

# R&D Tax Credits

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# Social returns to R&D

- Research as public goods problem
- How big? **Who knows?!**
  - Measuring spillovers runs into “reflection problem”
  - BSV (2013) => Private return = 21% vs. Social = 55%
- R&E tax credit subsidizes private R&D
  - FY 2012 tax expenditure = **\$11.6 billion**
  - FY 2012 direct R&D support = **\$152 billion**

# R&E credit costs and benefits

- **Decentralized** project selection
  - Correlation of marginal social and private value?
  - Largest firms are 14% of claims & 84% of credits
  
- **Complexity & compliance**
  - Longstanding concerns about “re-labeling”
  - Complex formulas and data requirements
    - Most R&E claimants elect “simplified” credit formula
    - Until 2015, R&E credit was temporary

# How does it work?

## Simplified example (ASC)

1	Qualified Research Expense (QRE)	\$100
2	Lagged 3-year avg. QRE	\$90
3	Current-year Base <i>(Line 2 * 0.5)</i>	\$45
4	Incremental QRE <i>(Line 1 – Line 3)</i>	\$55
5	ASC credit rate	14%
6	Reduced credit rate <i>(0.64*Line 5)</i>	9.1%
7	R&E Tax Credit <i>(Line 6 * Line 3)</i>	\$5.01

- Effects of 3-year moving-average “base”
  - Marginal credit (9.1%) > Average credit (5%)
  - Negative marginal rate if incremental QRE < 0
  - R&E credit is pro-cyclical fiscal policy

# Is it (relatively) efficient?

- R&D baseline prevents “windfall” tax benefits
- Modal user-cost elasticity estimate: -1.0
  - Roughly, \$1 tax expenditure => \$1 R&D
  - Evidence of larger response at smaller firms
- **Tax-exhaustion!**
  - Half of credits not used (SRED and OTA)
  - Twenty-year carry-forward => 80% NPV
  - PATH 2015 => small-firm credits **refundable** up to \$250K

# Some research opportunities

- R&D outcomes (e.g. patents or TFP)
- Impacts of refund-ability under PATH
- Contract R&D
  - Sixteen percent of QRE...
  - ... despite technology-market failures!

# Are we looking in the right place?

- R&D => IP => **Income Shifting**
  - Data: BEA Int'l Trade in IP services
  - Balanced panel: 34 countries by 15 years (1999-2014)
  - “Tax friendly” countries: Luxembourg, Bermuda, Hong Kong, Ireland, Netherlands, Singapore, Switzerland

	All Trade		Affiliated Exports	Affiliated Imports		Unaffiliated Exports	Unaffiliated Imports
Tax Friendly	1.79		<b>2.39</b>	<b>2.67</b>		<b>0.18</b>	<b>0.95</b>
	[0.36]**		<b>[0.33]**</b>	<b>[0.75]**</b>		<b>[0.38]</b>	<b>[0.63]</b>
English Speaking	0.84		1.36	0.45		0.41	0.72
	[0.28]**		[0.28]**	[0.44]		[0.34]	[0.45]
log(GDP)	1.00		0.89	1.58		0.72	1.07
	[0.15]**		[0.13]**	[0.35]**		[0.19]**	[0.25]**
Observations	462		262	231		262	239
Avg. Outcome (\$M)	3,114		1,888	727		1,074	266

# Thank You!

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