# Booms, Busts, and Bailouts: Fiscal Federalism and Subnational Credit

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Puzzle

- Subnational credit conditions vary considerably across countries, often irrespective of subnational debt burdens ; why?

- Answer partially reflects bailout expectations, but what drives bailout beliefs?

- Why do we care?
  - The problem of insufficient market discipline
  - The problem of excessive market discipline

Dependent variable (bailout beliefs) in context

Political Factors → Bailout Beliefs / Standalone Default Risk → Subnational Creditworthiness → Borrowing Conditions
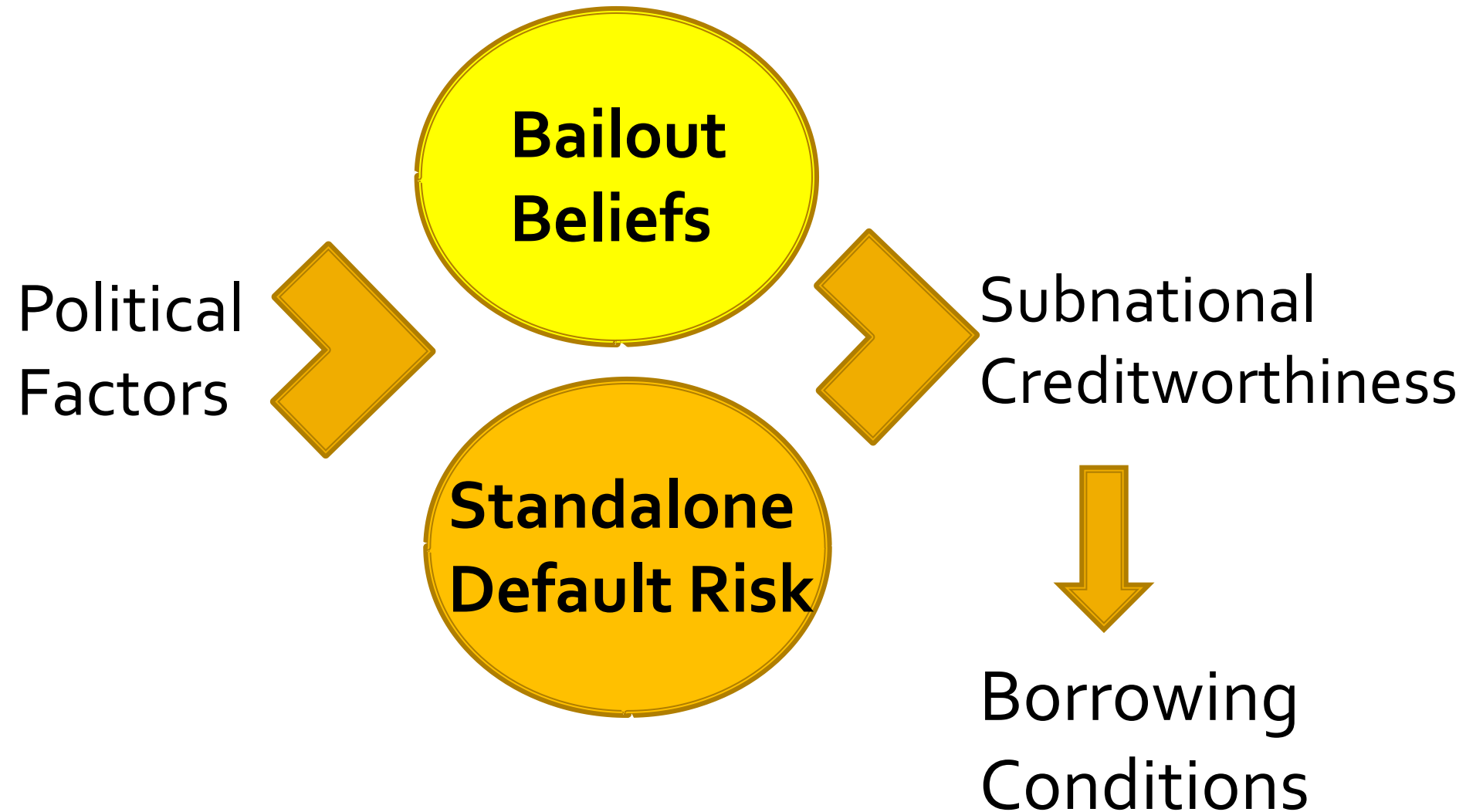
Not all subnational borrowers considered sovereign; why?

