



Fiscal Affairs Department

Canada's Carbon Price Floor

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National Tax Association, Spring Meetings, Washington DC,
May 18-19, 2017



2015 Paris Agreement

Country	Mitigation pledge: Reduce...	Country	Mitigation pledge: Reduce...
Argentina	GHGs 15% below BAU in 2030	Japan	GHGs 25% below 2005 by 2030
Australia	GHGs 26-28% below 2005 by 2030	Korea	GHGs 37% below BAU in 2030
Brazil	GHGs 37% below 2005 by 2025	Mexico	GHGs 25% below BAU in 2030
Canada	GHGs 30% below 2005 by 2030	Russia	GHGs 25-30% below 1990 by 2030
China	CO ₂ /GDP 60-65% below 2005 by 2030	S. Arabia	GHGs 130 million tons below BAU by 2030
France	GHGs 40% below 1990 by 2030	S. Africa	GHGs 398-614 million tons in 2025 and 2030
Germany	GHGs 40% below 1990 by 2030	Turkey	GHGs up to 21% below BAU by 2030
India	GHG/GDP 33-35% below 2005 by 2030	UK	GHGs 40% below 1990 by 2030
Indonesia	GHGs 29% below BAU in 2030	US	GHGs 26-28% below 2005 by 2025
Italy	GHGs 40% below 1990 by 2030	EU	GHGs 40% below 1990 by 2030

► Carbon pricing has key role

Carbon Pricing in Canada

- ▶ Provinces need \$50/ton (US\$40) carbon price floor by 2022
- ▶ Existing pricing schemes
 - ▶ Carbon taxes
 - BC (CAN \$30/ton, introduced 2008), Alberta (\$20, 2017)
 - ▶ Trading systems
 - Ontario (\$18, 2017), Quebec (\$15 floor price, 2008)

Carbon Pricing Around the World

Government	year introduced	Price 2015, US\$/ton CO2	Coverage, % of GHGs	Government	year introduced	Price 2015, US\$/ton CO2	Coverage, % of GHGs
CARBON TAXES				Norway	1991	52	50
Br. Columbia	2008	23	70	Portugal	2015	7	25
Chile	2014	5	42	Sweden	1991	131	42
Japan	2012	3	66	UK	2013	24	25
Mexico	2014	1-4	46	TRADING SYSTEMS			
South Africa	2016	10	80	Alberta	2007	15	45
Switzerland	2008	86	33	California	2012	13	85
In the EU ETS				EU	2005	5	45
Denmark	1992	26	45	Kazakhstan	2013	2	50
Finland	1990	60-65	15	Korea	2015	15	68
France	2014	25	35	N. Zealand	2008	13	52
Iceland	2010	10	50	Quebec	2013	13	85
Ireland	2010	22	40	RGGI	2009	5	21

Source: World Bank Group (2014, 2016).

Outline

- ▶ Rationale for price floors
- ▶ Impact of carbon pricing
- ▶ Monitoring issues

Price vs. Quantity Targets

- ▶ Price targets more cost effective
- ▶ Price certainty needed to mobilize investments
- ▶ Price arrangements accommodate taxes or trading
 - ▶ Latter may need price floor

Price Floors vs. Uniform Prices

- ▶ Flexibility to set higher prices makes sense
 - ▶ If provinces have high fiscal needs or local environmental benefits
 - ▶ If stiffer pricing is more acceptable in one province
- ▶ Tax floor agreements used in other contexts
 - ▶ E.g., VAT, Alcohol, tobacco, energy products in EU
- ▶ Canada is prototype for international price floor agreement

