well acquainted with the petroleum industry and advances in science and engineering is frequently swayed by the media (mainly TV networks) into expecting worst case scenarios are widespread.”

“Indonesian restrictions on expatriate investor work permits (age, in-country years working, etc.). Indonesian regulatory approval process, etc.”

“The dismissal of the oil and gas upstream implementing body in Indonesia in late 2012. And the introduction of regulation there which is in conflict with the production sharing contracts which companies have with the host country.”

“Production sharing contracts have become vehicles for auditory abuse and use of threats of cost recovery denial as weapons of influence/interference, as in Indonesia.”

“Indonesia’s use of criminal law and anti-bribery rules to coerce foreign oil companies into compliance with increased government share of revenues.”

## Europe

“We filed applications for two licences in Spain in 2003. After eight years there was no progress so we cancelled the applications.”

“France: To carry out a simple assignment of interests (i.e., farm-out), the process takes 2+ years, a 300-page application, 7 regulatory steps and a ministerial order (UK process takes 7 days). Permit renewal takes the same time—permit is renewed only after permit expires; well permitting process takes 2+ years, regulatory overkill at every step of the

exploration and production (E&P) process; hydraulic fracking was banned without review of expert's reports due to election politicking/grandstanding.”

“Horror is the duration of approval processes ratifications in Romania.”

## Asia

“China: not disclosing all past exploration data, provided only the good results.”

“Kazakhstan's sudden increase in the rent tax in 2011.”

## Middle East North Africa (MENA)

“Algeria: Over bureaucratic, non-unified government, corruption, and security issues.”

“Iraq and Libya: Very poor terms and lack of security.”

“Iran: Sanctions, unfavourable hydrocarbon law and fiscal terms, opaque business environment, contract instability, political uncertainty, security environment.”

## Africa

“Nigeria: corrupt and dangerous kleptocracy.”

“In recent times, Sudan, which is now divided into two countries, presented a horror spectacle to the exploration and production companies invested there. Sudan and South Sudan are yet to resolve all their issues.”

“Democratic Republic of the Congo (Kinshasa): Legally uncertain, unsafe, corruption.”

“Uganda: Corruption and high risk.”

“Papua New Guinea and Republic of Congo (Brazzaville): Political instability, personnel safety issues, uncertainty of tenure, sovereign risk.”

## Latin America and the Caribbean

“Arbitrary changes in every aspect of the industry in Argentina: taxes, labour laws, hydrocarbon prices, export hurdles, and so on.”

“Argentina: Modifications to contractual terms and arbitrary nationalizations.”

“The environmental regulator IBAMA [Brazilian Institute of Environment and Natural Resources] in Brazil is very sluggish and does not work in a time bound manner.”

“Brazilian ‘fines’ for environmental non-compliance, where you get a 30% discount if you pay within 10 days and agree not to contest or appeal the ‘fines.’”

“The Brazilian local content penalty fine is a horror story regarding how a regulatory framework can hinder investment.”

### **Exemplary policies...**

“Thailand: Royalty regimes are simple and promote common goals.”

“In Norway we have standardized joint operating agreements, unitization agreements, and to a large extent tie-in and processing agreements. Saves a lot of time and money.”

“Saskatchewan’s move to an environmental code of practice that allows for fast regulatory permitting and the use of professionally qualified environmental professionals versus ministry regulators for regulatory approvals and monitoring achieves a better result for the environment at lower cost, creates fast adoption of best practices, and improves regulatory timelines significantly.”

### **Opportunities & challenges ...**

“The industry needs to work with governments and environmental groups to set out proactive goals and objectives which can be met collaboratively. The classic model of conflict no longer is working and it is causing lost opportunities for all.”

“As the international oil companies leave the shallow-water regions and older fields in West Africa, West African governments need to make the investment climate and regulations work for smaller- to intermediate-sized oil companies that have the expertise and are the only ones left to invest in the region.”

“We need moderate regulatory oversight as [without it] companies will cut corners and the result is leaks, fires, poor environmental issues, poor landowner relations, service companies racing diesel rigs through communities, etc. The industry performs at a high bar relative to the concerns society has, but it only takes a few lousy operators to RUIN IT FOR THE REST OF US.”

“The industry should make an effort to standardize environmental regulations pertaining to the exploration and exploitation of shale plays. Draft standard shale joint operating agreement (JOA) and set forth parameters to help authorities in developing countries to offer areas for unconventional resources.”

“The misconceptions and misinformation disseminated by government, self-serving special interest groups, and the media add to the lack of trust towards the industry in general and the not-in-my-backyard attitude so common today.”

“The industry seems to be losing the public relations war. Opposition to all forms of petroleum development seems to be getting stronger. Opponents do not even have to



pretend to have real facts and figures. Emotional appeals seem to be sufficient to obtain political ends.”

“Investment climate is not presently favourable for junior exploration companies with little or no production. Misinformation concerning unconventional resource production is producing political backlash and uncertainty in policies.”

“Oil and gas jurisdictions need to be competitive to attract investment dollars. The industry has choices. For those jurisdictions that fail to recognize this—uncompetitive jurisdictions will continue to see investment erosion. The uninformed public activists who protest development and steer public perception against industry through the marvels of modern technology (i.e., the electronic social media conduits), weaken their local economy and become catalysts for creating an impoverished future for the worlds they live in.”

“Environmental restrictions have become a religion, and are no longer subject to logic and science. They are unpredictable and drastically restrict potential investment in exploration and development projects.”

“The EU policy with regard to the reduction of CO<sub>2</sub> emission is simply stupid, not even based on mathematical models and simulations.”

“There will be great economic pressure between Iraq and Kurdistan to resolve the legal basis for oil developments, including the title to oil, export permits, and revenue sharing: but these groups are capable of continuing (and probably will continue) to behave irrationally [just] to disagree.”

“Many barriers to entry with nationalization and national preferences in many jurisdictions outside of North America and the North Sea (Western world). Seeing increased dominance of Asian players (many government-linked) who have competitive advantages due to different market pressures and availability of capital.”

## **Future expectations ...**

“The investment climate is going to be better and better in the future due to the energy demand increasing from time to time. Countries that have been stiff and inflexible to investors will be left behind and the benefits will come to countries in the new frontier (Myanmar, Madagascar, Bangladesh, Eastern Africa).”

“The oil and gas sector is out of favour with investors and it is particularly difficult for smaller domestic or international companies to raise the necessary capital to grow the business at this time, whether based in Calgary, Houston, or London. Macro issues with respect to international GDP growth rates, constrained commodity prices, and restrictions on inflows of capital by state owned enterprises (in the case of Canada) could result in very tough times for the sector over the next 2-3 years. Those with strong cash

flow can avoid debt and equity markets and provide shareholders with their strong appetite for yield. Others will struggle and either disappear or merge with others before there is a rosier capital markets picture.”

“Investment in the upstream industry would generally continue to be affected by regulatory and policy changes in most jurisdictions. I foresee increased interest and investment in the developing world as political and economic conditions in that region continue to stabilize. The cost of crude oil and petroleum products will remain stable and may dip slightly within the next 3-5 years.”

“The industry will still grow in spite of the emergence of unconventional resources. Predictions of the “global energy crisis” did not happen and yet we have an abundance of resources. Not all of Africa and South America have been explored. We still have the Arctic, Iraq, Iran, etc. Industry is still making discoveries in Gulf of Mexico.”

“Large-volume offshore developments will prosper: UK North Sea, Norway, Gulf of Mexico, offshore Brazil, and offshore West Africa. Existing large-volume onshore developments will prosper: Saudi Arabia, Qatar, UAE, Kuwait, and Russia (latter to the extent run by Russians themselves). The Straits of Hormuz will become more high risk as the Iranians become more fractious and hostile (more so if they do in fact become a nuclear armed state in 2013 or 2014 or 2015, and become even more fractious and hostile and unpredictable).”

“I think the upstream petroleum industry will continue to flourish as long as oil prices don’t continue to drop, but the costs will grow as environmental policies get stricter and the aboriginal communities living in or around the license areas become aware of their negotiating power and keep increasing their demands to a breaking point.”

## Single-factor results

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The rankings for the specific factors addressed by the 16 survey questions provide detailed information about each jurisdiction's relative attractiveness for investment (see figures 19 through 34).

The results for each factor are illustrated by the rankings, and the complete data set is available for downloading. The jurisdictions with a relatively low proportion of negative scores appear near the top of the rankings and are generally regarded as more attractive for upstream petroleum investment.

The single-factor rankings are self-explanatory. However, we highlight some findings of particular interest below.

### Fiscal terms

According to the survey respondents (figure 19), fiscal terms pose the greatest obstacle to investment in Venezuela, Bolivia, Ecuador, Iran, and Argentina—Tierra del Fuego, Chubut, Mendoza, Santa Cruz, and Neuquen. Amongst the Canadian and US jurisdictions fiscal terms appear to be of most concern in California, Quebec, and New York. In each of those three jurisdictions the scores for this factor fall in the undesirable fourth quintile.

Jurisdictions with the lowest percentages of negative responses on the fiscal terms question (which suggests that this issue is not of great concern) include Saskatchewan, North Dakota, South Australia, Oklahoma, Mississippi, and Australia's Northern Territory. Amongst the African jurisdictions fiscal terms are of least concern in Botswana, followed by Seychelles and Mali.

### Uncertainty concerning environmental regulations

The 10 jurisdictions that have the worst scores with regard to uncertainty concerning environmental regulations this year are Quebec, Ecuador, California, France, New York, US—Offshore Pacific, Spain—Offshore, Brazil—Offshore PSCs, Hungary, and Brazil—Offshore CC (figure 21). California, France, and Quebec were also in this group last year. Several of these jurisdictions—including Quebec, France and several municipalities and counties in New York—have moratoria on hydraulic fracturing.

Uncertainty concerning environmental regulations is of least concern to survey respondents in Saskatchewan, Oklahoma, North Dakota, Botswana, and Mali. They replaced Somaliland, Ethiopia, Bahrain, Cyprus, and Manitoba, which all saw increases in the degree of concern with regard to this issue.

## Interpretation and administration of regulations

The 10 jurisdictions with the worst scores on the question regarding interpretation and consistency in the administration and enforcement of regulations this year are Venezuela, Bolivia, Russia—Eastern Siberia, Kyrgyzstan, Argentina—Salta, Russia—Other, Ecuador, Quebec, Russia—Offshore Arctic, and Ukraine. Venezuela, Bolivia, Argentina—Salta, and the Russian jurisdictions were also in this group in 2012. Thirty-nine jurisdictions have unflattering fourth and fifth quintile scores on this question (figure 22).

New Brunswick, which ranked last (of 147) jurisdictions on this issue in 2012 has improved—receiving a low third quintile score. The most attractive jurisdictions in terms of this issue are Botswana, Faroe Islands, Saskatchewan, Oklahoma, Manitoba, Texas, Australia’s Northern Territory, North Dakota, Arkansas, and South Australia.

## Cost of regulatory compliance

Twenty-eight jurisdictions have unflattering fourth and fifth quintile scores on the cost of regulatory compliance factor (figure 23). Quebec ranks as the worst (of 157) jurisdictions on this issue. Other jurisdictions in the worst fifth quintile group are Russia—Offshore Arctic, US—Offshore Alaska, Venezuela, Ecuador, and Iran. Those in the fourth quintile with the highest and worst scores on this issue (in the upper half of the quintile) are Uzbekistan, Bulgaria, Bolivia, California, US—Offshore Pacific, Greece, Russia—Other, and Kazakhstan.

High regulatory compliance costs often also mean that the time required for project applications to be approved is unduly long. As a result, potentially viable projects are often subject to long delays or not undertaken at all. In such cases, the foregone economic and social benefits may be large.

## Protected areas

Canadian, US, and Australian jurisdictions dominate (11 of 16) the group with scores in the least attractive fourth and fifth quintiles on the question pertaining to uncertainty regarding protected areas (see figure 24). The scores for New South Wales, Quebec, and New York (although just barely so) fall within the least attractive fifth quintile. California, Ecuador, US Offshore—Alaska, US Offshore—Pacific, Queensland, Colorado, Guatemala, Alaska, Greece, Australia—Offshore, Peru, Bolivia, and New Mexico all have slightly better but yet very unattractive fourth quintile scores on this question. By contrast, Middle East and North African countries comprise seven of the ten jurisdictions with the least amount of negative sentiment indicated by respondents with regard to this factor.

## Trade barriers

Iran, three Argentinean provinces (Neuquen, Salta, and Tierra del Fuego), all four Russian regions, along with Venezuela and Uzbekistan are the 10 jurisdictions for which trade regulations and currency controls are indicated as posing the greatest barrier to upstream investment. The poor performance of the Argentine provinces and Russian regions with respect to this factor was also highlighted in the 2012 survey. Trade barriers were indicated to be of no concern whatsoever in Canada's Northwest Territories, Yukon, Alabama, Arkansas, South Australia, Malta, Botswana, and Jordan (see figure 25).