## Probability of receiving a bailout, Moody's
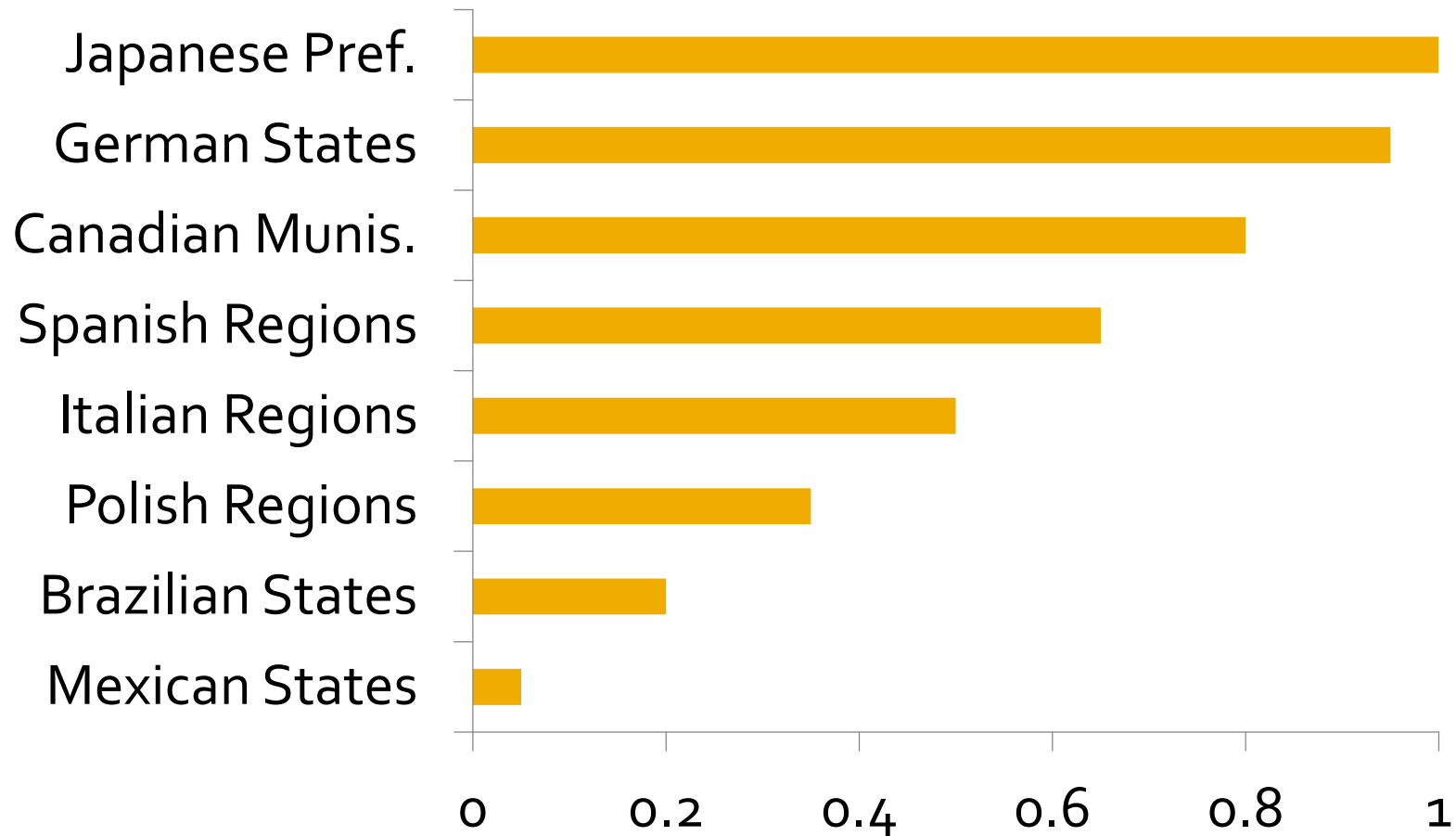
Argument

- Bailout expectations reflect fiscal federal institutions

- Political economy approach: fiscal federalism shapes market perceptions of central bailouts incentives

