

# Options for Restricted Linking: *reporting on work-in-progress*

**Comparison and Linkage of Mitigation Efforts in a New Paris Regime, Harvard Kennedy School, May 7-8, 2015**

**Michael Lazarus, Lambert Schneider, Carrie Lee,  
Harro van Asselt, SEI**

# Background

- Linking ETSs can yield multiple benefits (administrative, economic, and political)
- Full bilateral linkage requires harmonizing many ETS design elements
- Challenges to harmonization have increased interest in alternative approaches
- ICAP commissioned SEI to assess restricted linking approaches that can deliver some of these benefits
- Literature on these options is relatively limited

# A continuum of linking approaches

1. **Full linking:** unrestricted mutual unit recognition & fungibility
2. **Restricted linking:** Partial or conditional unit recognition: quotas, one-way links, exchange rates, discount rates
3. **Indirect linking:** No mutual unit recognition but common recognition of **the** same “third” system units (e.g. offsets)
4. **Incremental alignment:** No mutual unit recognition but aligning of program elements (“linkage by degrees”, Burtraw et al 2013)
5. **Connecting to non-ETS programs:** (Bodansky et al, 2014)

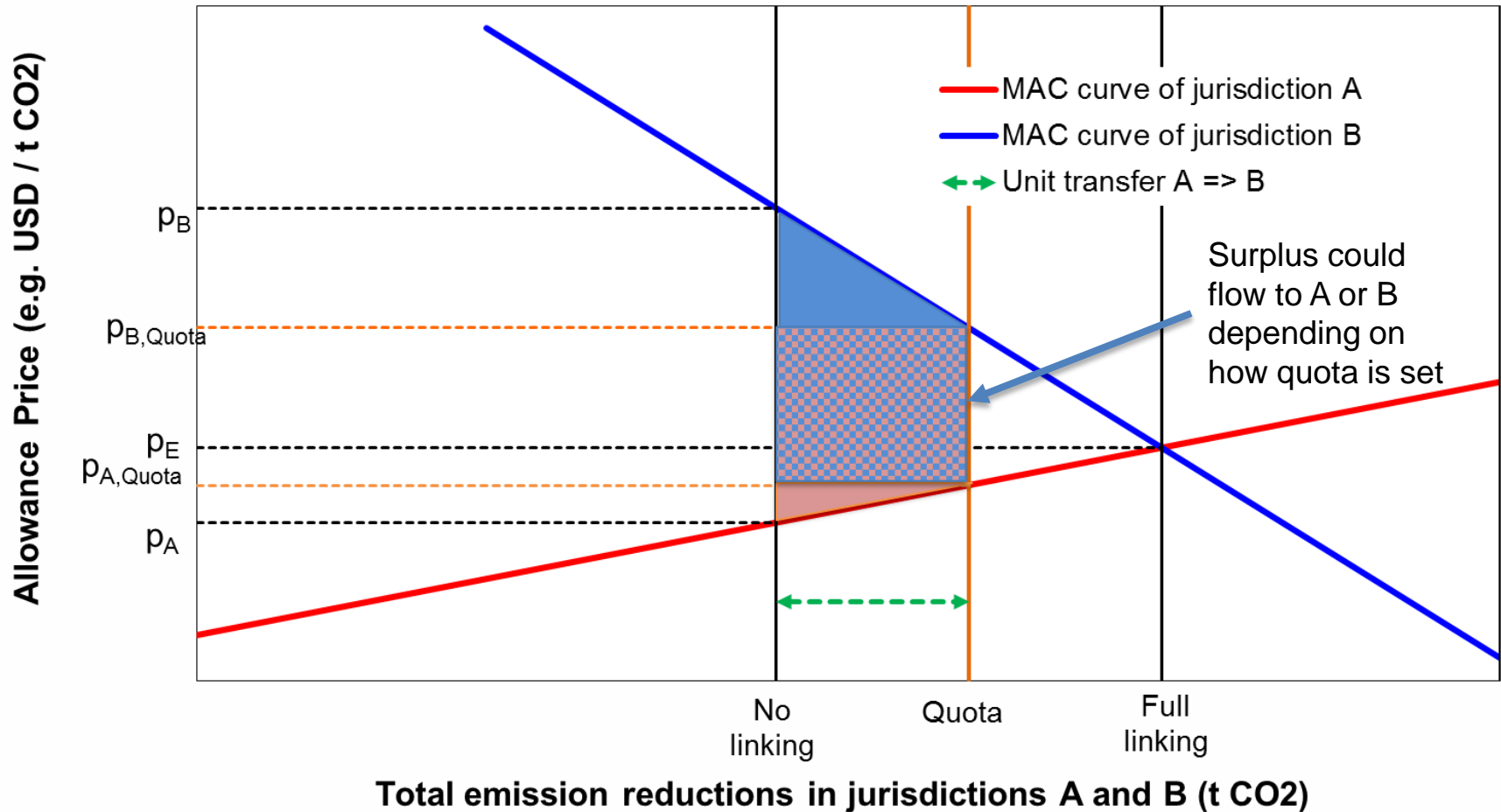
# Restricted linking options

- Illustrated using a simple two-jurisdiction model
- Assessed in terms of
  - Environmental benefit
  - Economic benefit
  - Political feasibility
  - Practical and overarching considerations

# Quotas

- How to apply quantitative limits?
- How to set limits (objectives, assessment, updating)?
- Set on unit imports or exports (e.g. via auctioned permits)?
- What can we learn from quotas in existing emissions and other markets (e.g. offset limits)?

# Implications of a quota set at 50% of the net allowance transfers under full linking



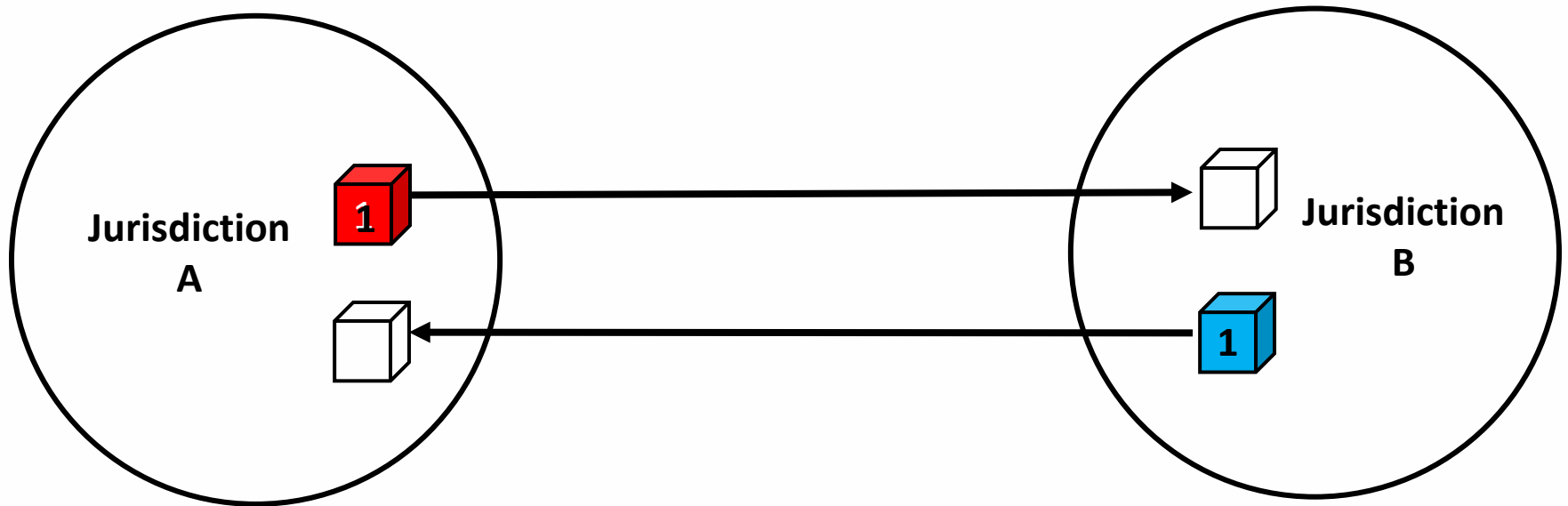
# Quotas – preliminary findings

- To the extent they quotas limit unit flow (as compared with full linking)
  - linking impacts are moderated
  - scarcity rent could be divisive if captured predominantly by one jurisdiction or particular entities
- Even restrictive quotas could yield significant economic gains
- Uncertainties can make setting an effective (binding) quota level difficult
- Jurisdictions can use quotas to “test the waters” of linking