## Labor availability and skills

The 10 least attractive jurisdictions for labor availability and skills are Republic of Congo (Brazzaville), Kyrgyzstan, Niger, Somaliland, South Sudan, Uganda, Turkmenistan, Democratic Republic of Congo (Kinshasa), Chad, and Bangladesh (see figure 29). The 10 jurisdictions where labor availability and skills are of least concern are Louisiana, Oklahoma, Hungary, Texas, Netherlands—North Sea, Mississippi, Kansas, Arkansas, Colorado, and Norway.

Jurisdictions with high unemployment rates *per se* are not necessarily attractive to oil and gas explorers and developers; they require skilled workers and specialists for many positions and while the unemployment rate may be high, there may nonetheless be a deficiency in the availability of skilled labor. Furthermore, international mobility of skilled workers is important to the upstream oil and gas industry so it can meet its requirement for skilled workers without being constrained by the size and quality of the local work force.

## Disputed land claims

Somaliland has the worst score on the disputed land claims question this year (figure 30). The other jurisdictions with unattractive fifth quintile scores on this factor are Canada's Northwest Territories, Ecuador, Papua New Guinea, and South Sudan. Clearly, the land claims issue continues to be of major concern in the Northwest Territories—with the second worst score. The Yukon—which was tied with the Northwest Territories for the worst score on this question last year—has improved to the middle of the third quintile.

British Columbia's score on this question fell into the unattractive fourth quintile this year joining Alaska, Western Australia, Victoria, New South Wales, Queensland, Peru, Cyprus, Bolivia, East Timor, Timor Gap (JPDA), and Bangladesh.

## Duplication and inconsistency of regulations

Somaliland, Uzbekistan, Iran, Venezuela, and Ukraine all have poor fifth quintile scores this year on the question pertaining to regulatory duplication and inconsistency (figure 33). Seventeen jurisdictions including Quebec, three Russia jurisdictions (Other, Eastern Siberia, and Offshore—Sakhalin), four Argentine provinces (Santa Cruz, Tierra del Fuego, Salta, and Chubut), as well as India, Uganda, Iraq, and Indonesia have undesirable fourth quintile scores.

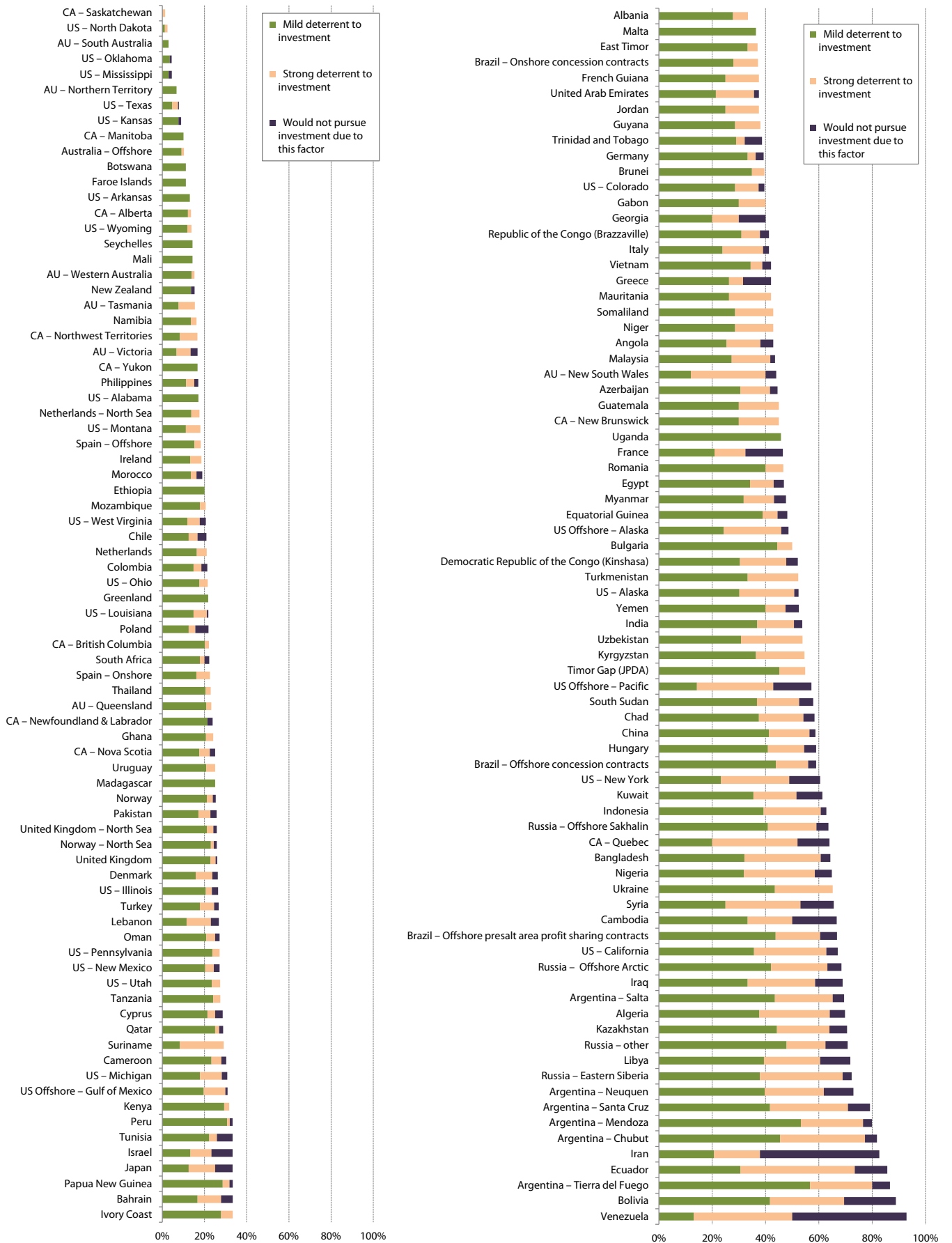
Jurisdictions with no negative responses on this issue this year are Denmark, Faroe Islands, Georgia, Malta, and Netherlands. Twenty-nine jurisdictions have first quintile scores on the regulatory duplication question. Remarkably, 11 of those jurisdictions are in the Canadian, US, and Australian federations where one might expect duplication and inconsistency between federal and state/provincial laws and regulations to be a significant obstacle to investment.

## Legal system fairness and transparency

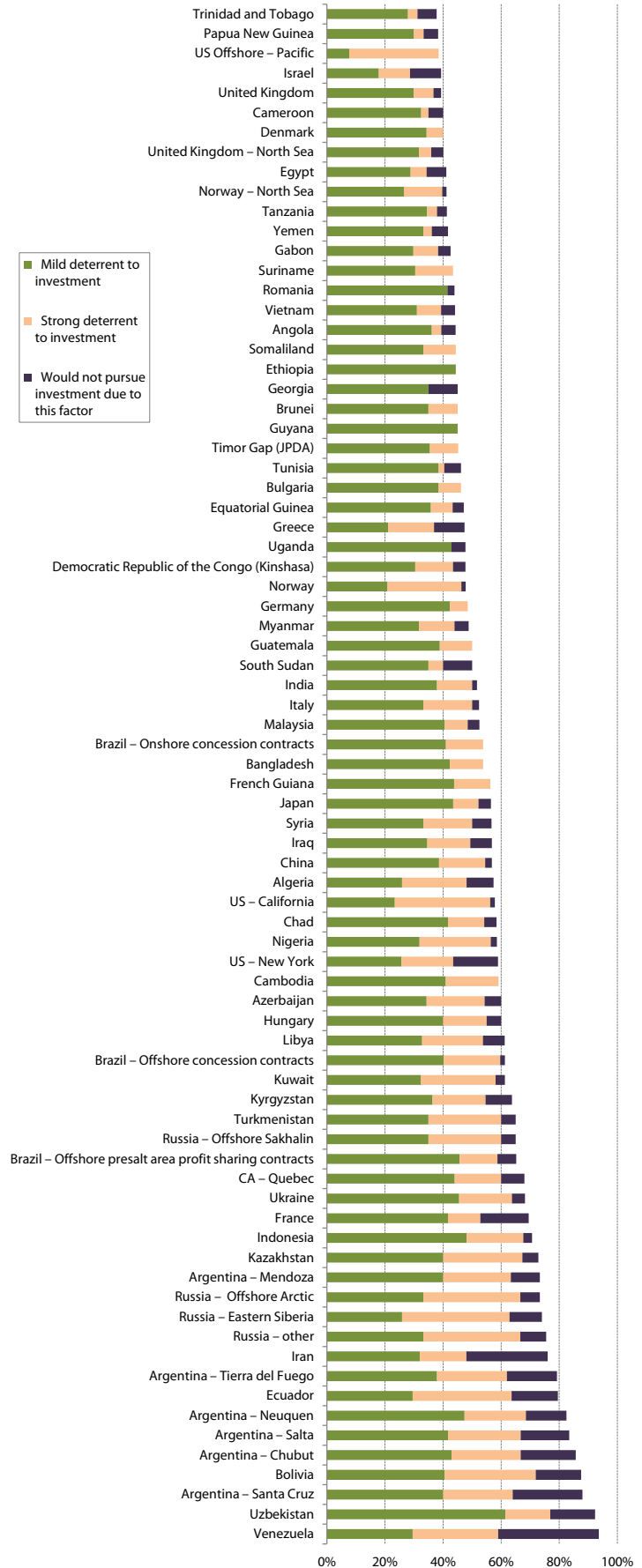
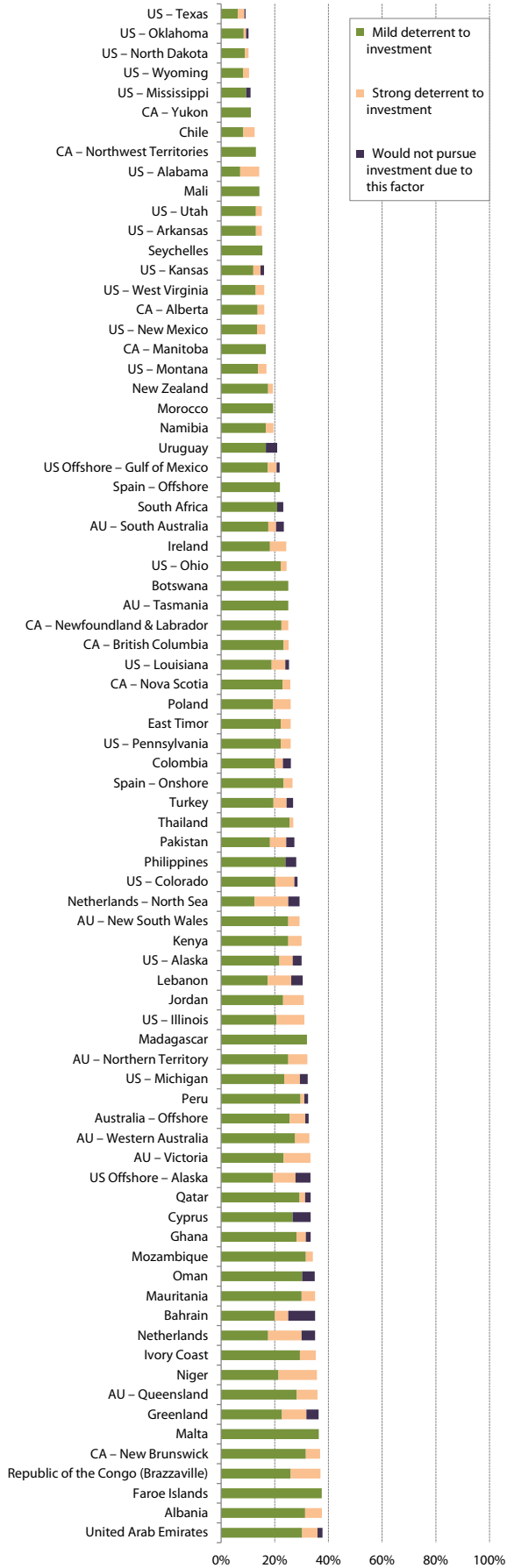
A total of 31 jurisdictions have unattractive fifth quintile scores on this issue (see figure 34). Survey respondents indicated that legal system fairness is of major concern in Ukraine, Uzbekistan, Russia (Eastern Siberia and Offshore Arctic), Kyrgyzstan, Chad, Niger, Republic of Congo (Brazzaville), Somaliland, and Argentina—Salta. Other jurisdictions among the group of 31 with most unattractive fifth quintile scores on the legal system fairness and transparency question are four Argentine provinces (Mendoza, Tierra del Fuego, Neuquen, and Chubut), Ecuador, South Sudan, Libya, Russia—Other, Venezuela, Iraq, Iran, Equatorial Guinea, and Nigeria.

A fair and stable legal system is essential for the development of the upstream oil and gas industry. Oil and gas explorers and developers often spend years investing in exploration before realizing any return on their investment. They need to be certain that if they discover and develop resources in accordance with the existing laws and regulations, they will benefit more or less as planned, subject, of course, to market conditions.