- Contrary to received wisdom, expectations do not increase with transfer dependence

- They do increase with…
  - (1) Decentralization of universal social services (e.g. healthcare) and (2) presence of equalization system…
  - …conditional on national economic development

Roadmap

- **State of the literature**
- **Puzzling provinces**
- **Theory and hypotheses**
- **Empirical analysis**
- **Fiscal federalism in perspective**
- **Implications**
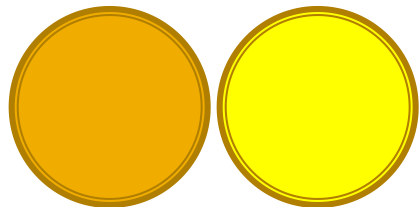
Conventional wisdom

- Bailout expectations reflect structure of intergovernmental fiscal authority (Rodden 2006)
- Transfer dependence sends clearest signals (Rodden 2006, McKinnon 1997, v. Hagen & Eichengreen 1997)
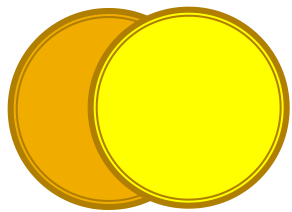
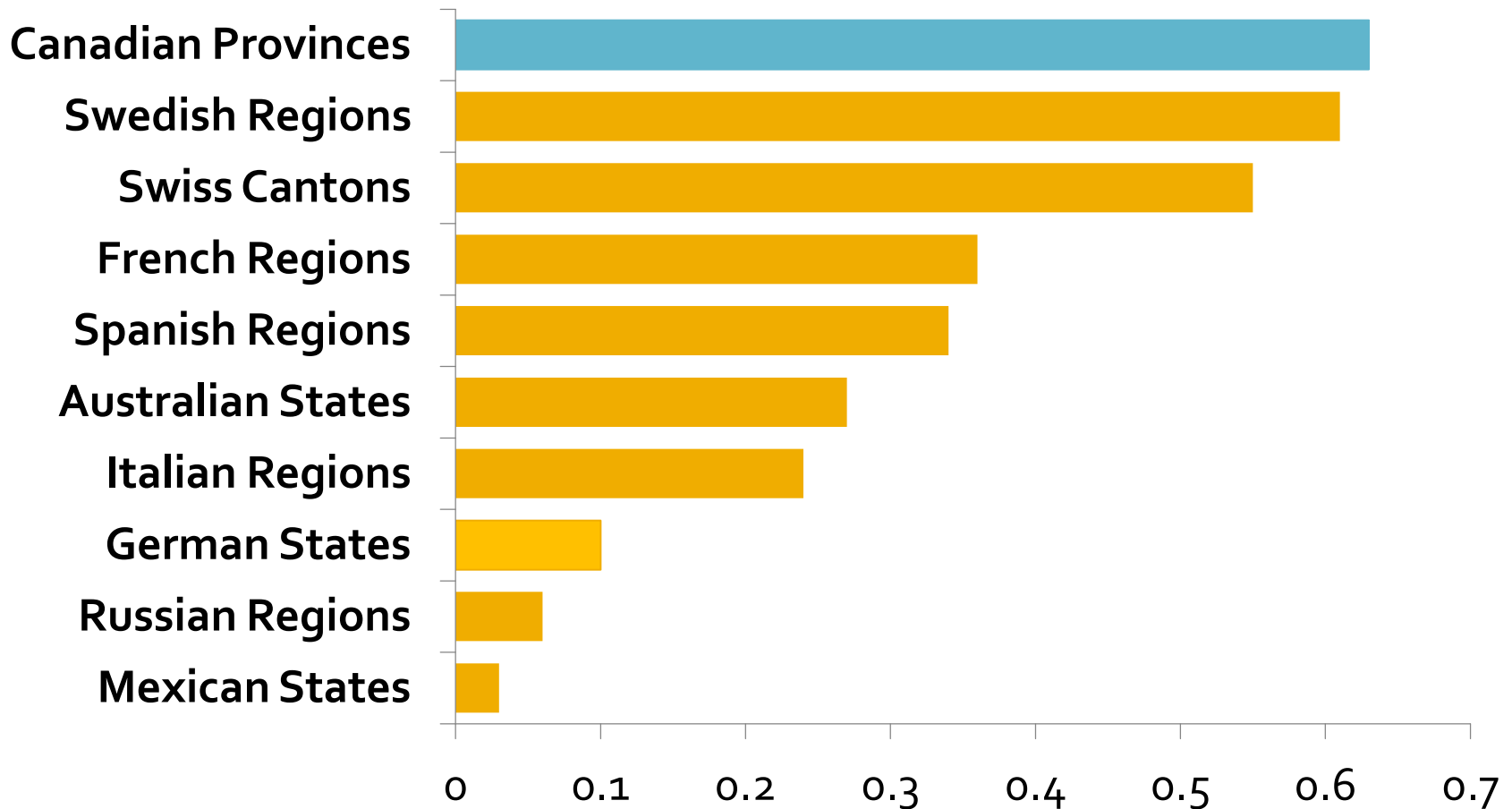**'Overlapping' Authority** → Strong Bailout Signals

