

# *Diversification and Exposure to Policy Risk*

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IPES 2012



# Firm Responses to Policy Risk

- » Conventional Wisdom: Investors are deterred by policy risk.
- » Empirical Finding #1: Countries that pose greater policy risk for investors attract less investment.
- » Empirical Finding #2: Risky countries attract often significant amounts of foreign capital.
- » **Question:** Why do some firms invest in countries where policy risks are high enough to deter investment by others?

# Risk management

- » Argument #1: International/domestic experience, particularly in risky countries, allows firms to build political capabilities.
- » Argument #2: Firms vary their entry modes (JV vs. WO) to reduce their exposure to policy risk.
- » New perspective: Firms assess policy risk in particular countries in the context of a broader investment location strategy and consider their overall exposure to policy risk throughout their subsidiaries.

## Key Insight: Risk Diversification

- » If returns (and “events” that affect returns) are not correlated across assets, holding multiple assets can reduce the overall exposure to risk.
- » If policies that adversely affect returns on investments are not correlated across subsidiaries, holding multiple subsidiaries can reduce the firm’s overall exposure to policy risk.

# Real Options Theory & Policy Risk for MNEs

- » Real option: right, but not an obligation, to expand holdings or investments
- » Multiple diversified holdings allow MNEs to switch activities between subsidiaries in response to adverse policy changes
  - Limits downside risk
  - Offers a credible threat of exit

# Benefits of Diversification – An Example: Xstrata

- » *“Resources are immovable but **diversified mining companies** have a choice of countries in which to invest....No other country is considering imposing such a punitive tax on its mining industry...many resource-rich nations regard this tax as an opportunity to gain a larger share of global mining investment.”*
  - *M.L. Davis (CEO, Xstrata), Letter to the Editor of the Financial Times, June 2, 2010.*

# Australia's PM waters down mining tax

By Elizabeth Fry in Sydney

Julia Gillard, [Australia's new prime minister](#), has bowed to the demands of the powerful local mining industry and watered down the controversial [resource super profits tax](#), clearing the way for a general election as early as next month.

After a week of intense talks with mining heavyweights [BHP Billiton](#), [Rio Tinto](#) and [Xstrata](#), Ms Gillard on Friday cut a deal to replace the wider mining tax with one that applies only to iron ore and coal.



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She also cut the headline tax rate from 40 per cent to 30 per cent – but this translates in effect into a 22.5 per cent rate after a 25 per cent extraction allowance, which means only the resource profit is taxed. A further concession is that the tax will only kick in when profits exceed a 12-13 per cent rate of return rather than 6 per cent.