# Figure 19: Fiscal terms

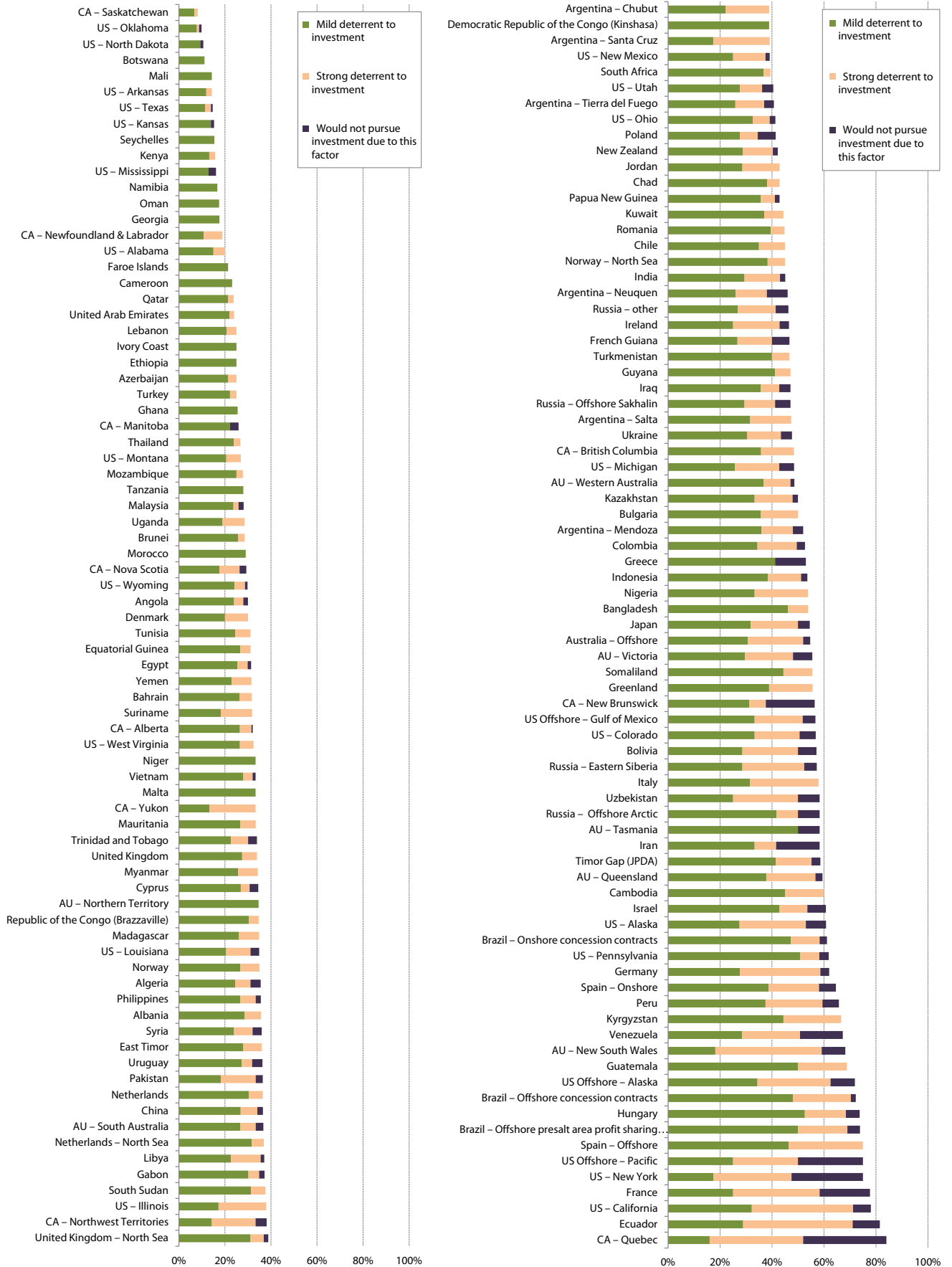


# Figure 20: Taxation in general

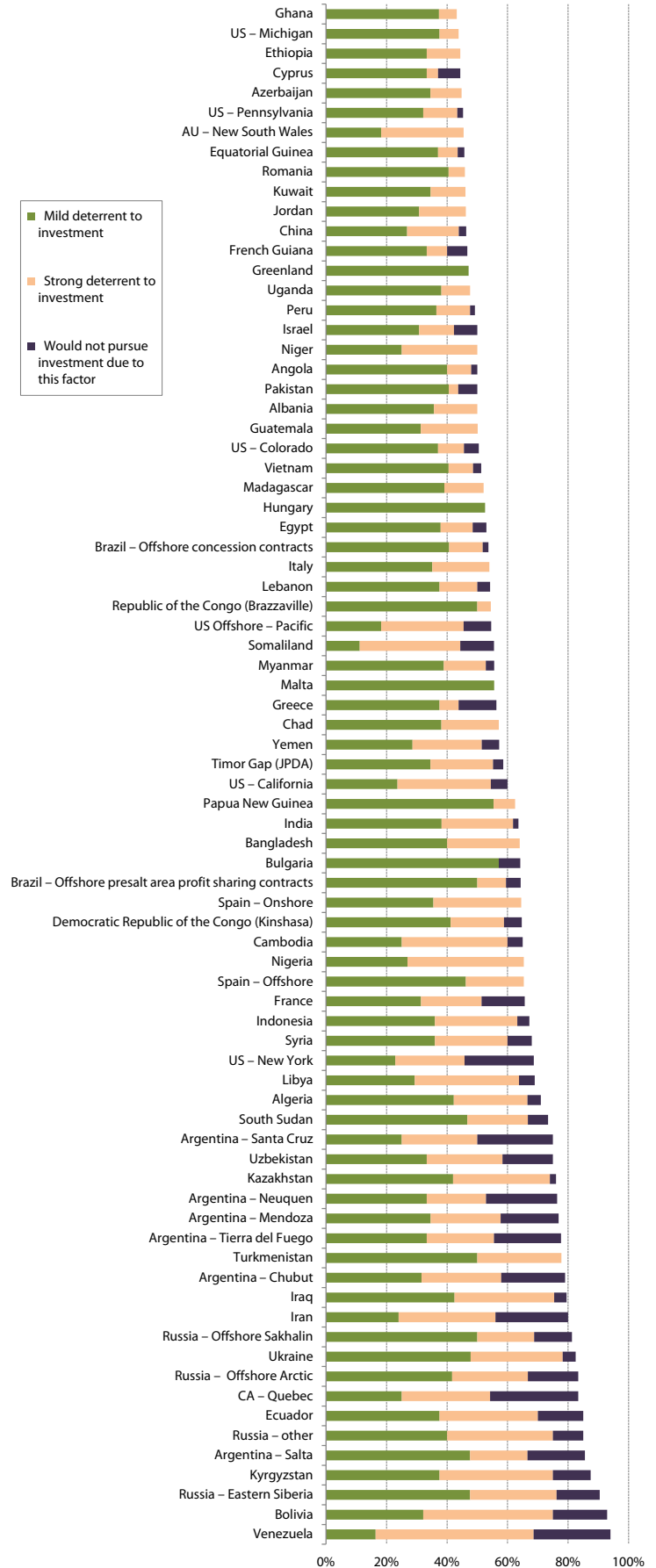
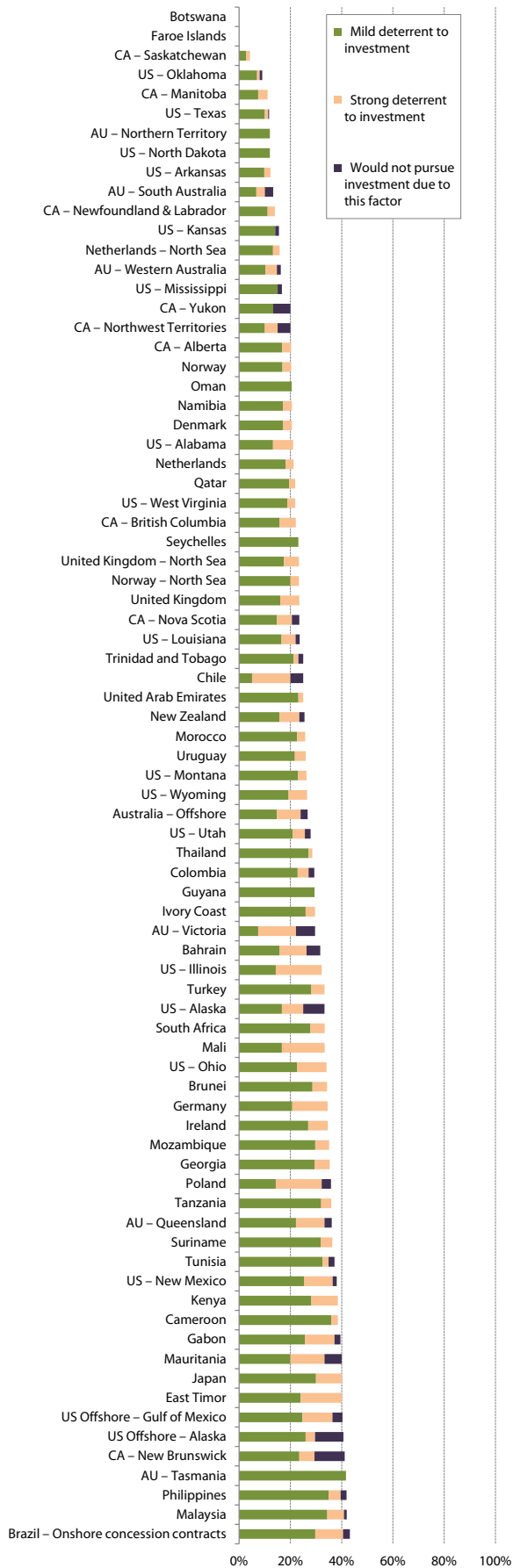