Methodology for Impact Assessment

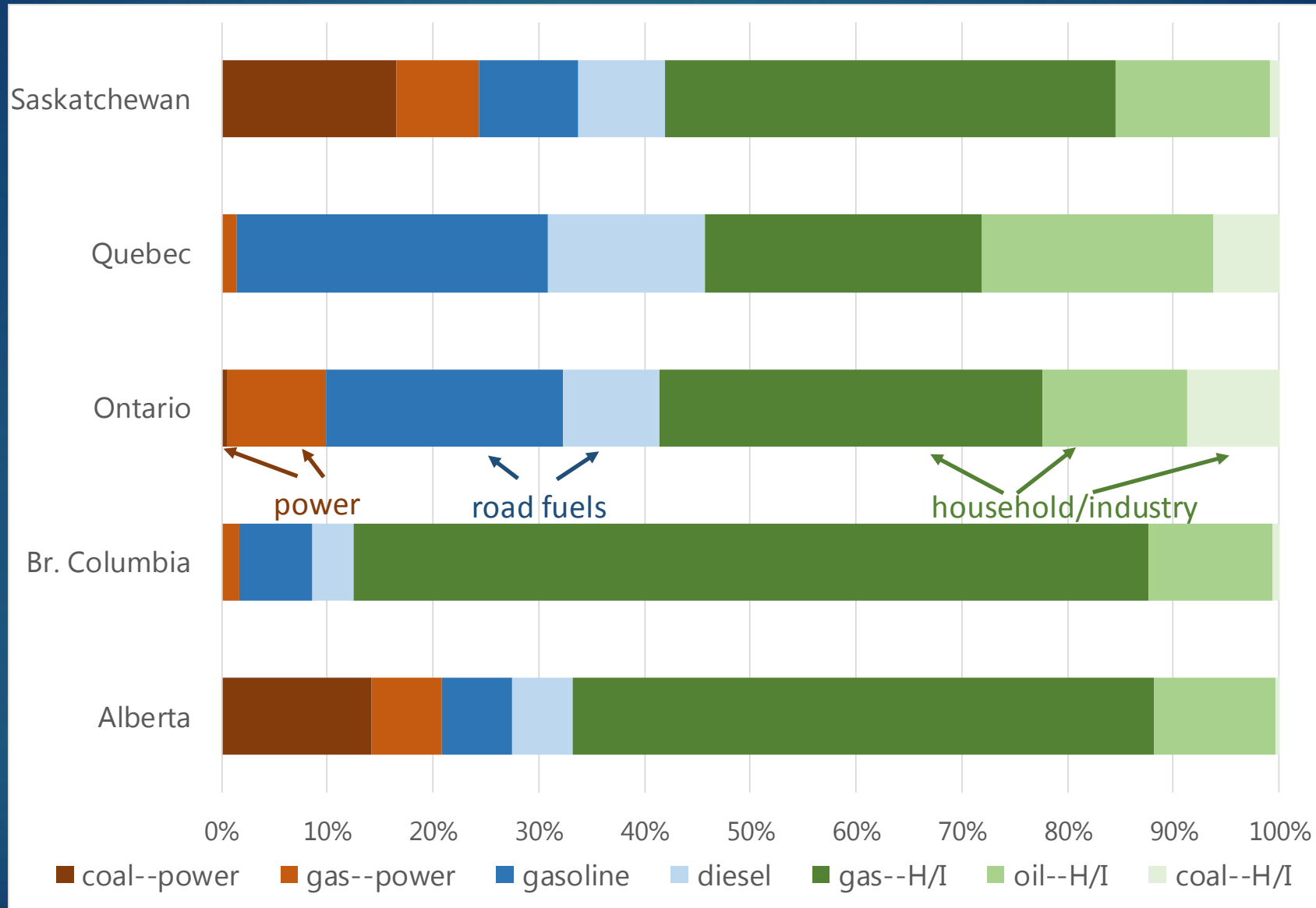
▶ Spreadsheet model

- ▶ Power generation, road transport, households/industry
- ▶ Projections using GDP, income elasts., tech. change, fuel prices
- ▶ Effects of carbon pricing depend on fuel price elasticities
- ▶ Apply to Alberta, BC, Ontario, Quebec, Saskatchewan