# Implications for investment location

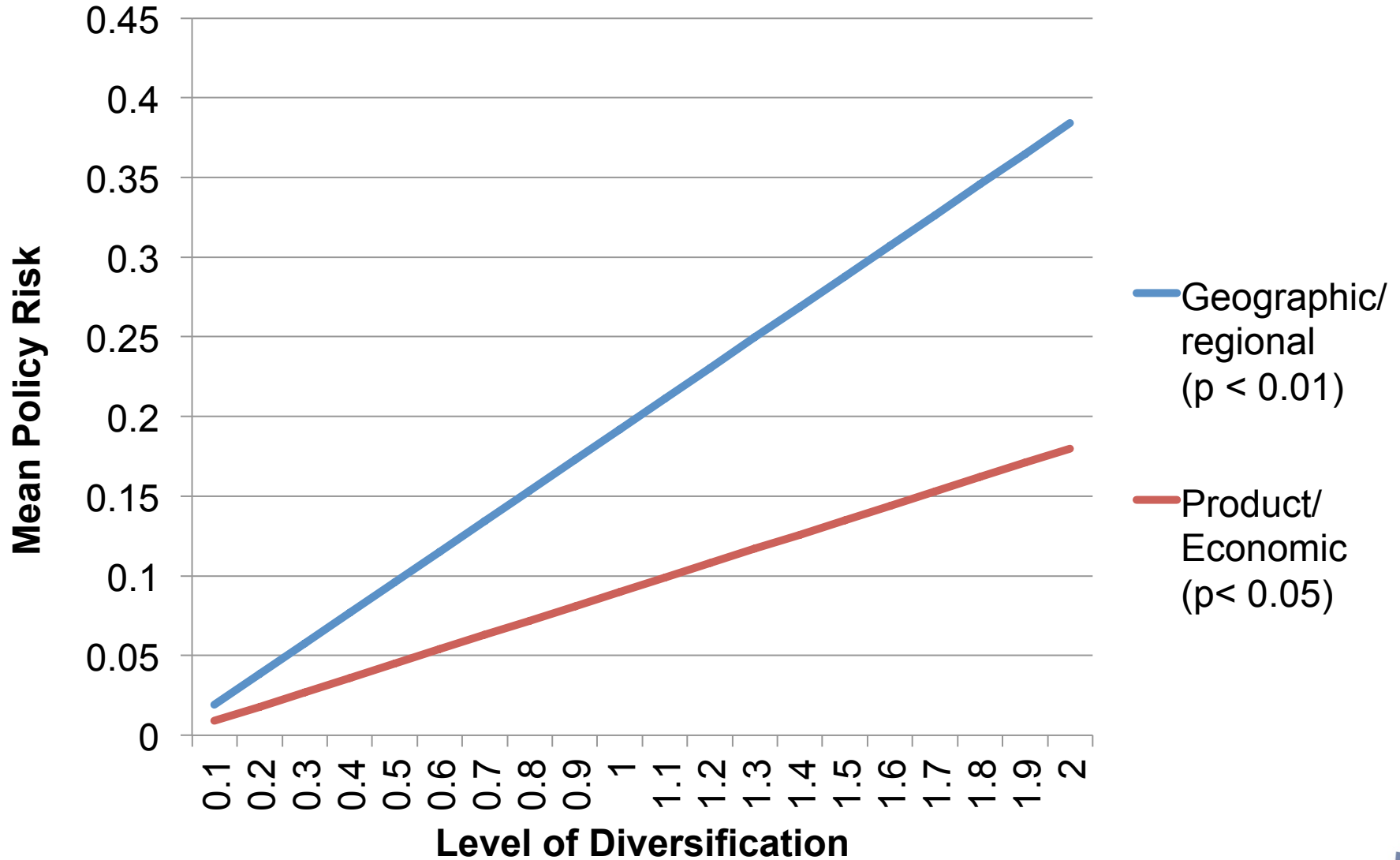
- » Well-diversified firms are more willing to invest in subsidiaries in countries where policy risk is high.
- » **Low risk base:** Diversification means the *ex ante* overall level of risk is very low.
- » **Low marginal risk impact:** Diversification allows the marginal impact of each high risk subsidiary on a firm's overall exposure to policy risk to be small.
- » Greater Diversification → Greater share of high risk investments