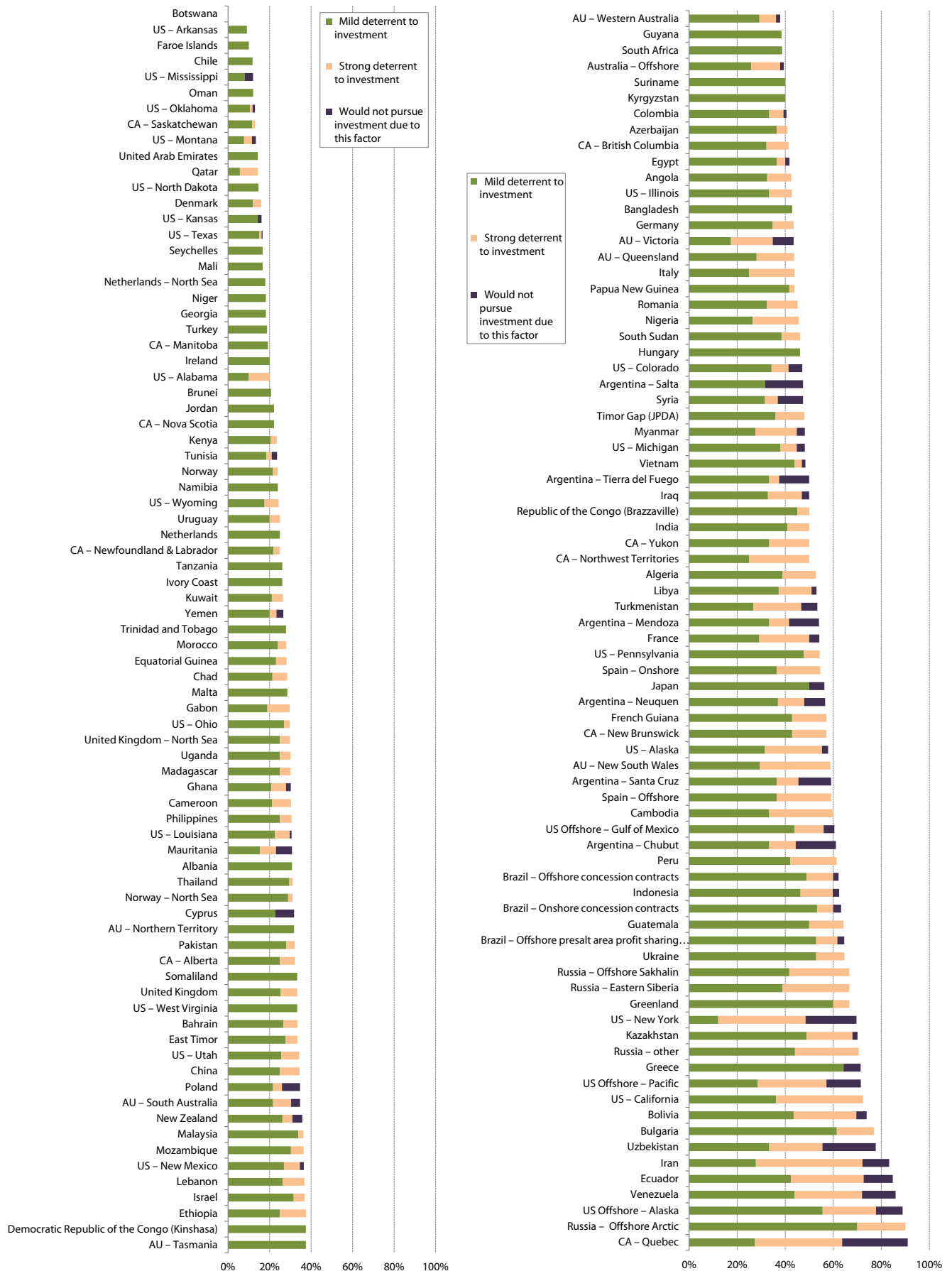
# Figure 21: Environmental regulations



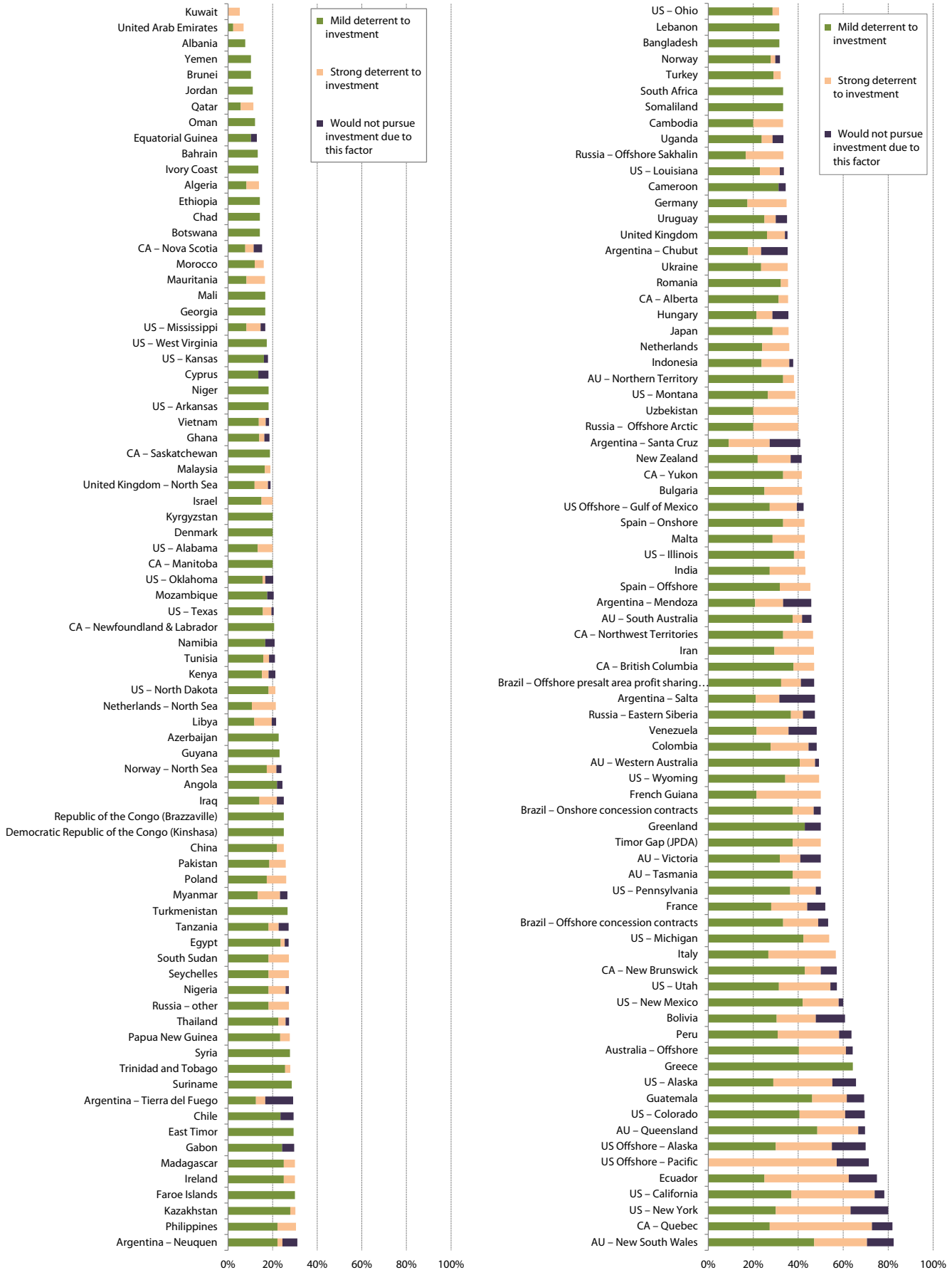
**Figure 22: Uncertainty concerning the administration, interpretation and enforcement of regulations**



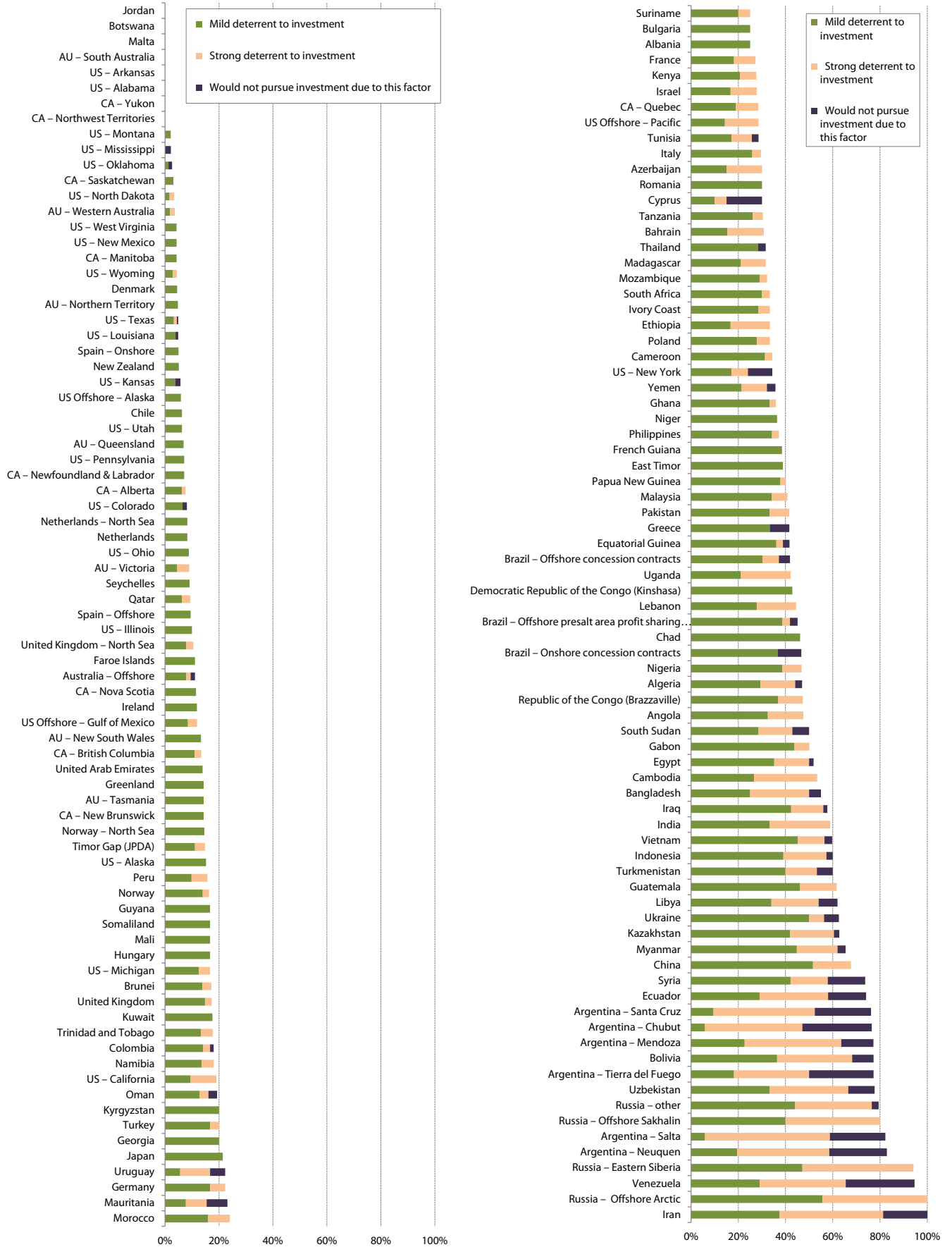
# Figure 23: Cost of regulatory compliance



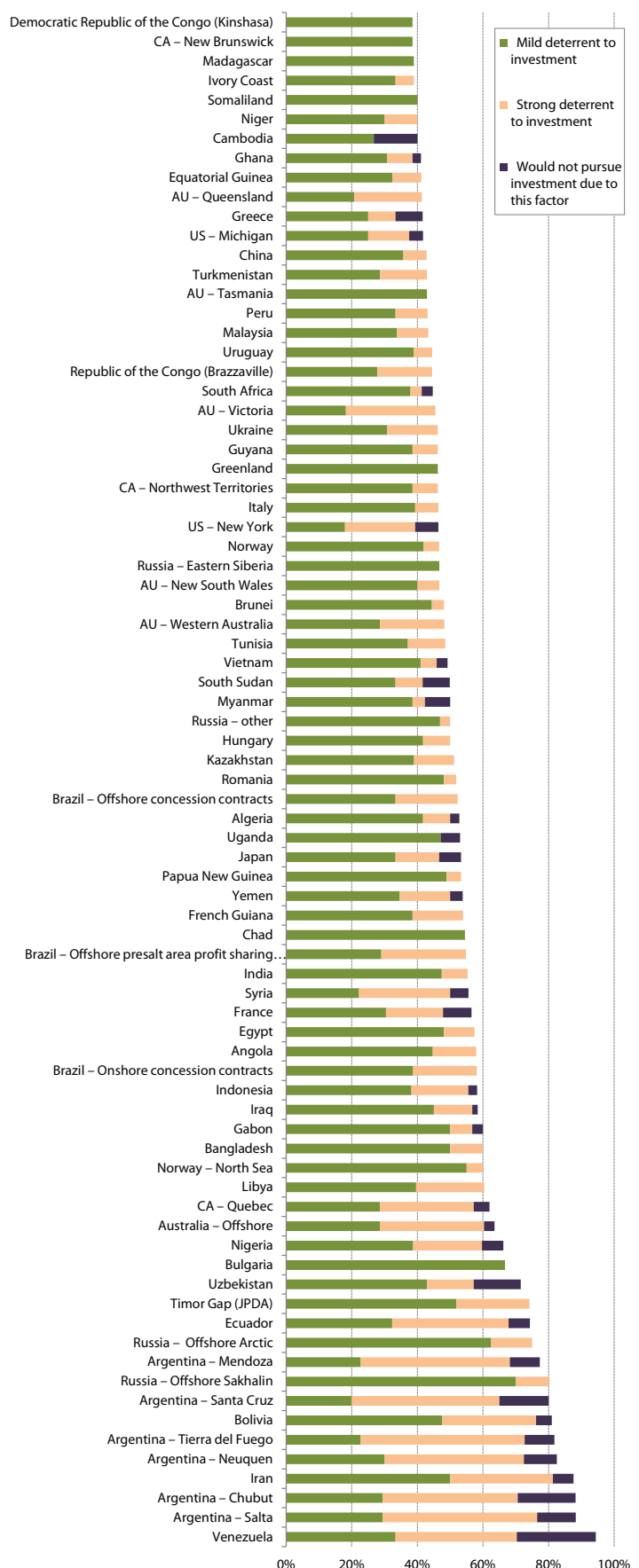
**Figure 24: Uncertainty regarding protected areas**



