

# Investing in KBC by Learning from Knowledge Networks

(Transforming Common-ownership Knowledge into Firm-KBC):  
Connectivity, Risk Management and Policy

Mark Dutz, PRMED  
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# Outline

## I. **Connectivity vs Absorption-related economic competencies**

- Application of CHS to Brazil
- What's missing? Connectivity investments in KNMs
- Exploring importance of connectivity

## II. **Understanding the role of KNMs and KBC in managing risk**

- Conceptualizing KBC as investments in risk management

## III. **Towards a policy framework for “KBC for development”**

- 3 policy examples
- Benefits:
  - of unpacking & measuring TFP components
  - of alliance with WAVES

# I. Applying CHS to Brazil: “low” investments in economic competencies

## KBC investments as % of expanded GDP, 2006

	US		UK		Germany		Brazil	
<b>1. COMPUTERIZED INFORMATION</b>	<b>1.24</b>	<b>12%</b>	<b>1.42</b>	<b>15%</b>	<b>0.69</b>	<b>10%</b>	<b>1.10</b>	<b>26%</b>
<b>2. INNOVATIVE PROPERTY</b>	<b>4.07</b>	<b>39%</b>	<b>2.88</b>	<b>30%</b>	<b>3.38</b>	<b>50%</b>	<b>2.01</b>	<b>47%</b>
Research and Development (R&D)	1.69	16%	0.98	10%	1.62	24%	0.56	13%
Mineral exploration & evaluation	0.78	8%	0.04	0%	0.01	0%	0.03	1%
Copyright & license costs	0.55	5%	0.20	2%	0.20	3%	0.11	3%
Development costs in financial ind.	0.55	5%	0.06	1%	0.70	10%	1.10	26%
Designs, incl. architectural & engineering	0.50	5%	1.60	17%	0.85	13%	0.21	5%
<b>3. ECONOMIC COMPETENCIES</b>	<b>5.04</b>	<b>49%</b>	<b>5.35</b>	<b>55%</b>	<b>2.68</b>	<b>40%</b>	<b>1.17</b>	<b>27%</b>
Reputation & Branding	1.35	13%	1.06	11%	0.53	8%	0.56	13%
Advertising expenditure	1.24	12%	0.84	9%	0.39	6%	0.51	12%
Market research/Branding	0.11	1%	0.22	2%	0.14	2%	0.05	1%
Training & Development	1.05	10%	2.33	24%	1.21	18%	0.34	8%
Continuing vocational training	-	-	-	-	0.61	9%	-	-
Apprentice training	-	-	-	-	0.60	9%	-	-
Business process improvements	2.64	26%	1.96	20%	0.94	14%	0.27	6%
Purchased	-	-	0.47	5%	0.51	8%	0.03	1%
Own-account	-	-	1.50	15%	0.43	6%	0.24	6%
<b>TOTAL INVESTMENT IN KBC</b>	<b>10.35</b>	<b>100%</b>	<b>9.65</b>	<b>100%</b>	<b>6.75</b>	<b>100%</b>	<b>4.28</b>	<b>100%</b>

➡ relatively weak correlation with TFP and export growth

# I. What's missing? Connectivity-related competencies

Measure an **additional type of KBC focused on KNM**:

## (3) economic competencies

### i. **absorption-related** (investments to facilitate absorption & make better use of technologies)

- advertising
- market research/branding
- training & development
- business process improvement

### ii. **Connectivity** (to facilitate capture & adaptation of technologies)

- **network building** (investments to learn from corporate partners, suppliers & buyers incl. locally-based MNCs and global value chains, universities and diaspora)
- **other investments that facilitate learning from global product knowledge**, and make knowledge transfer useful to the firm

# I. Exploring connectivity investments in KNMs

Chilean wine industry as ideal case study

- growth of 25% p.a. in 1990s
- share of world X in top 5
- 2<sup>nd</sup> most powerful brand in the world (*Intangible Business*, 2010)