'Divided' Authority → Weak Bailout Signals

Testing conventional wisdom: Canadian provinces

- Canadian provinces: some of the "most likely" examples of sovereign borrowers (Rodden 2006)
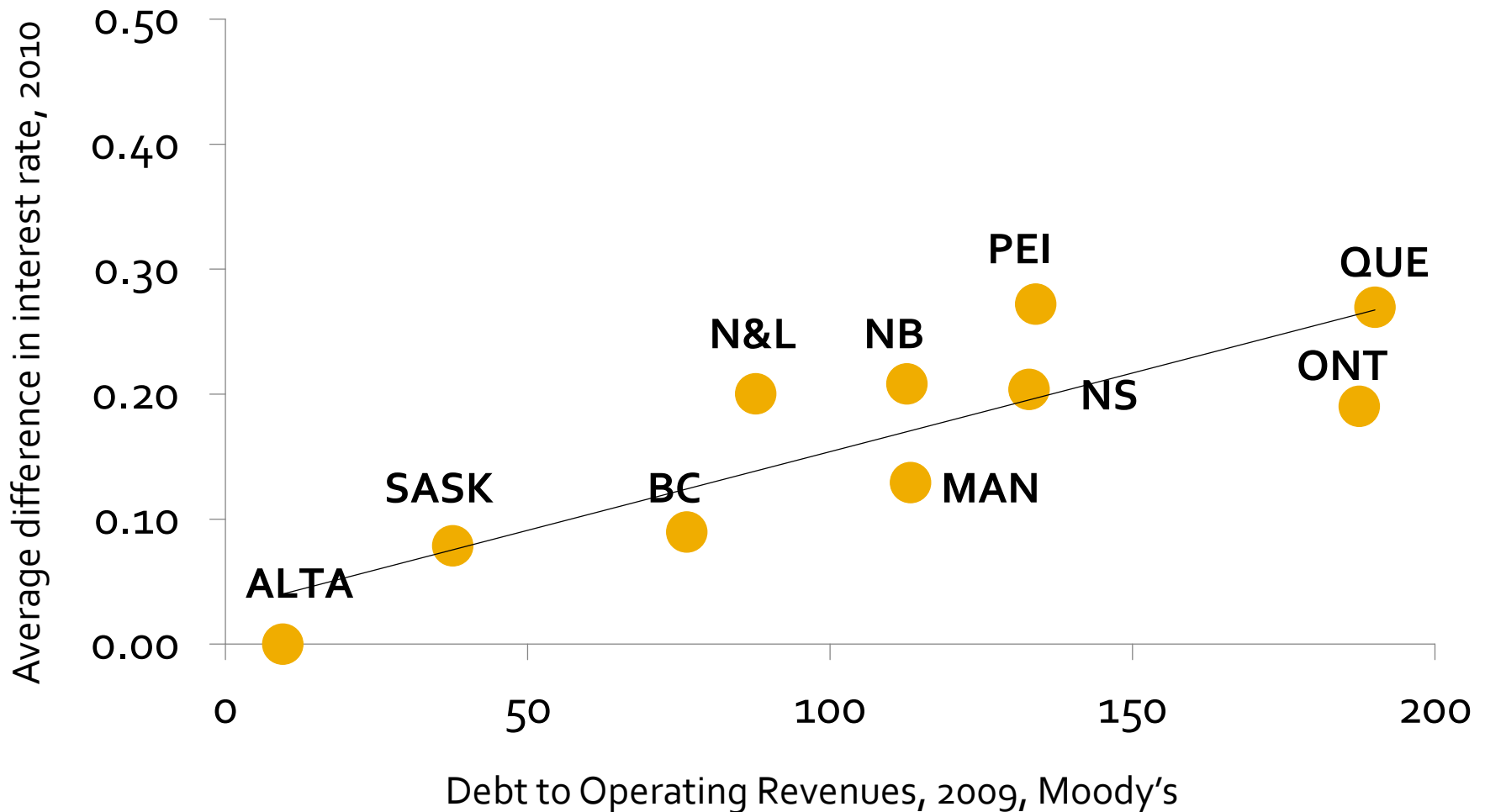
- Limited transfer dependence