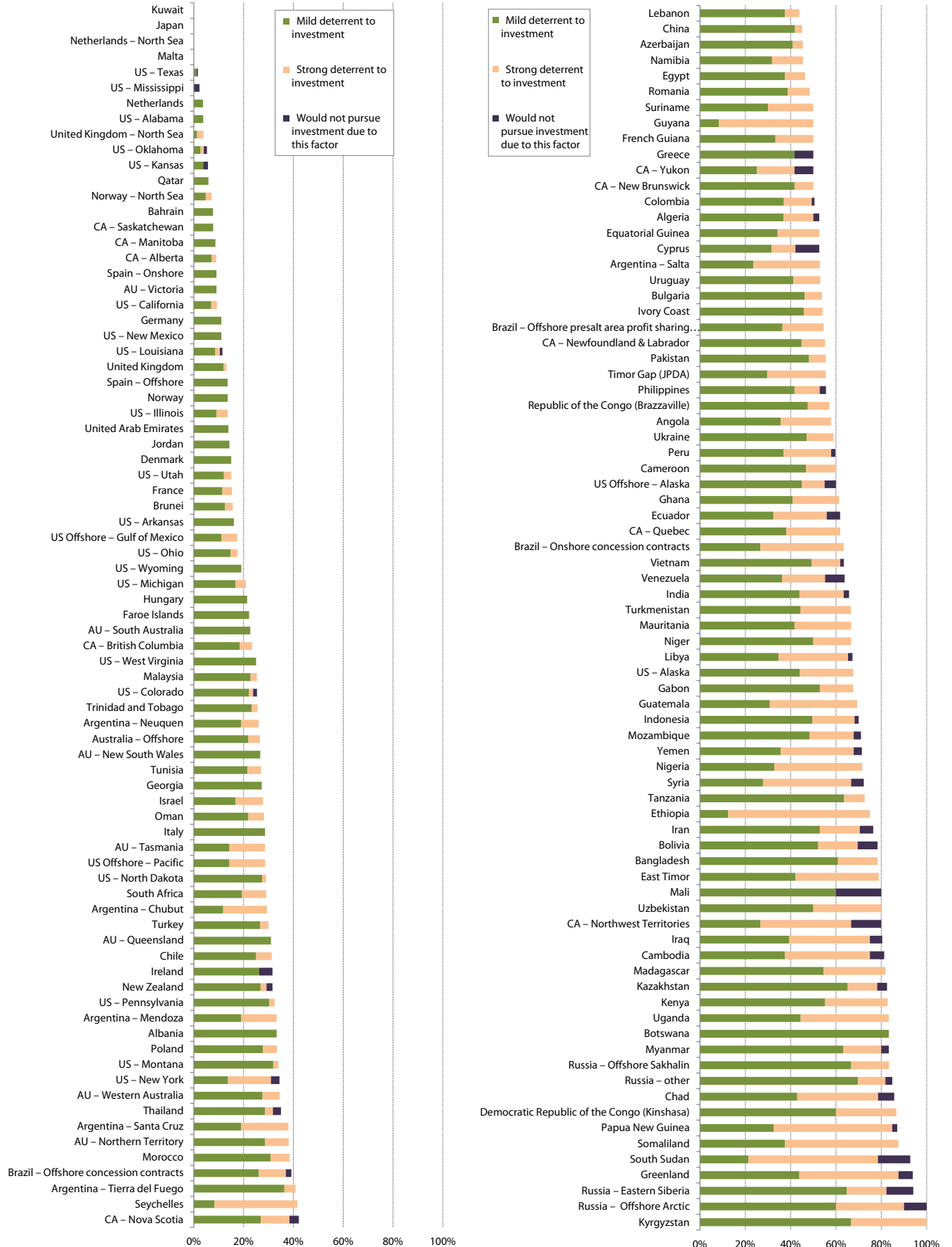
**Figure 25: Trade barriers**



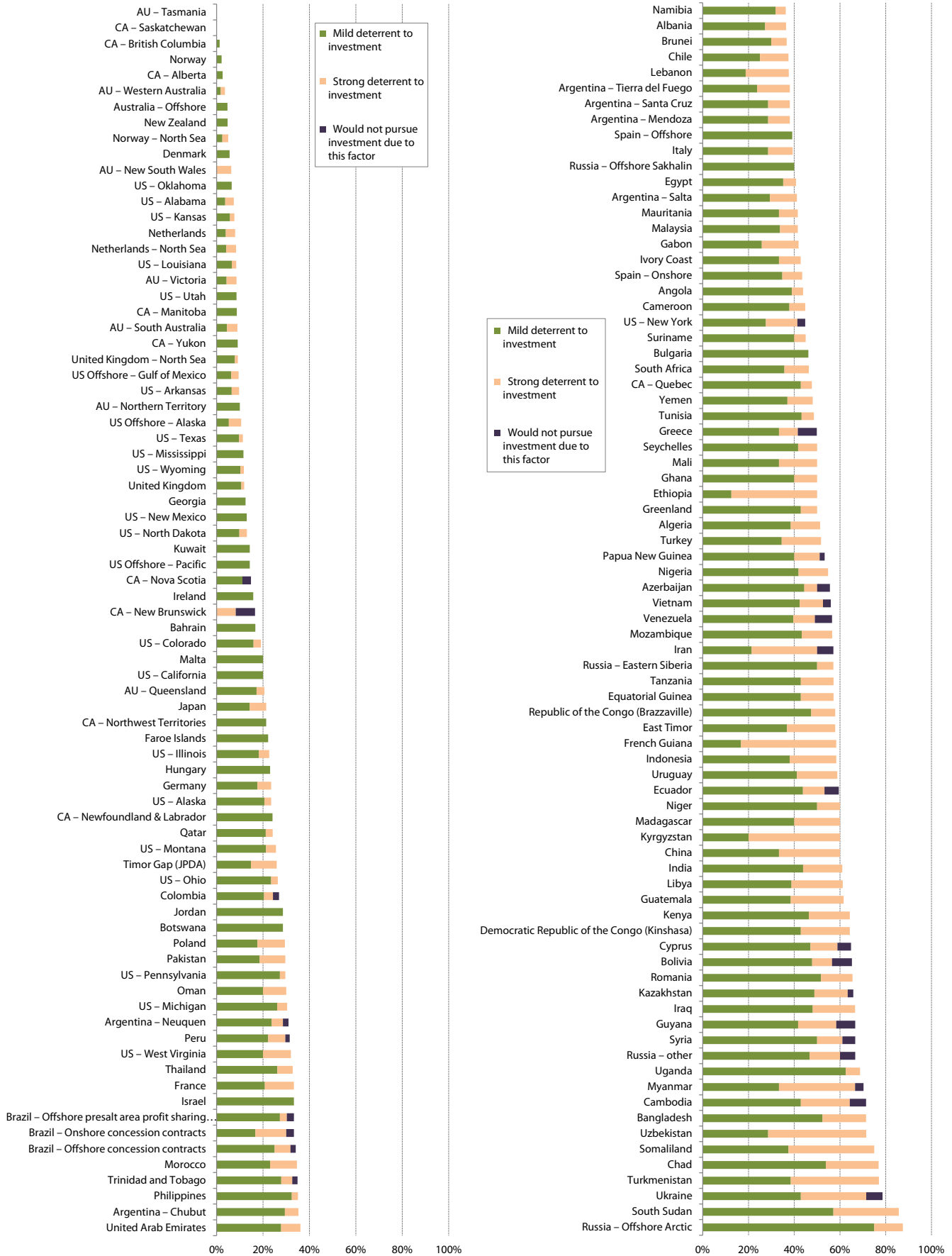
**Figure 26: Labor regulations and employment agreements**