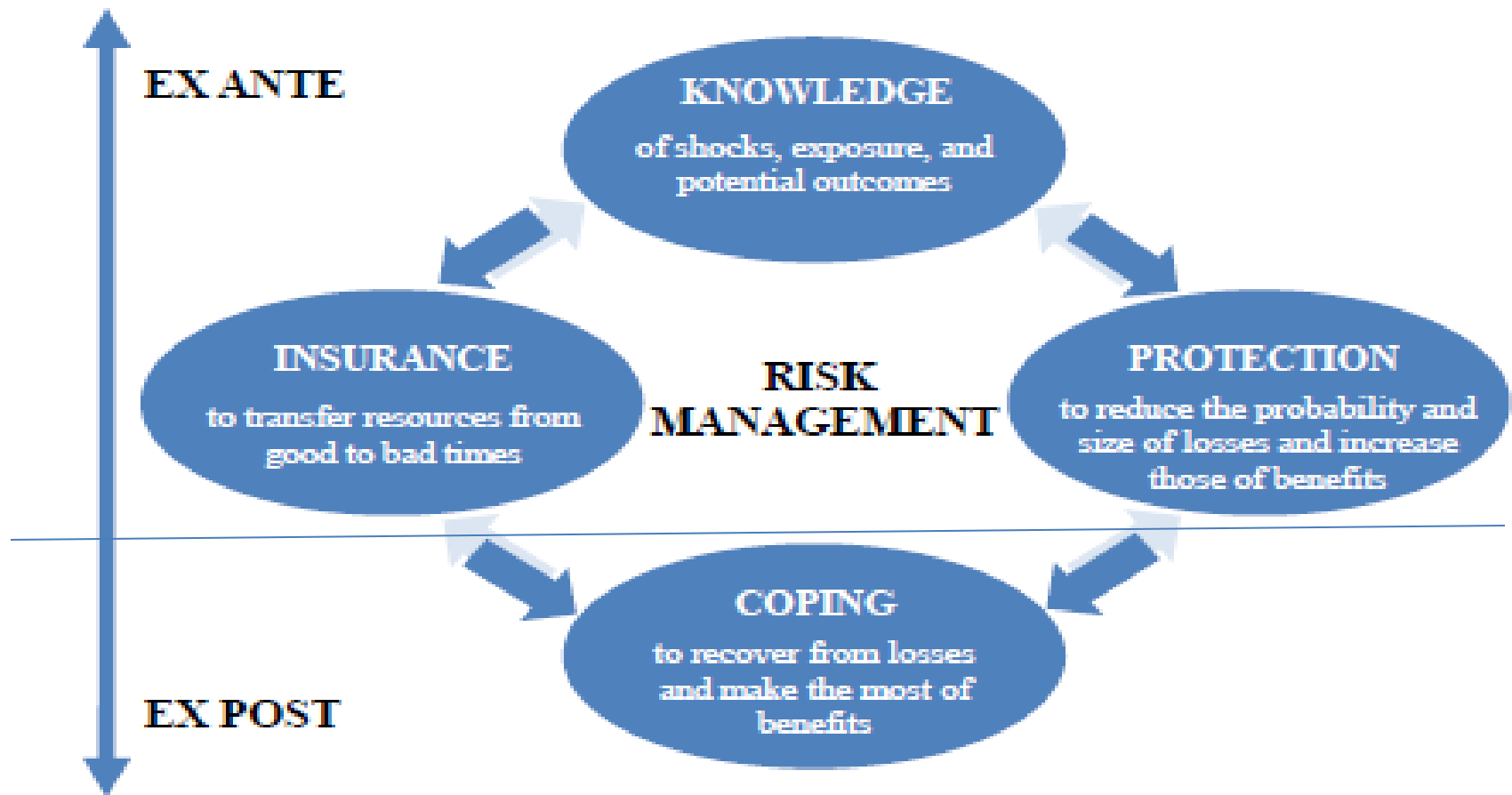
Pilot survey

- spending on connectivity linked to KNMs
  - on external consultants
  - on university & public research experts
  - on learning from industry associations, value chains, marketing channels
  - on in-house learning from global knowledge

Test hypotheses

- on most important correlates of export growth
- on spillovers across regions

## II. Understanding the role of KBC in managing risks



Investments in KBC = investments in firms' pillars of risk management,  
providing firms with abilities to commercialize technologies =  
**investments in the resilience of development outcomes**

### III. Policy examples

- (1) India: **DBT support of global consortia thru SPVs and domestic PPP support**
  - 78% of surveyed firms now co-develop
  - 86% of these jointly monitor via milestones & joint review processes
  
- (2) Chile: **CORFO TA Fund and subsidies**
  - for firms to hire global consultants
  - for “Technological capture trips”
  
- (3) Turkey: **How to support local learning beyond EU Customs Union**
  - upgrade quality standards to supply FDI export platform
  - improve managerial practices to eliminate delivery uncertainties
  - adopt co-development protocols

### III. “Making the policy case”: Unrealized benefits

#### (1) Benefits of measuring rather than estimating TFP as residual

- Document benefits:
  - unpack traditional TFP
  - measure importance of KBC types in specific industries relative to benchmarks
- Explore rationale for support (where government failure < market failure)



### III. “Making the policy case”: Unrealized benefits

#### (2) Benefits of **alliance between WAVES and KBC agenda**

- WAVES (Wealth Accounting and Valuation of Ecosystem Services):  
global partnership, launched 2010, to measure share of natural capital in national accounts, and promote its use in economic decision-making
  - Natural capital = minerals & energy, forest timber, agricultural land, fisheries, water + air & water filtration, flood protection, carbon storage, pollination for crops & habitat for wildlife services (values often not captured in markets)
- A similar “Beyond traditional GDP” agenda = boosting LT prosperity
- Build capacity to measure “both natural & knowledge K”, incl. “green KBC”
  - recent Brazil study breaks down green R&D spending beyond renewable energy including biodiversity (energy systems, sustainable resource extraction) and green agriculture (biotech and sustainability of agricultural production)
- Demonstrate benefits to policymakers

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