▶ Caveats

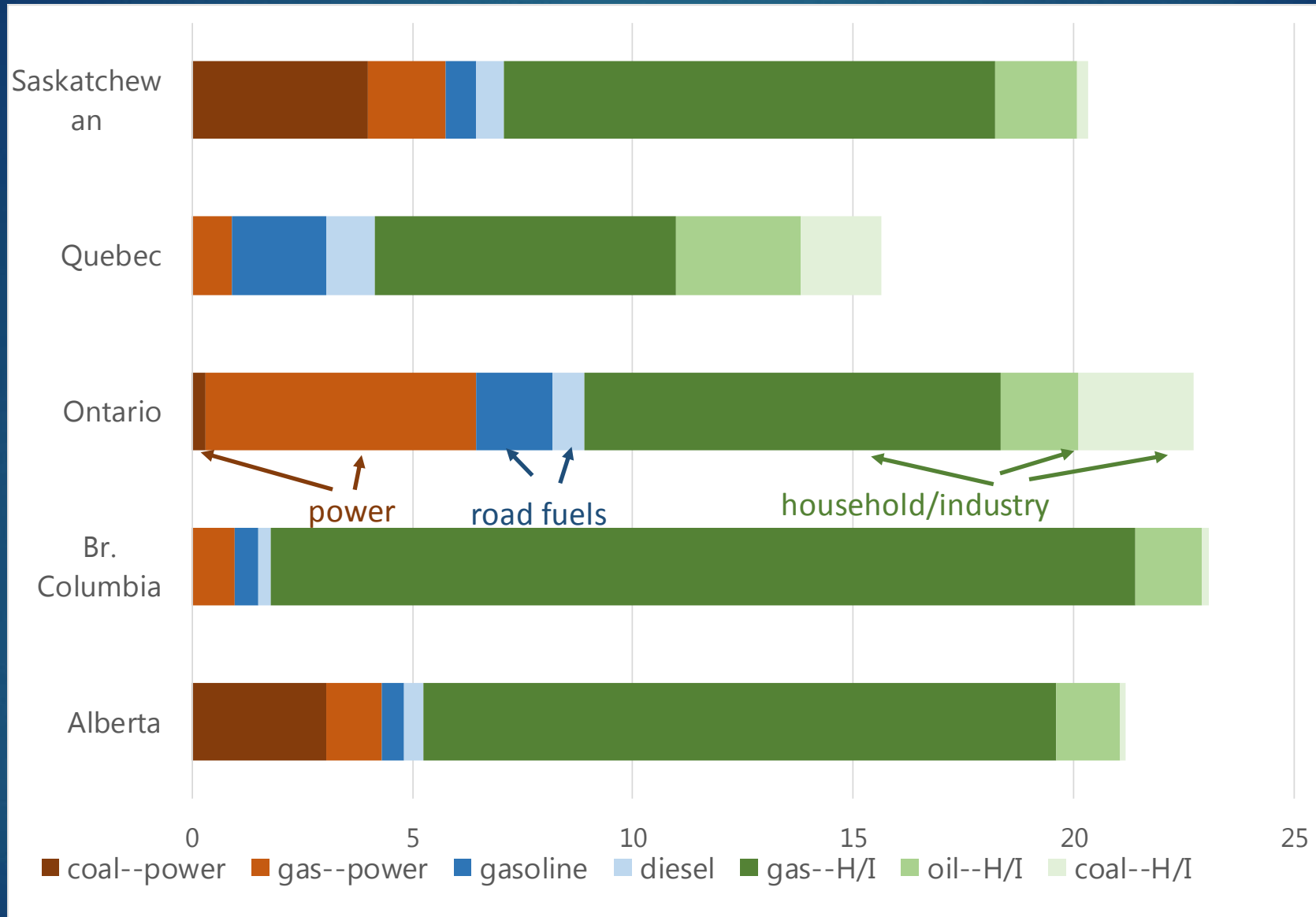
- ▶ No capital dynamics, trade
- ▶ Fuel price elasticities may be conservative

Business-As-Usual: Projected CO2 Shares, 2022



Source: IMF staff (2017).