**Figure 27: Quality of infrastructure**

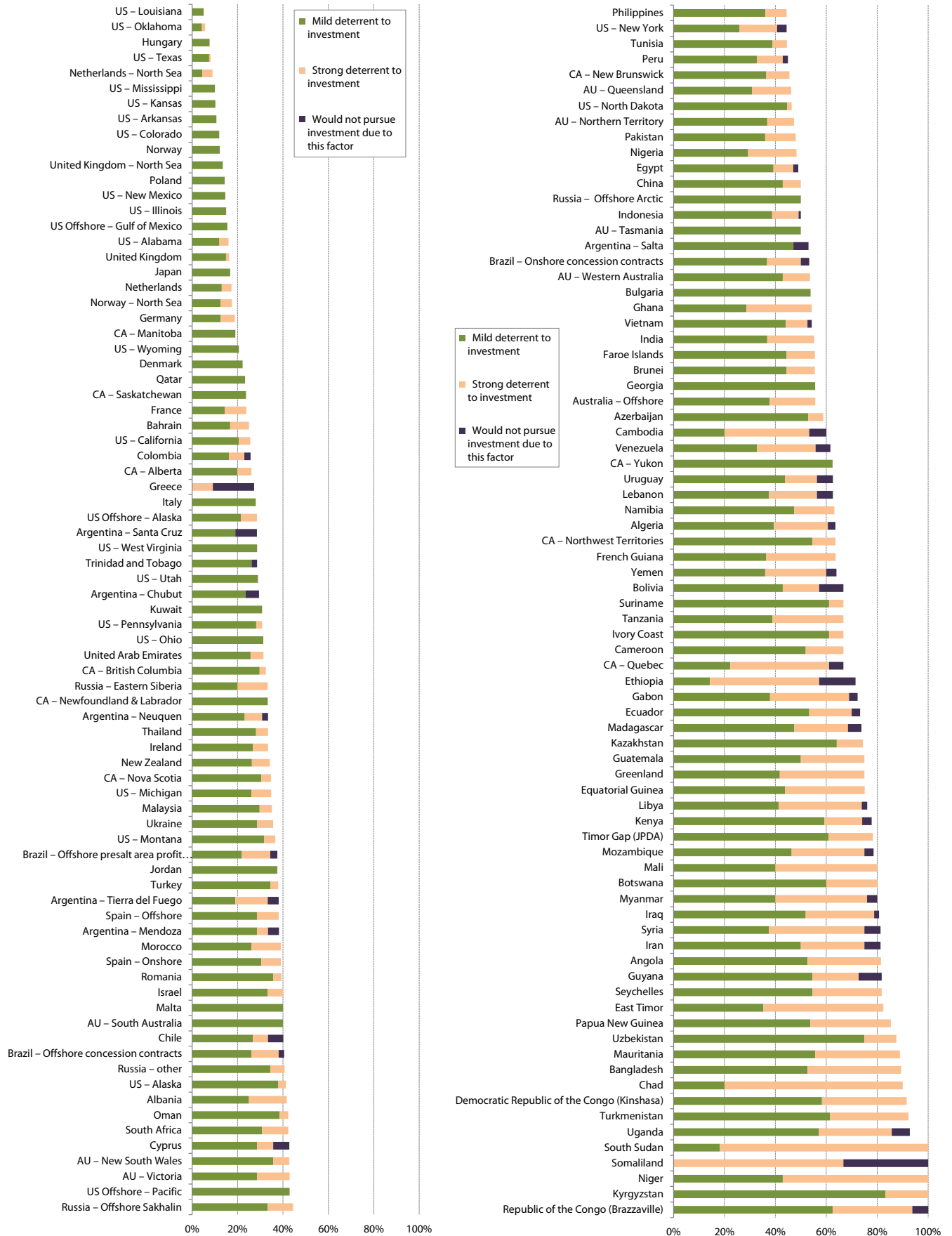


**Figure 28: Geological database**

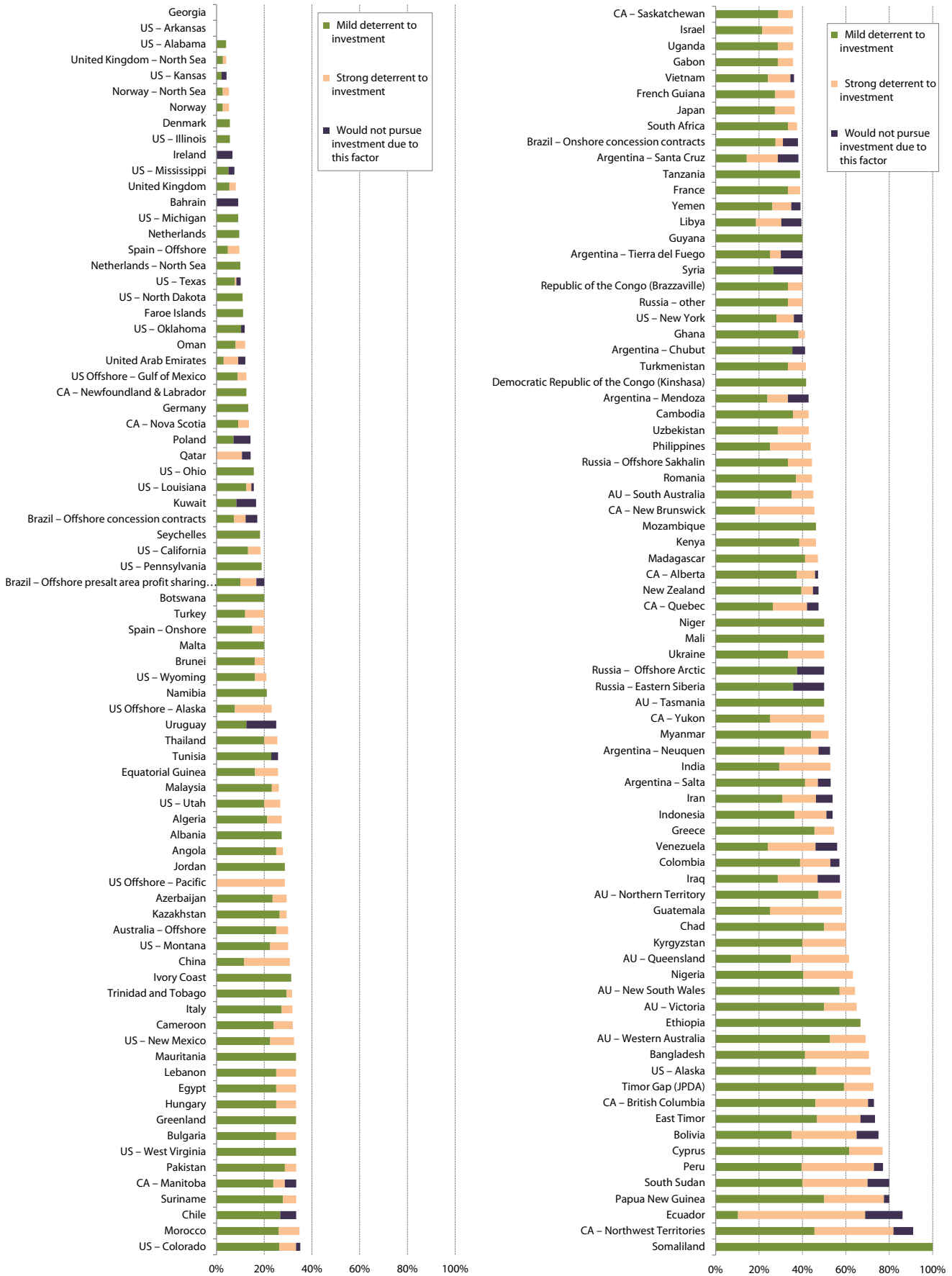




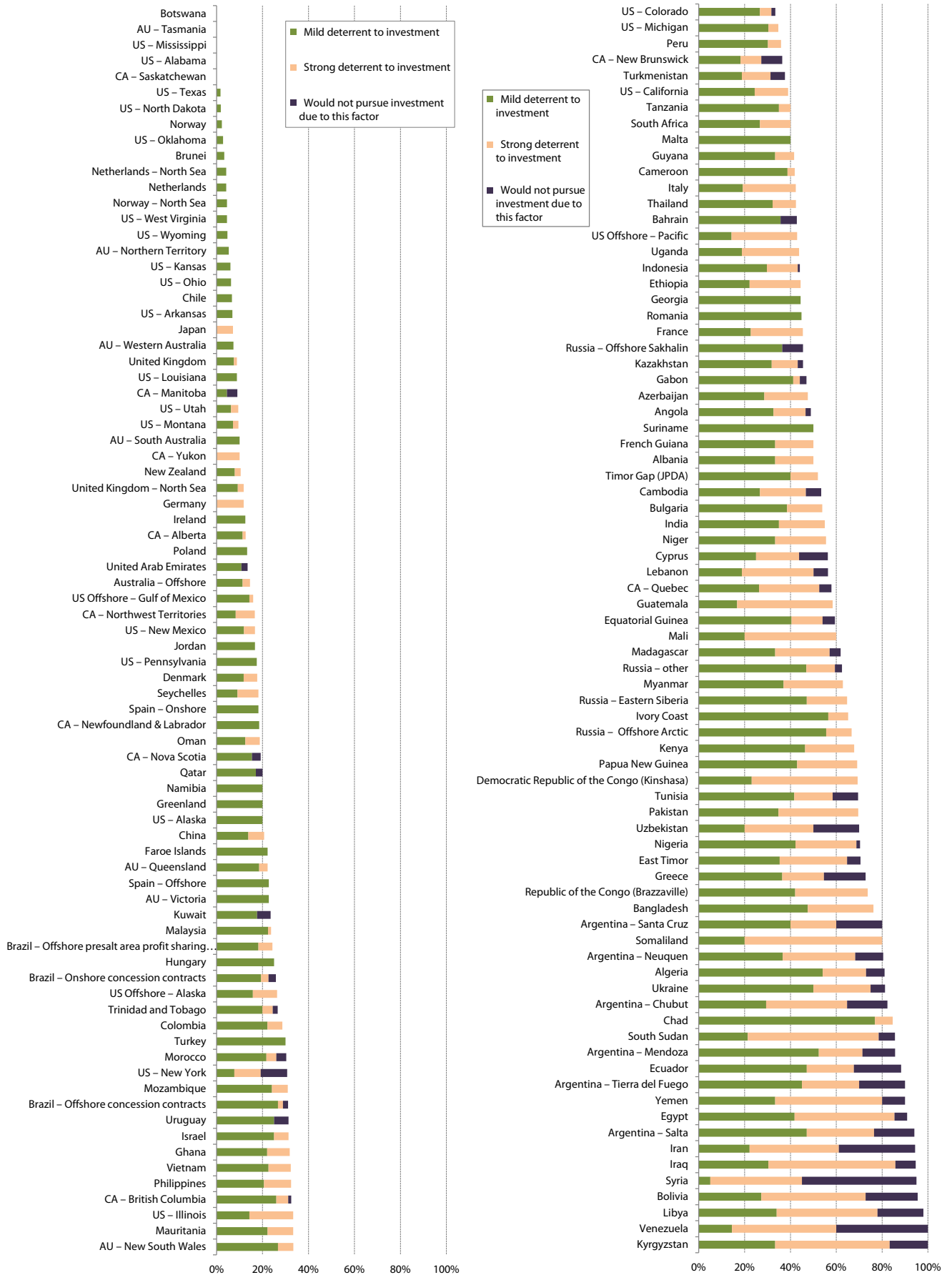
# Figure 29: Labor availability



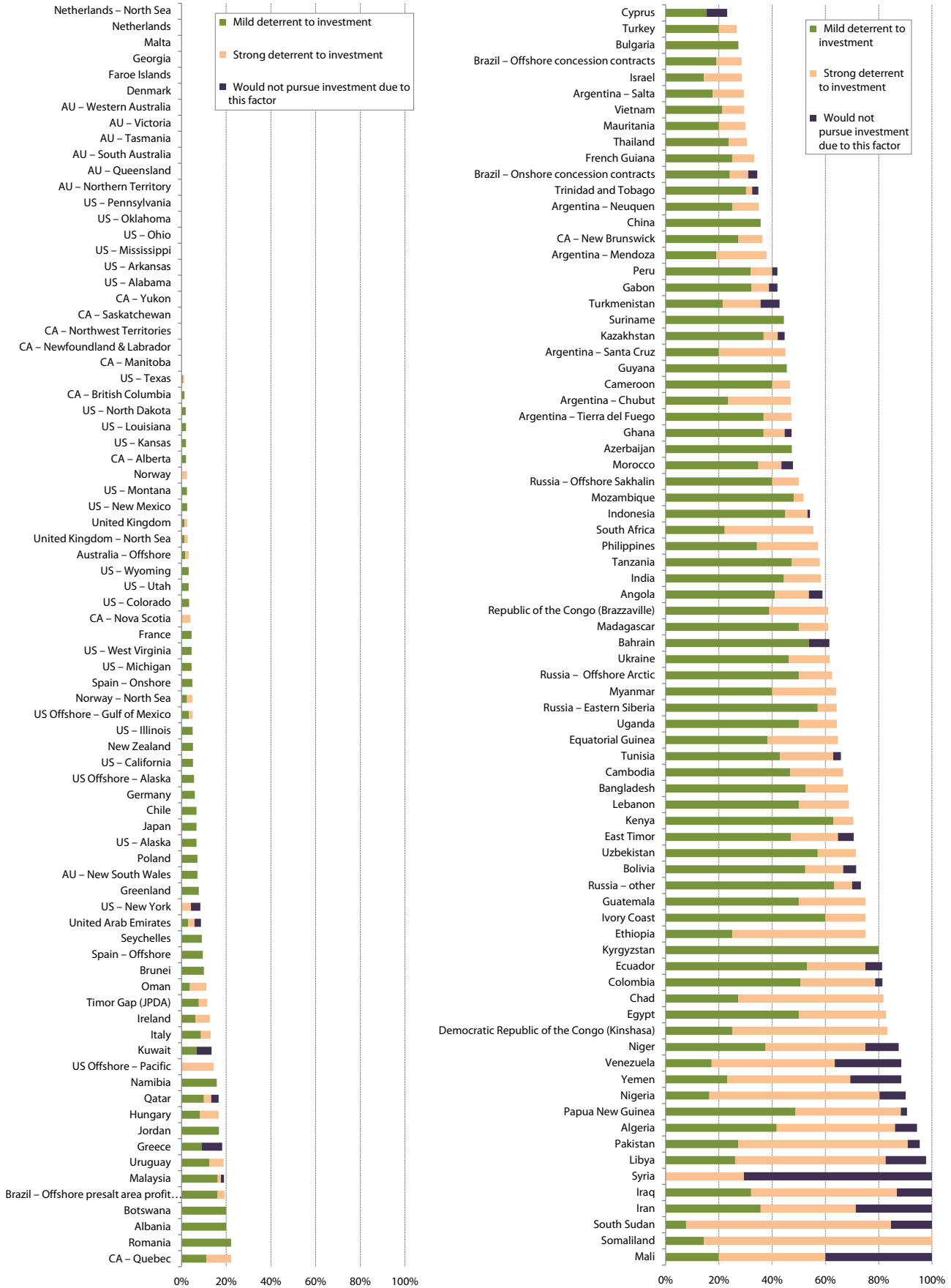
# Figure 30: Disputed land claims



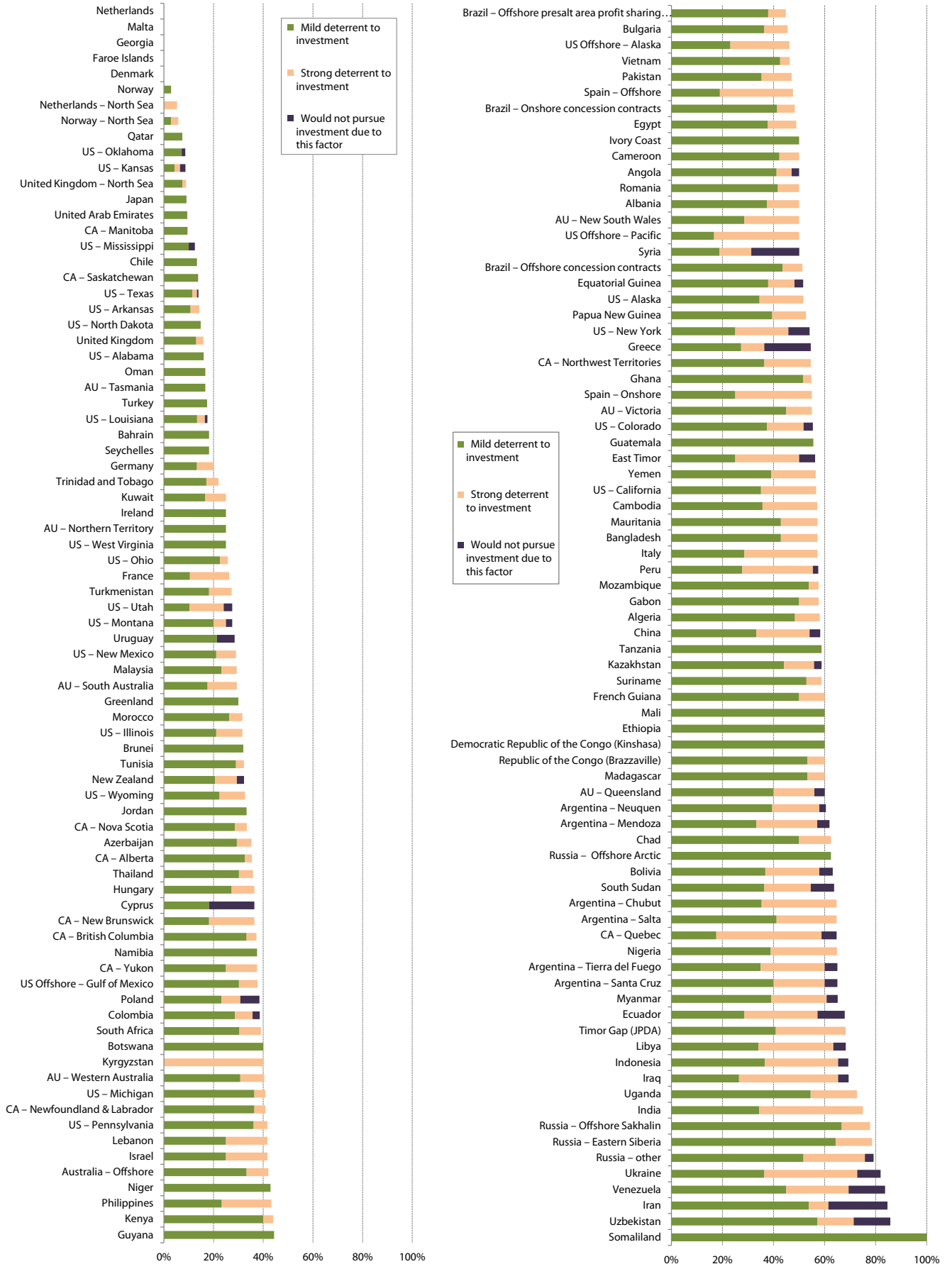
# Figure 31: Political stability



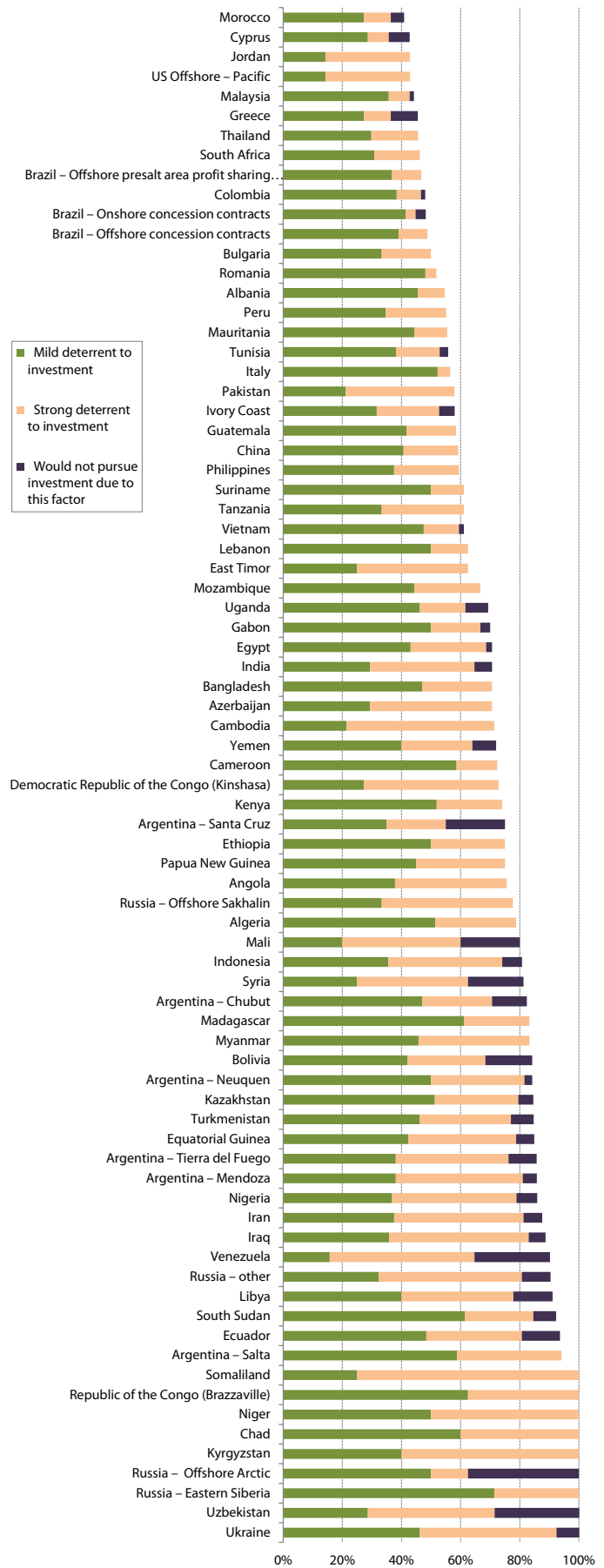
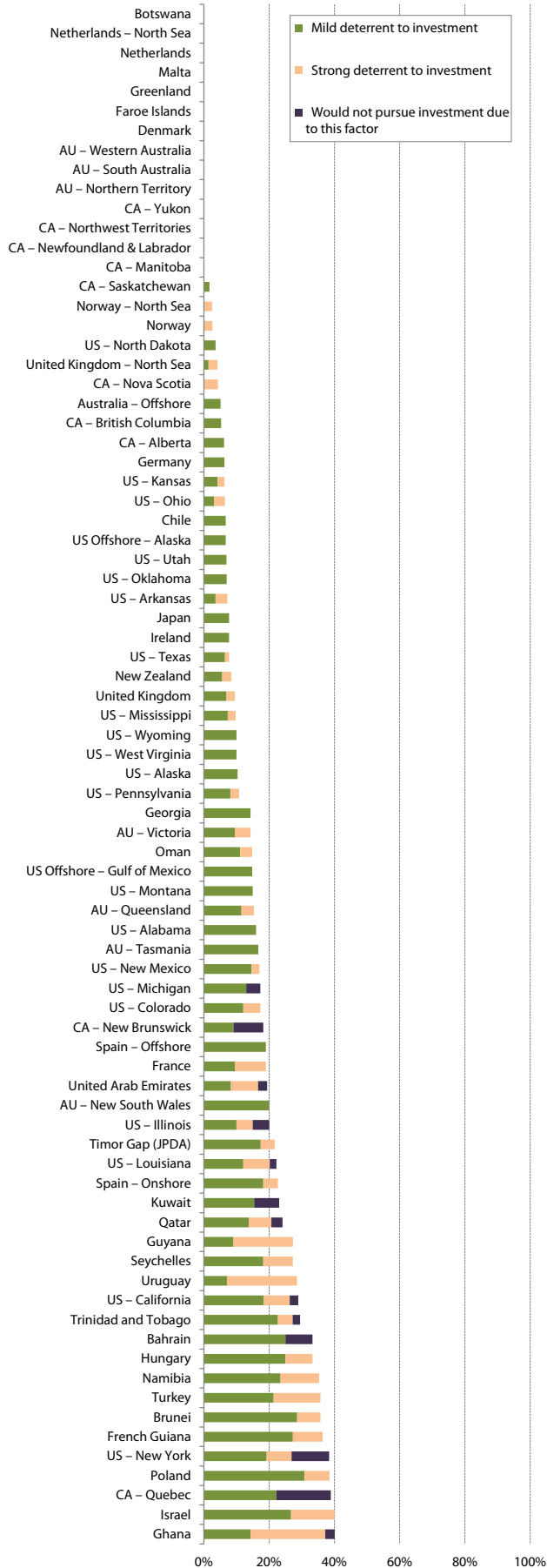
**Figure 32: Security**



# Figure 33: Regulatory duplication



### Figure 34: Legal system processes



## Compliments received

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“Good luck with the survey!”

“I hope your survey will be used in a way that will help the private companies in America that struggle every day to stay in business, which ironically helps many of the very people that are attempting to put the oil and gas workers out of business.....”

“Congratulations! This survey is very useful.”

“The survey is comprehensive and considers all factors influencing investment climate.”

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## Appendix 1: Proved Oil and Natural Gas Reserves

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For about 40 countries proved reserves data to year-end 2011 for oil and/or natural gas were taken from British Petroleum's *Statistical Review of World Energy* (British Petroleum, 2012). For the remaining countries, generally all with smaller reserves, the data were obtained from the US Department of Energy's Energy Information Administration's online "Statistics" site (US Department of Energy, 2013a). Data for reserves of oil (billions of barrels) and gas (trillions of cubic feet) were obtained separately. The gas reserves data were then converted to billions of barrels of oil equivalent and the resulting quantities combined with the oil reserves data to provide estimates of each jurisdiction's total proved reserves of oil and gas in billions of barrels of oil equivalent. For countries that were broken down into states, provinces, territories, offshore regions, and/or geographical regions for the purpose of the survey, the "national" reserves data were allocated according to the best information available.

For the United States, state and offshore region reserves data as at year-end 2010 were available online (US Department of Energy, 2013b).<sup>14</sup> The separation of proved reserves between Alaska and the Alaska—US Offshore regions was guided by information provided by State of Alaska officials. Up-to-date proved oil and gas reserves data for Canada's provinces and territories were provided directly to the Fraser Institute by the National Energy Board in response to a special request. The Board's estimates of proved Canadian oil and gas reserves were used instead of the estimates provided in the *Statistical Review of World Energy*.