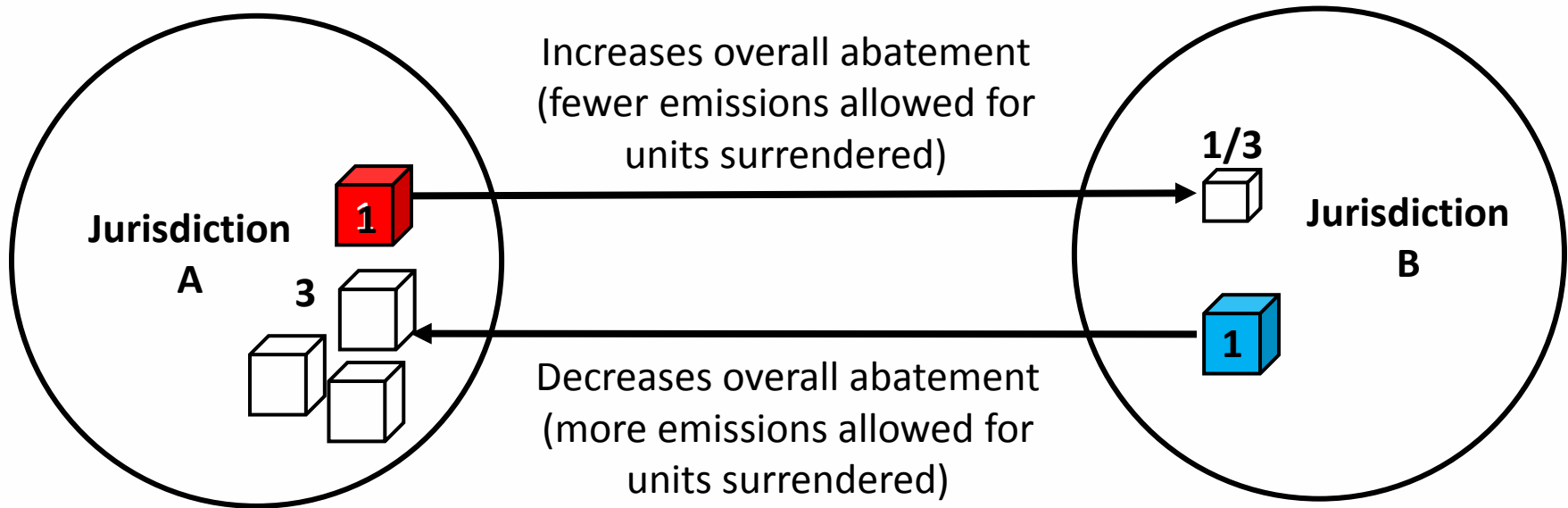
# Exchange Rates

- Our analysis focuses more on implications for cost-effectiveness, abatement, and allowance flows (financial transfers) of exchange rates.
- ...and less on the types of questions being explored under Globally Networked Carbon Markets initiative
  - What criteria for rating unit types? Relative price, mitigation value, environmental integrity, etc.?
  - How to translate rating into rates? How to factor in implications of other policies?
  - Who sets the rates? Fixed or floating? Blended units?