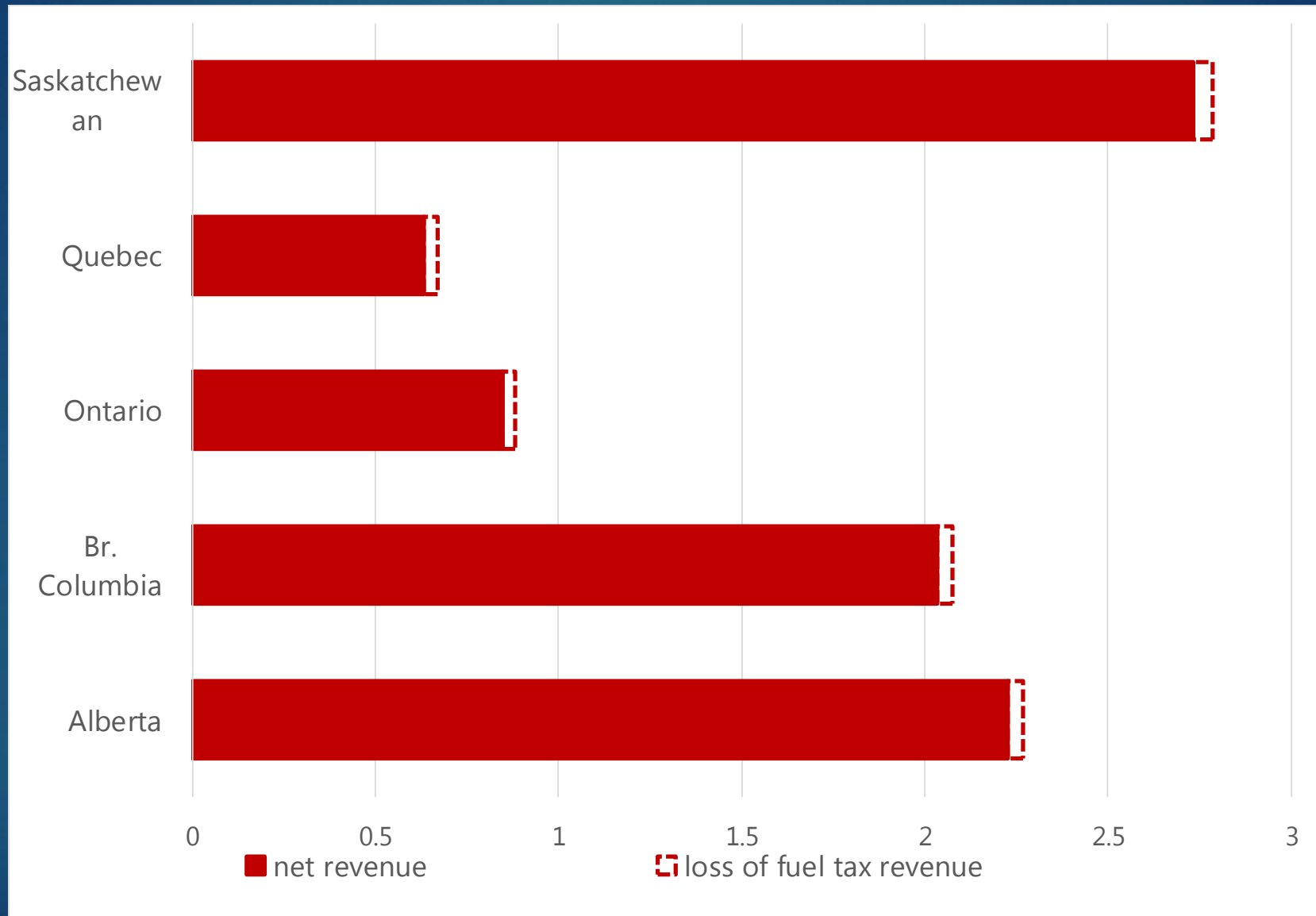
% CO2 Reductions Below BAU from \$50 Tax, 2022