Because the United Kingdom only publishes data for "P2" (proved plus probable) reserves, we were advised by a UK government official to allocate the estimates of that country's total proved (i.e., "P1") oil and gas reserves as provided in the *Statistical Review of World Energy* between the North Sea and "other" offshore regions (West of Shetland Islands and the Irish Sea) according to the UK's P2 reserves data. The UK has no significant onshore oil and gas reserves. While there is substantial discussion and debate regarding possible production of natural gas from onshore (and, possibly, offshore) shale formations, as yet no reserve estimates are available (even on a P2 basis).

The breakdown of Norwegian reserves as between Norway and Norway—North Sea was based on an Excel file produced by the Norwegian Petroleum Directorate which shows Norway's reserves of oil and gas in each of the North, Norwegian, and Barents Seas. (Norway has no onshore reserves). For the Netherlands, the split between onshore and offshore reserves was based on reserves data for the country's onshore and the continental shelf (North Sea) regions contained in the *Natural Resources and Geothermal Energy in the Netherlands* 2011 annual review (Netherlands, 2012).

Geoscience Australia kindly provided guidance with respect to the allocation of Australian reserves by state, the Northern Territory, and the Australia—Offshore region based on data for P2 reserves because, like the UK, Australia does not publish data for P1 reserves. Oil and gas reserves

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<sup>14</sup> Year-end 2011 oil and gas reserves data by state were not yet available.

estimates for the Australia—East Timor JPDA, (also in P2 terms) were graciously provided by Mr. G. Bethune, CEO of the Australian consulting firm Energy Quest.

Estimates of proved reserves of oil and gas as of December 31, 2011, for the six Argentine provinces included in the survey were obtained from an Excel file generated by Argentina’s Department of Energy. Because no profit sharing contracts are in place as yet with respect to the Brazilian offshore, no oil and gas reserves were allocated to Brazil—Offshore PSC Contracts. Brazil’s proved oil and gas reserves were therefore allocated between Brazil—Onshore and Brazil—Offshore Concession Contracts according to data for year-end 2011 provided on the Agencia Nacional do Petroleo’s (National Petroleum Agency) Gas Natural e Biocombustiveis’ website. For Spain, the allocation of proved oil and gas reserves as between the onshore and offshore categories was based on information kindly provided by Mr. Jorge Navarro of Compania Espanola de Petroleos, S.A.U. (CEPSA) in Spain.

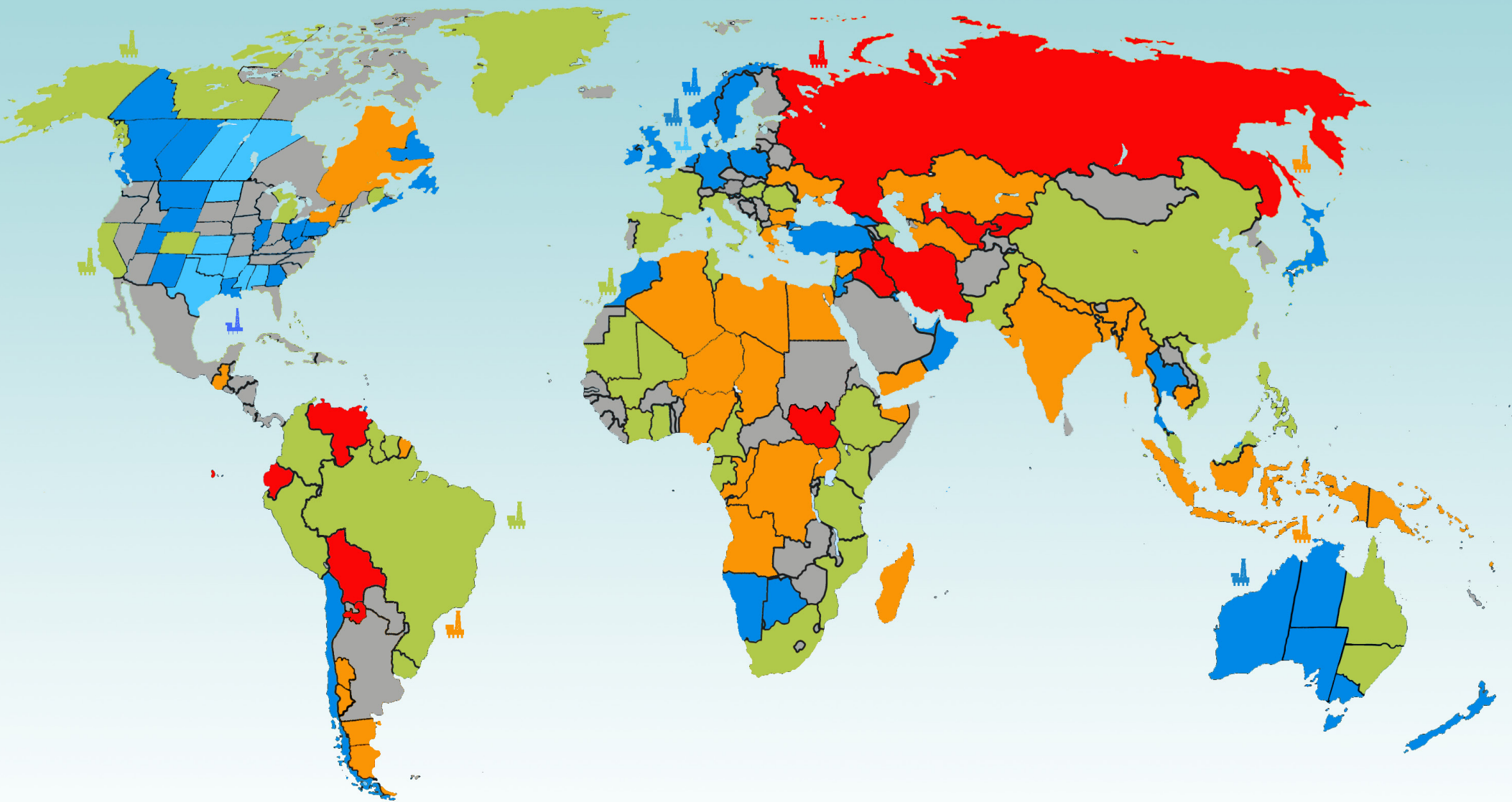
The most challenging allocation task was in the case of the 4 Russian regions in the survey: Eastern Siberia, Sakhalin Island, Offshore Arctic, and Other. We were unable to find any definitive information on proved oil and gas reserves for these regions in the public domain. In fact, one Russian expert on oil and gas resources informed us that it was unlikely that any institution in Russia could provide us with the information we required. However, some very useful information, especially with regard to the regional allocation of Russian oil resources, is contained in a 2012 article by Yulia Grama. The allocations for Russia were based on insights provided in that paper and in the US Energy Information Administration’s most recent country brief on Russia (Gramma, 2012; US Department of Energy, 2013c).