Puzzling provinces: Fiscally independent yet...

Discretionary over total revenue, 2004-06, S&P

...implicitly guaranteed?

Spreads on 10-year provincial bonds, 2010, CIBC

Argument: Fiscal federalism and bailout beliefs

- Transfer dependence does not send compelling bailout signals

- Other fiscal federal factors do
  - (1) Decentralization of universal services (i.e. healthcare and education)
  - (2) Equal living conditions clauses (von Hagen et al. 2000)
  - (3) National economic development (negatively conditions variables 2& 3)

Empirical analysis:
Direct measures of bailout beliefs

- (1) Cross-national: Moody's bailout probabilities

  - Quantitative and qualitative analysis

- (2) Single country ("most-critical" case): Expectations of investors in Canadian provincial debt

Analysis (1a): Moody's bailout probabilities

- **Dependent Variable:** Probability of bailout from higher level of government, .05 to .95
- **Independent Variables**: transfer dependence dummies (medium, high)
- **Controls**: default history dummy, GDP per capita, bicameralism
- **Sample**: 46 'groups' of subnationals (e.g. CDN provinces, ESP regions) from 23 countries, 2010
- **Models**: OLS, fractional logit

Analysis (1b): Countries with groups in sample

Note: Some countries contain more than one group		
Argentina	Czech Republic	Portugal
Australia	France	Russia
Austria	Germany	Slovakia
Belgium	Greece	Spain
Brazil	Italy	Switzerland
Bulgaria	Japan	Ukraine
Canada	Mexico	United Kingdom
Colombia	Poland	

Analysis (1c): Transfer dependence and bailouts

Transfer dependence	Predicted bailout probabilities
Low (baseline)	.32
Medium	.23
High	.18*

Full OLS model; default history = 1; other controls held at means; * Coefficient significant at .10 level

Analysis (1d): Qual. analysis of Moody's data

- **(1) Transfer dependence:** no suggestion of positive or negative effect

- **(2) Provision of universal services:** positive effect (e.g. Italian regions, Swedish munis.)