Paris target: 42% reduction

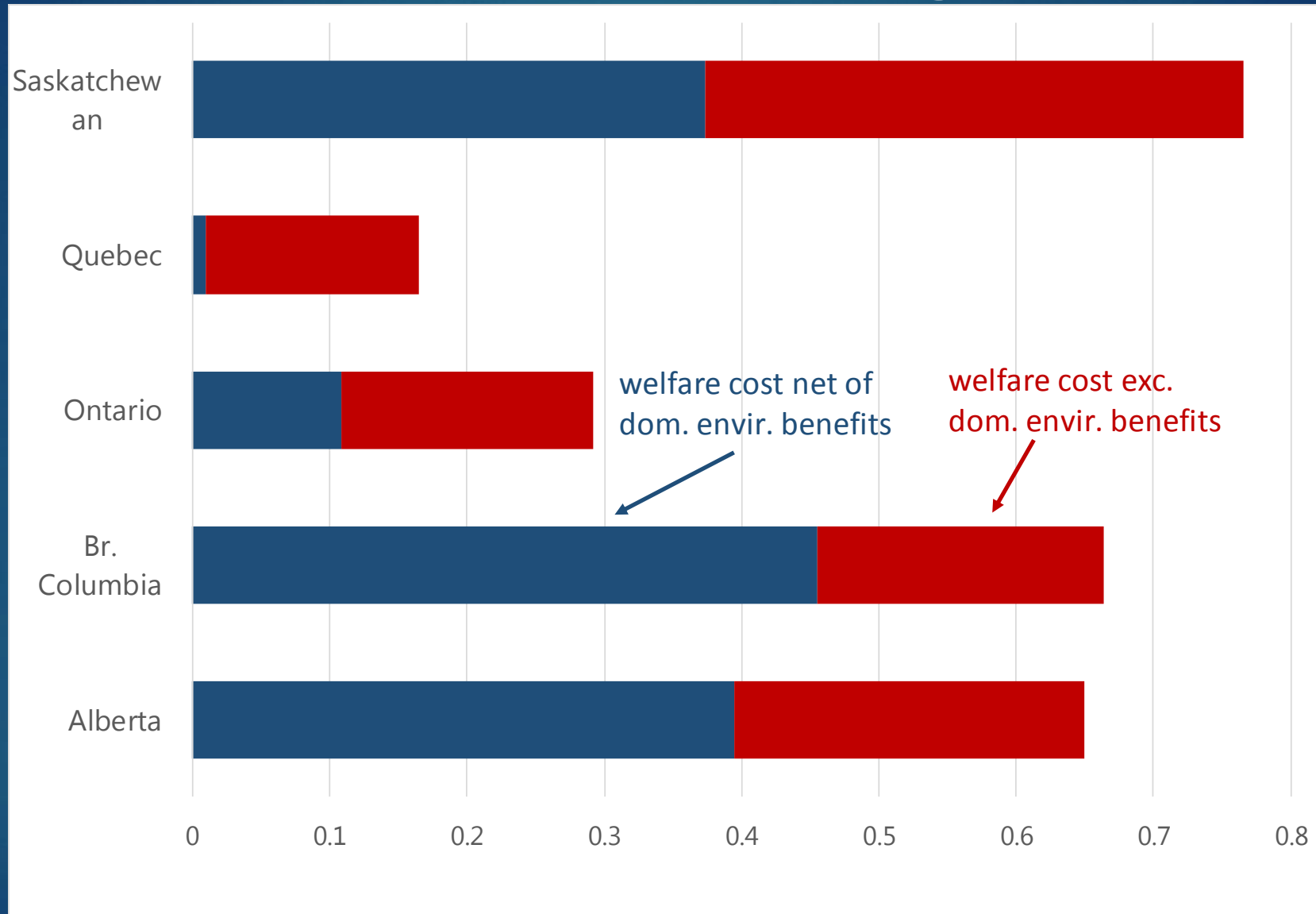
Source: IMF staff (2017).

Revenue from Carbon Pricing, 2022 (% GDP)



Source: IMF staff (2017).