## Appendix 2: Maps of jurisdictions

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The following pages contain maps 1 through 8 . These maps illustrate the relative attractiveness of jurisdictions around the globe for investment based on scores from the All-Inclusive Composite Index. The scores, from 0 to 100, have been divided equally into five ranges (quintiles). Those in the 0 to 19.9 range (first quintile) are rated as most attractive for investment while jurisdictions with scores ranging from 80.0 to 100 (fifth quintile) are the least attractive.

# MAP 1: 2013 GLOBAL INVESTMENT CLIMATE for petroleum upstream development

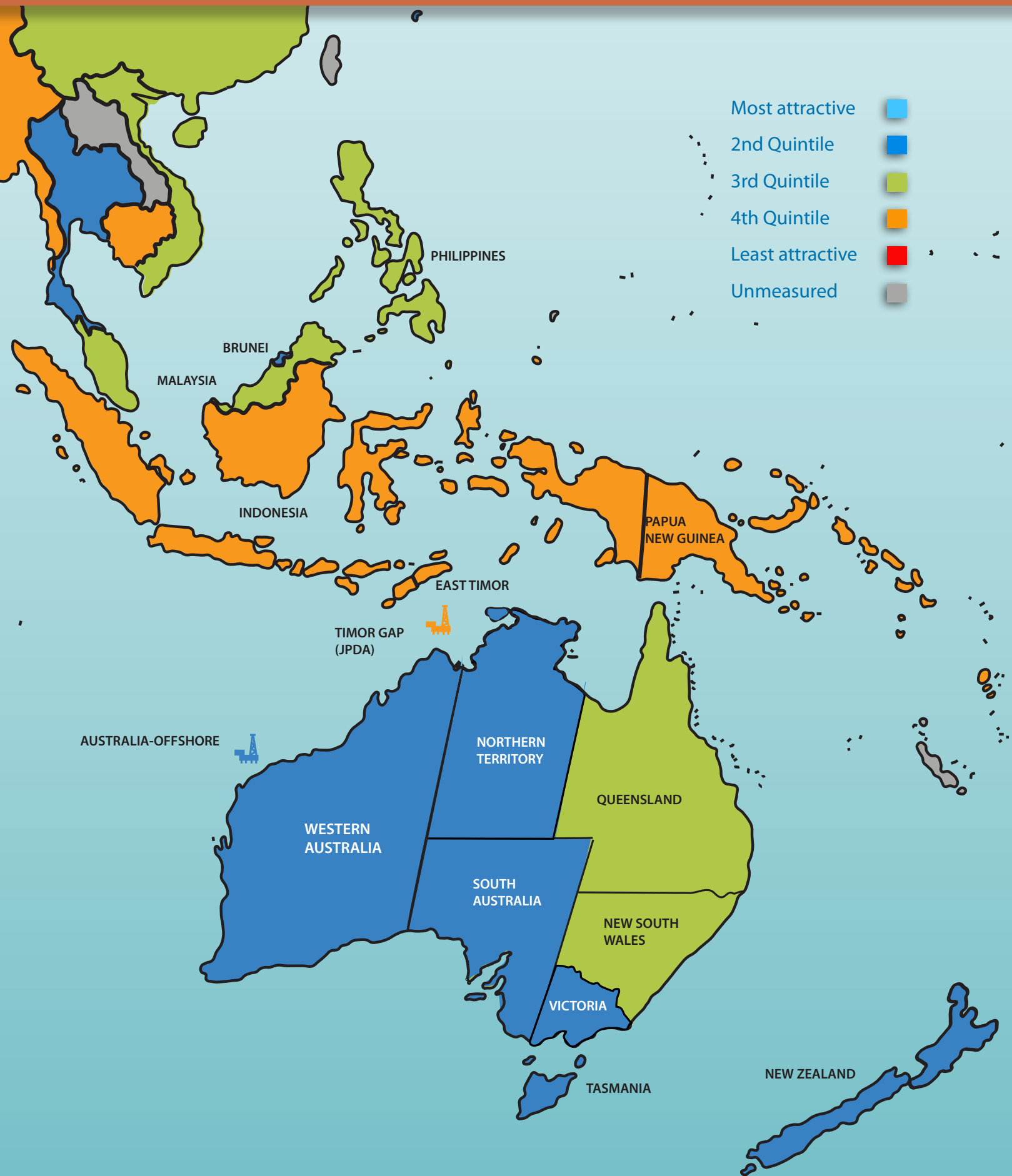


Most attractive ■ 2nd Quintile ■ 3rd Quintile ■ 4th Quintile ■ Least attractive ■ Unmeasured ■



# MAP 3: OCEANIA

2013



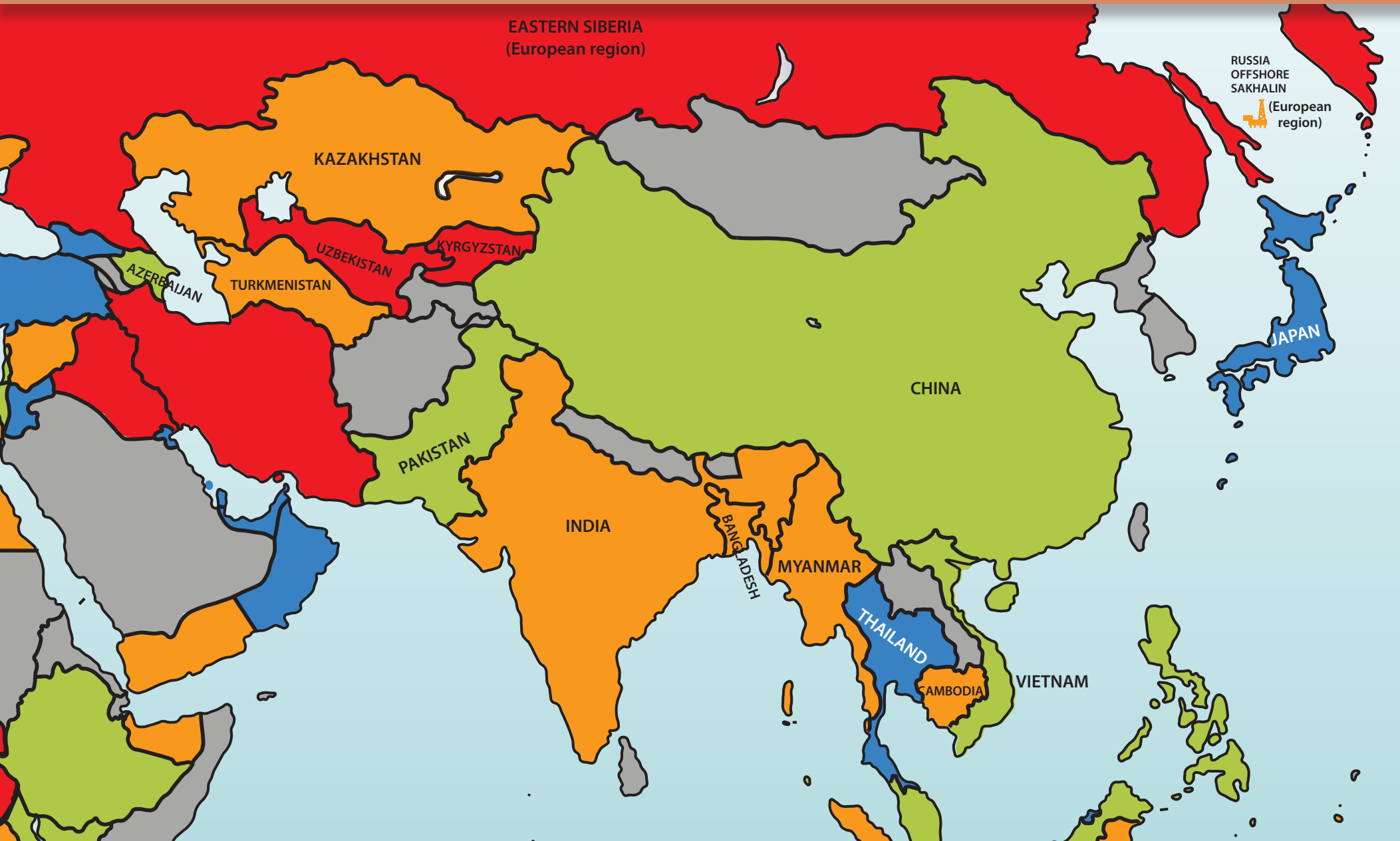


Most attractive ■ 2nd Quintile ■ 3rd Quintile ■ 4th Quintile ■ Least attractive ■ Unmeasured ■

\*Eastern Siberia and Sakhalin jurisdictions, which belong to the European region, are located on the Asia map (Fig. 15).

# MAP 5: ASIA

2013




Most attractive 

2nd Quintile 

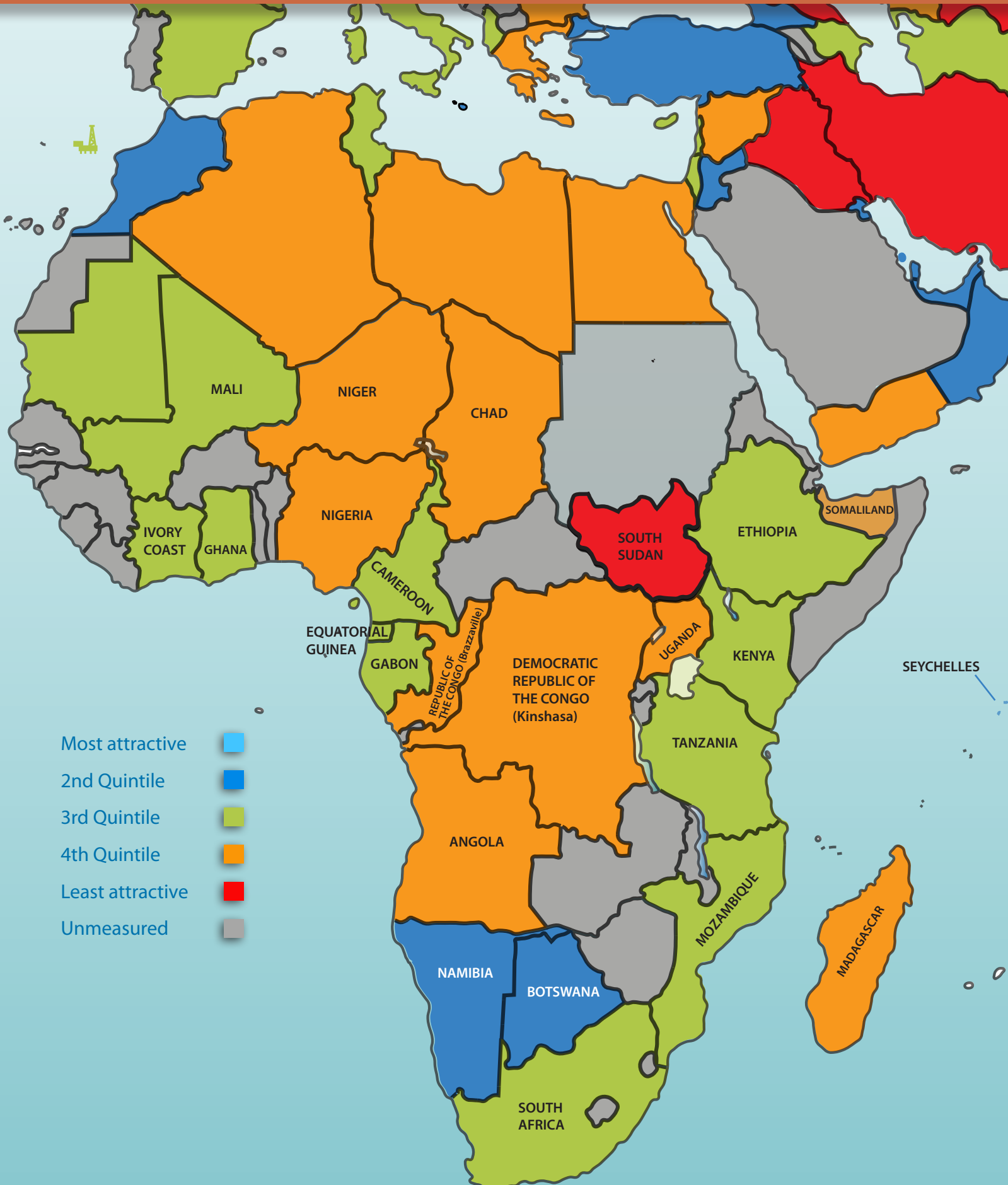
3rd Quintile 

4th Quintile 

Least attractive 

Unmeasured 





# MAP 7: MIDDLE EAST and NORTH AFRICA

2013



Most attractive



2nd Quintile



3rd Quintile



4th Quintile



Least attractive



Unmeasured



# MAP 8: LATIN AMERICA & CARIBBEAN BASIN

2013



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