- **(3) Equalization system:** positive effect

- **(4) Economic development:** variables 2 and 3 don't register in developing countries
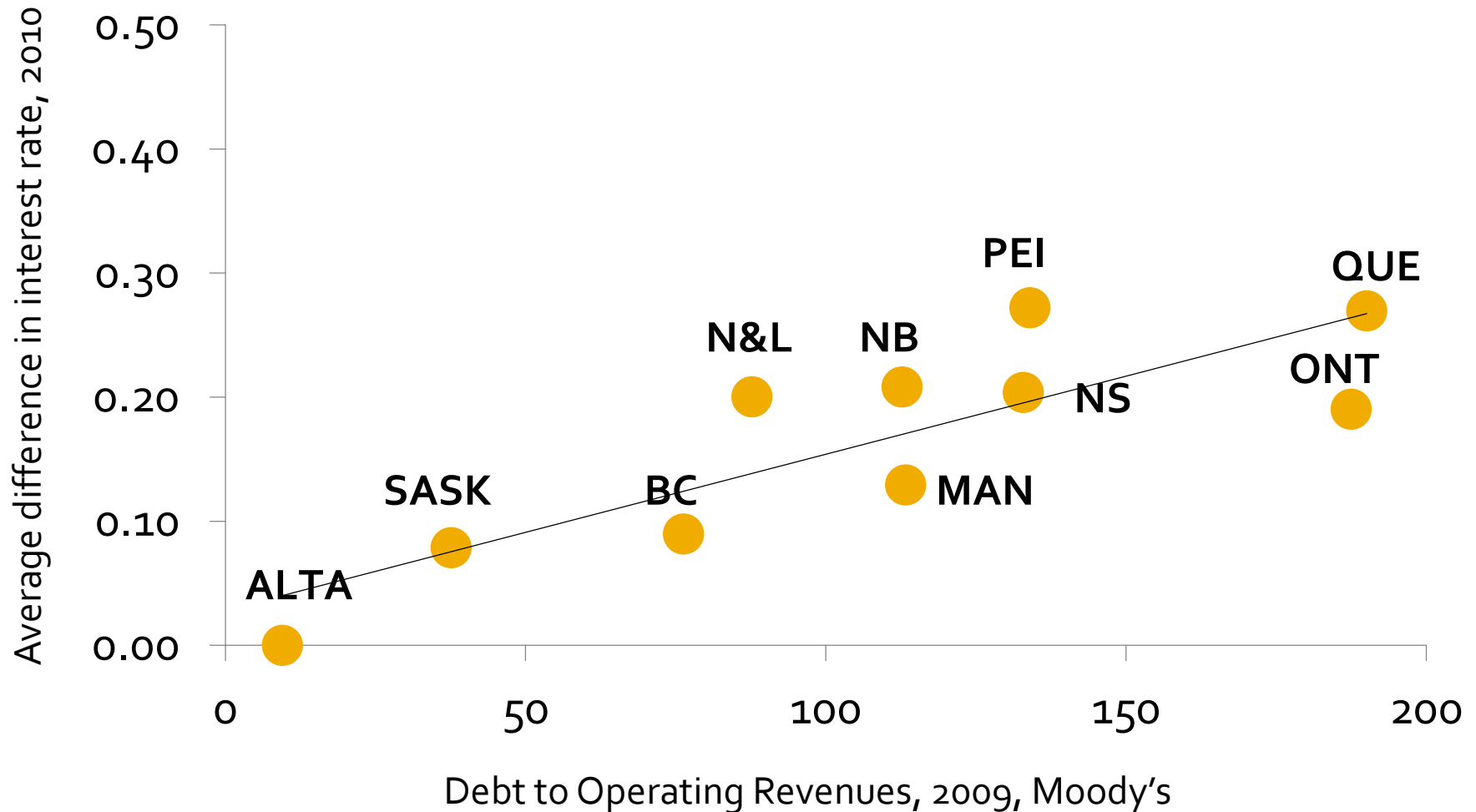
Interim summary: Determinants of bailout beliefs

	Moody's Data	Provincial Data
1. Transfer Dependence	Negative / neutral effect	
2. Universal Services	Positive effect	
3. Equalization System	Positive effect	
4. National Economic Development	Negatively conditions variables 2 & 3	