Welfare Cost of Carbon Pricing, 2022 (% GDP)

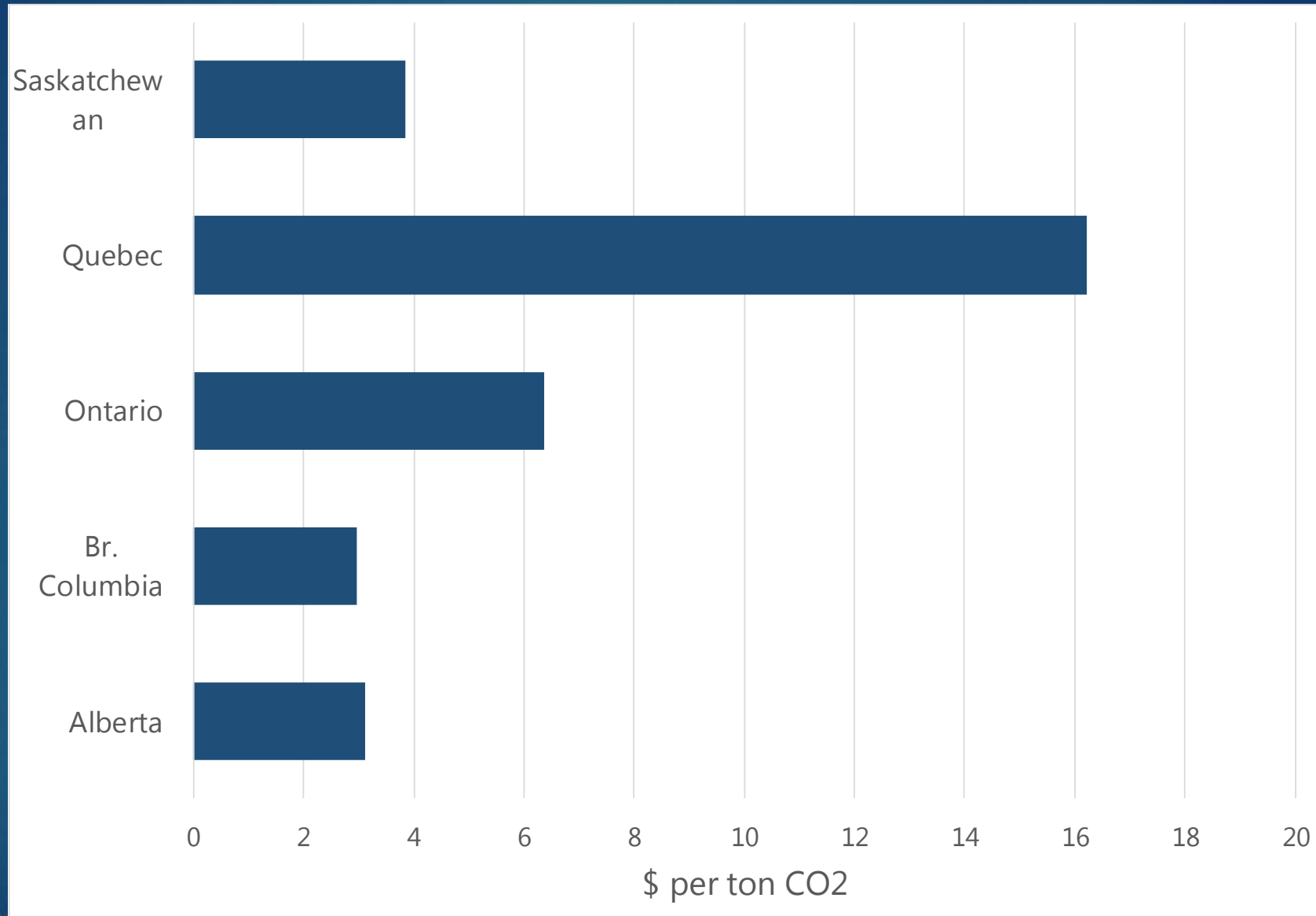


Source: IMF staff (2017).

Challenges in Monitoring Carbon Prices

- ▶ In principle, monitor 'effective' carbon price accounting for
 - ▶ Exemptions for sensitive sectors/fuels
 - ▶ Changes in fuel taxes
- ▶ Should be fairly straightforward
 - ▶ Weight formally priced sectors by share in CO₂ reductions under comprehensive pricing; and...

Effective Carbon Tax from Fuel Taxes, 2022



Source: IMF staff (2017).

Concluding

- ▶ Net costs of carbon pricing are not too large and practicalities of monitoring price floor manageable
- ▶ Challenges: \$50 per ton
 - ▶ Is well short of what is needed for Canada's Paris pledge
 - ▶ But raises competitiveness concerns