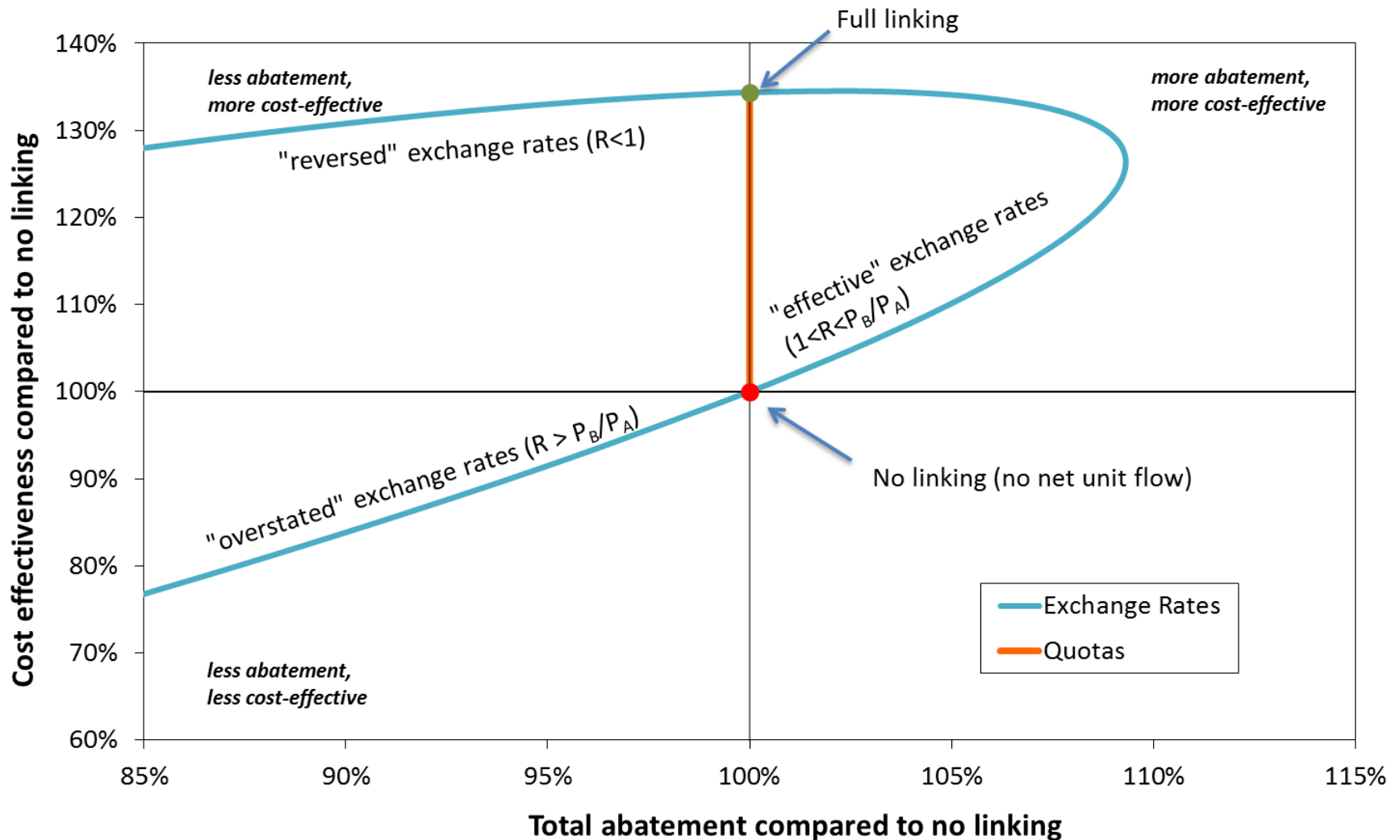
# Full linking



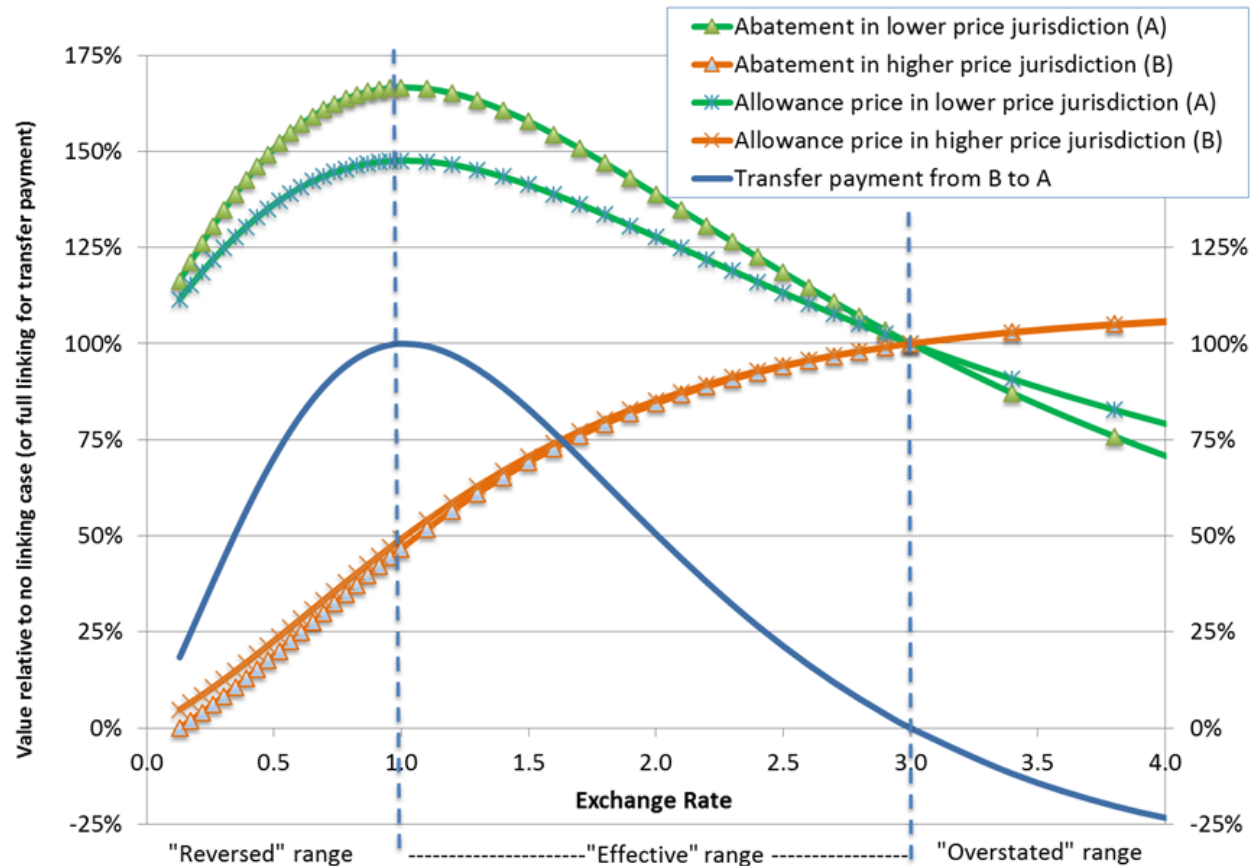
# Exchange Rate (example): 3 Jurisdiction A units / 1 Jurisdiction B unit



# Outcomes highly sensitive to where exchange rate is set



# How varying exchange rates might alter allowance prices and abatement in each jurisdiction relative to no linking



# Exchange rates – preliminary findings

- Provides full unit fungibility and enhanced liquidity
- Impacts highly dependent on exchange rate range
  - Only *effective* range leads to overall positive outcome
- Setting *effective* rates in practice could be challenging:
  - Requires information and foresight (BAU & MACs) subject to major uncertainties (growth, technology, prices, etc.)
- Rate that appears *effective (ex ante)* could turn out *reversed or overstated*
- Ex post monitoring and adjustment challenging
  - Main signal is weak (holdings)
  - Allowance surrender typically occurs only once a year

# Discount rates – preliminary findings

- No need for symmetry in rates
- Can address some challenges of exchange rates (e.g. avoid the risks of reversed or overstated rates)
- Limited fungibility and liquidity benefit compared with exchange rates

# Overall findings - preliminary (1)

- Restricted linking options can
  - limit benefits as well as potential pitfalls of full linking
  - reduce the extent of harmonization required
  - offer some cost-effectiveness gains of full linking (quotas, *effective* or *reversed* exchange rates, discount rates)
  - increase overall mitigation (*effective* exchange rates, discount rates)
  - lead to adverse consequences compared to no linking (*overstated* exchange rates)
  - provide adjustment levers and off-ramps should linking concerns prove significant (“moving in” rather than “getting married”)

# Overall findings – preliminary (2)

- Appropriateness of restricted linking approach depends on ETS designs, relative sizes, abatement costs, and policy objectives
  - Quotas and one-way links: easier path to full linking?
- Exchange rates offer promise but
  - may risk not achieving policy objectives, due to challenges in setting *effective* rates
  - may become complex to manage with multiple linked jurisdictions

For more information, contact

Michael Lazarus, [mlaz@sei-us.org](mailto:mlaz@sei-us.org)