Analysis (2a): Puzzling provinces
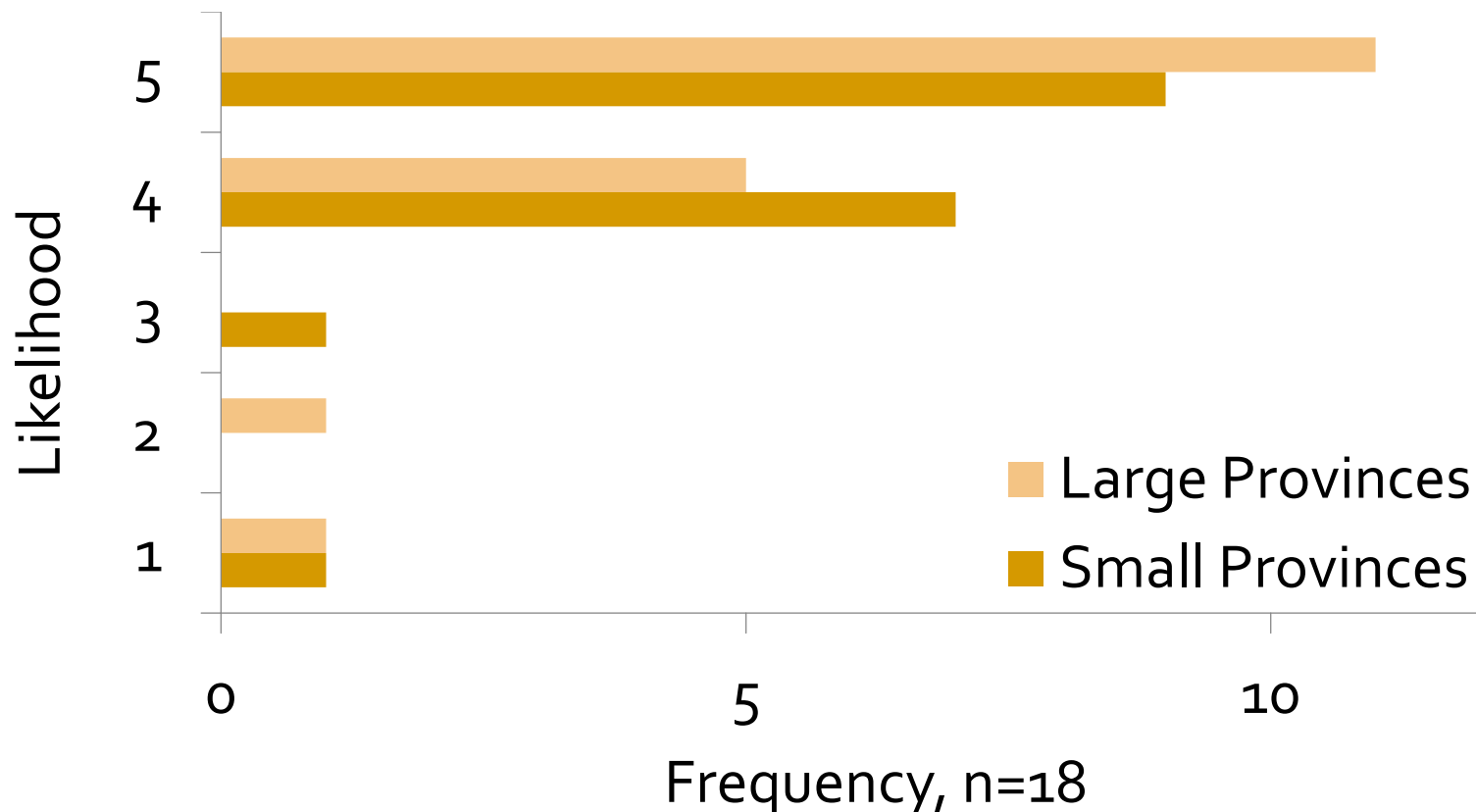
Spreads on 10-year provincial bonds, 2010, CIBC

- Underwriters and debt sales representatives at lead banks identified "influential investors" in provinces' domestic currency bonds

- Investors asked to assess likelihood of bailout for province on "verge of default"

- Also asked about impact of fiscal federal variables

- Over 80% of investors interviewed attribute transfer system positive effect

- Over 60% attribute equalization component of transfer system positive effect

- Over 90% attribute expected economic and financial implications of default positive effect

Summary of results: Determinants of bailout beliefs

	Moody's Data	Provincial Data
1. Transfer Dependence	Negative / neutral effect	No negative effect
2. Universal Services	Positive effect	Positive effect
3. Equalization System	Positive effect	Positive effect
4. National Economic Development	Negatively conditions variables 2 & 3	

Fiscal federalism in perspective: Bailout beliefs and sovereign risk

- Fiscal federalism → static component of bailout beliefs

- Sovereign creditworthiness → dynamic component of bailout beliefs

- Critical: Shifts in sovereign creditworthiness can induce booms and busts in subnational lending, irrespective of fiscal federal structure

Implications

- Are bailout expectations necessarily bad?
  - Moral hazard v. short-term macroeconomic stability

- Should / can subnational borrowing be regulated?
  - Hierarchical v. market constraints