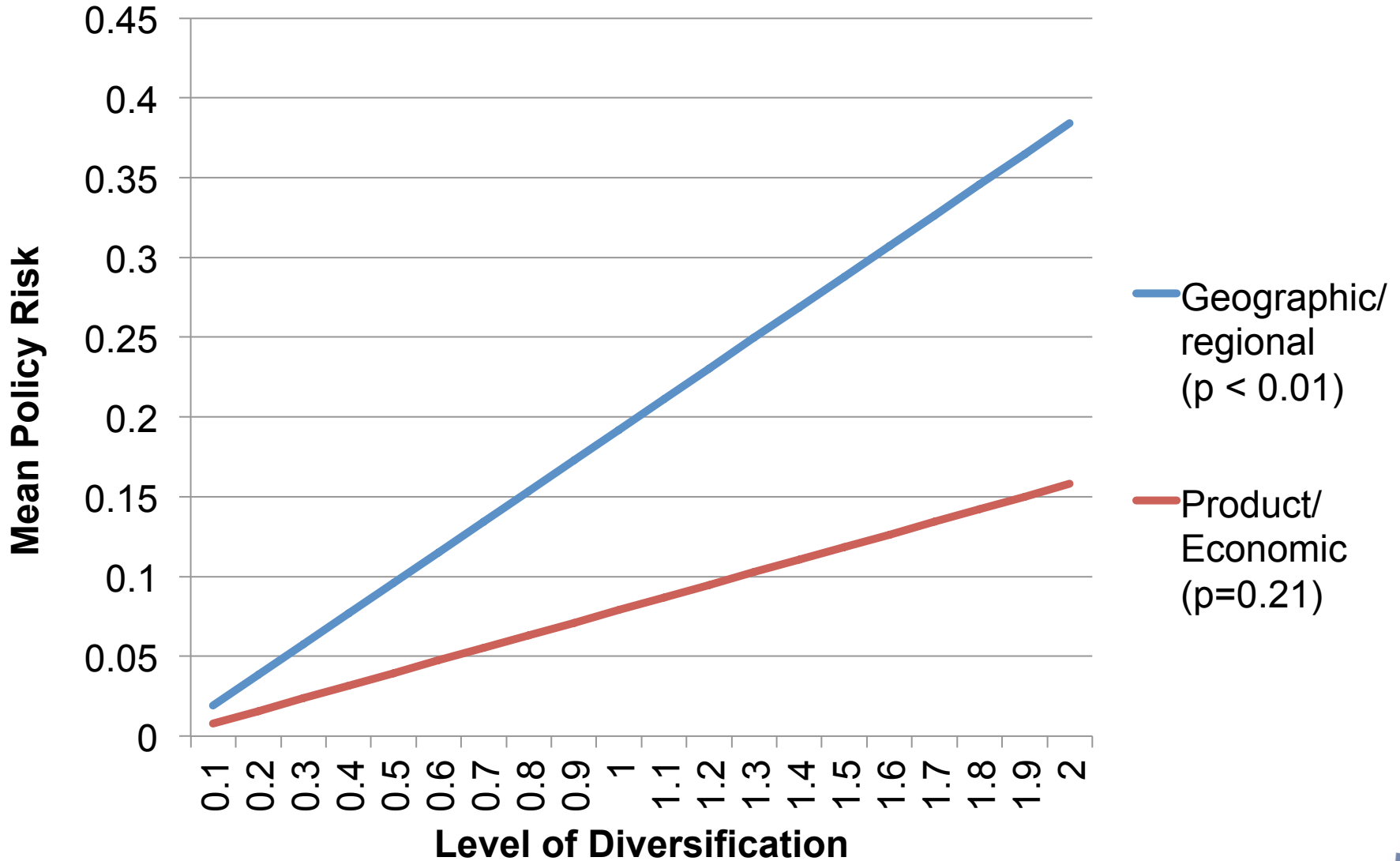
# Testing the Argument

- » 3596 MNEs from 68 countries in 19 different industry categories
- » DV: Mean rescaled POLCON score (by subsidiary-host).
- » IV 1: Product/Economic diversification (by industry)
- » IV 2: Geographic Diversification (by regions)
- » Controls: Firm size, firm age, home country policy risk, publicly listed, geographic scope (number of host countries), industry dummies.
- » Method: Instrumental variable regression to combat possible endogeneity in strategic choices.

# Estimated relationship between diversification and mean risk



# Estimated relationship including industry dummies



# Conclusion

- » Firms whose investments are more regionally diversified have a higher share of subsidiaries in countries where policy risk is higher.
- » Implication: Firms evaluate policy risk across the “portfolio” of their subsidiaries.
- » The relationship between product diversification and mean risk is not robust.
- » Implication: concerns regarding policy risk apply mainly to broader policies.

# Abbreviated Table of Results

	(1)	(2)	(3)	(4)
Regional Diversification	0.177** (0.038)	0.192** (0.046)	0.215* (0.097)	0.191** (0.057)
Home Policy Risk	0.408** (0.066)	0.454** (0.074)	0.436** (0.126)	0.364** (0.064)
Publicly Listed	-0.014 (0.013)	-0.007 (0.012)	-0.001 (0.012)	0.003 (0.010)
Company Age	0.004 (0.003)	0.001 (0.003)	0.003 (0.003)	0.003 (0.003)
Size (LN(Assets))	-0.006** (0.002)	-0.016** (0.005)	-0.024 (0.016)	-0.009 (0.006)
Product Diversification		0.098* (0.048)	0.117 (0.012)	0.079 (0.062)
LN(No. of Host Countries)				-0.059* (0.025)
N	3262	3235	2928	2928

\*\*p<0.01, \*p<0.05

Standard errors clustered on home country

Models (3) & (4) include industry dummies (estimates not reported)



# First Stage Regression Results – Model (4)

	Regional Diversification	Product Diversification
Home Policy Risk	-0.286** (0.060)	-0.490** (0.087)
Publicly Listed	0.144** (0.022)	-0.084** (0.023)
Company Age	-0.002 (0.008)	0.007 (0.010)
Size (LN(Assets))	-0.030** (0.004)	0.096** (0.005)
LN(No. of Host Countries)	0.386** (0.009)	0.107** (0.012)
Instrument ( Average Regional Diversification)	1.050** (0.059)	-0.562** (0.071)
Instrument ( Average Product Diversification)	-0.588** (0.047)	0.787** (0.056)
N	2928	2928

\*\*p<0.01, \*p<0.05; standard errors clustered on home country

Instruments: Average regional diversification and average industry diversification for firms in the same core industry and home country.

(Coefficients for industry dummies not reported)



# Entropy Measure of Regional Diversification

$$\sum_i \left[ R_i * \ln\left(\frac{1}{R_i}\right) \right]$$

$R_i$  is the number of subsidiaries in region  $i$  and  
 $\ln(1/R_i)$  is the weight given to each region