

# Extractive Industries and their Role in Lower Income Countries



***Tony Addison, Alan Roe, Evelyn Dietsche, Kathryn McPhail, Toni Aubynn and Andres Solimano***

*Introducing the book: Addison and Roe, Extractive Industries. The management of resources as a driver of sustainable economic growth and poverty reduction? Oxford University Press, 2018*

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# EXTRACTIVE INDUSTRIES

THE MANAGEMENT OF RESOURCES AS A DRIVER OF SUSTAINABLE DEVELOPMENT

ADDISON AND ROE

EXTRACTIVE INDUSTRIES

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'Mining, and indeed drilling for oil and gas, remain the chalk to the development cheese. In this day "the resource curse" is too often a catch-all concept to dismiss any positive impact that commodities might have on economic development. As this book carefully exposes the truth is much more pragmatic than that: natural resources have been part of development since the beginning, from bronze and copper to gold and iron, just as today lithium batteries and cobalt cellphones remain critical parts of our future. Handled correctly they offer huge payoffs to the countries where these minerals are found; managed badly they remain in the ground leaving other suppliers to benefit, or even worse they fuel a destabilising corruption. This book is a distillation of experience, good and bad, and a handbook of good practice.'

**Lord Mark Malloch-Brown**, Chair, International Crisis Group,  
former Deputy Secretary-General of the United Nations.

'An excellent, comprehensive, yet accessible book on the many challenges of resource development and how to avoid the worst pitfalls. *Extractive Industries* is structured so that a reader can dive into the expert detail of over thirty example rich chapters, from the edifying overview and ten messages, to the excellent links to UNU YouTube introductions. Governments, companies, and civil society activists can and should all learn from this publication.'

**Sir Mark Moody-Stuart**, Chairman of the Global Compact Foundation,  
former Chairman of the Royal Dutch/Shell Group and of Anglo American plc.

'The book provides careful analysis and a practical guide by a group of experts on how to turn resources from a curse to a blessing for inclusive and sustainable growth. This is a timely study on a challenging topic in economic development, and a must-read for resource-abundant countries and the global development community.'

**Professor Justin Yifu Lin**, Dean, Institute for New Structural Economics,  
Peking University; former Chief Economist of the World Bank.

'A large number of developing countries aspire to become major exporters of extractives, deriving significant revenue from this as the first step in their drive to transform their economies. This book provides a very comprehensive picture about what they can meaningfully expect in this endeavour, thus introducing significant realism into the policy debates that must take place.'

**Professor Ernest Aryeetey**, Secretary-General, African Research Universities  
Alliance Accra; Former Vice Chancellor, University of Ghana

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UNU-WIDER STUDIES IN DEVELOPMENT ECONOMICS

# Outline

1. Objectives and content

2. Main messages

3. The scope for effective policy interventions

4. Selected detail

- academic literature: institutions & governance
- all-of-government approach
- country issue - Ghana (regulatory)
- country issues – Chile (macro/fiscal)

5. Conclusions

# 1. Objectives of the book

1. To recognise the increased importance of extractives in the economies of many low and lower middle-income countries (LICs and LMICs)
2. To acknowledge the huge potential of extractives to boost sustainable economic transformation and development if properly managed
3. To assess how that potential is impacted by climate change policies
4. To recognise the large numbers of new *international* initiatives of the past 20 years designed to support the improved management of resources
5. To provide a comprehensive coverage of the multiple *domestic* policy and institutional areas that need attention if the potential is to be realised fully.
6. To also position extractives within the broader debate about the new industrial/structural policies
7. To pragmatically recognise the significant differences as between countries in terms of their abilities successfully to absorb major extractive investments, and example the different approaches that are called for.
8. To stress the imperative for an “all of government approach” in managing the extractives sectors

# Contents

- Part I: Overview and main messages – 1- chapter
- Part II: Minerals and oil and gas in the global economy – 3 chapters
- Part III: The academic literature and the resource curse – 3 chapters
- Part IV: Macroeconomic and fiscal management – 4 chapters
- Part V: National institutions of extractives management - 6 chapters
- Part VI: International institutional initiatives - 5 chapters
- Part VII: Leveraging direct impacts to sustainable development – 5  
chapters
- Part VIII: Capturing economic & social benefits at community level – 6  
chapters including a Concluding chapter



## 2. Main messages

1. Statistically since 1996 there has been a large increase in the dependence of LICs and LMICs on extractives: e.g. 61 out of 72 countries saw increases in export dependence with an average increase of 17 percentage points to 2014.
2. Many lower income developing economies have great potential to develop their Extractive Resources much further *should they choose to do so*.
3. *Diversification and structural transformation* of EI dependent economies is crucial for their long term and sustainable development and so should be central to all EI strategies - but giving explicit recognition to this is uncommon and it is difficult to achieve.
4. *Improved institutions* and governance more generally are vital to success but this is a complex multi-dimensional proposition - its *specifics* need to be made much clearer and narrow technocratic Institution-building has its limitations.

# Increasing export dependence (message 1)

## Selected countries from Table 3 in Roe and Dodd, Chapter 2

			1996	2012	2014	1996	2012	2014
1	Low	Benin	1%	21%	12%	5%	37%	26%
2	Low	Burkina Faso	8%	46%	50%	23%	46%	57%
3	Low	Central African Republic	56%	44%	45%	56%	45%	46%
4	Low	Chad	0%	0%	0%	0%	94%	94%
5	Low	Dem. Rep. of the Congo	72%	81%	78%	83%	92%	93%
6	Low	Eritrea	62%	61%	36%	63%	61%	36%
7	Low	Guinea	76%	60%	53%	81%	87%	92%
8	Low	Korea, Dem. People's Rep.	9%	16%	15%	11%	56%	50%
9	Low	Liberia	49%	24%	43%	50%	41%	44%
10	Low	Madagascar	8%	18%	34%	11%	20%	36%
11	Low	Mali	8%	42%	47%	10%	43%	50%
12	Low	Mozambique	6%	36%	42%	8%	72%	68%
13	Low	Niger	21%	22%	21%	40%	57%	57%
14	Low	Rwanda	3%	39%	45%	3%	47%	55%
15	Low	Sierra Leone	28%	51%	46%	29%	51%	46%
16	Low	Togo	33%	28%	18%	40%	43%	34%
17	Low	United Republic of Tanzania	4%	35%	33%	4%	37%	34%
18	Low	Zimbabwe	15%	27%	19%	17%	38%	31%
19	Lower-middle	Armenia	25%	45%	47%	27%	50%	52%
20	Lower-middle	Bhutan	3%	15%	16%	23%	36%	27%
21	Lower-middle	Bolivia	30%	30%	27%	43%	81%	81%
22	Lower-middle	Cameroon	5%	5%	3%	40%	5%	57%
23	Lower-middle	Congo	2%	4%	8%	87%	92%	92%

## Future potential (message 2)

In their 2013 Report - *Reverse the Curse* – McKinsey Global Institute estimated that global investments in oil & gas and minerals would need to increase at *double* the historical rates seen through 2012 to meet new demands and replace existing supply.

Even allowing for the large climate change adjustment that they assumed they anticipated a major increase in annual investment over previous historical levels.

There is little doubt that a large part of that investment will be located in low and middle-income economies



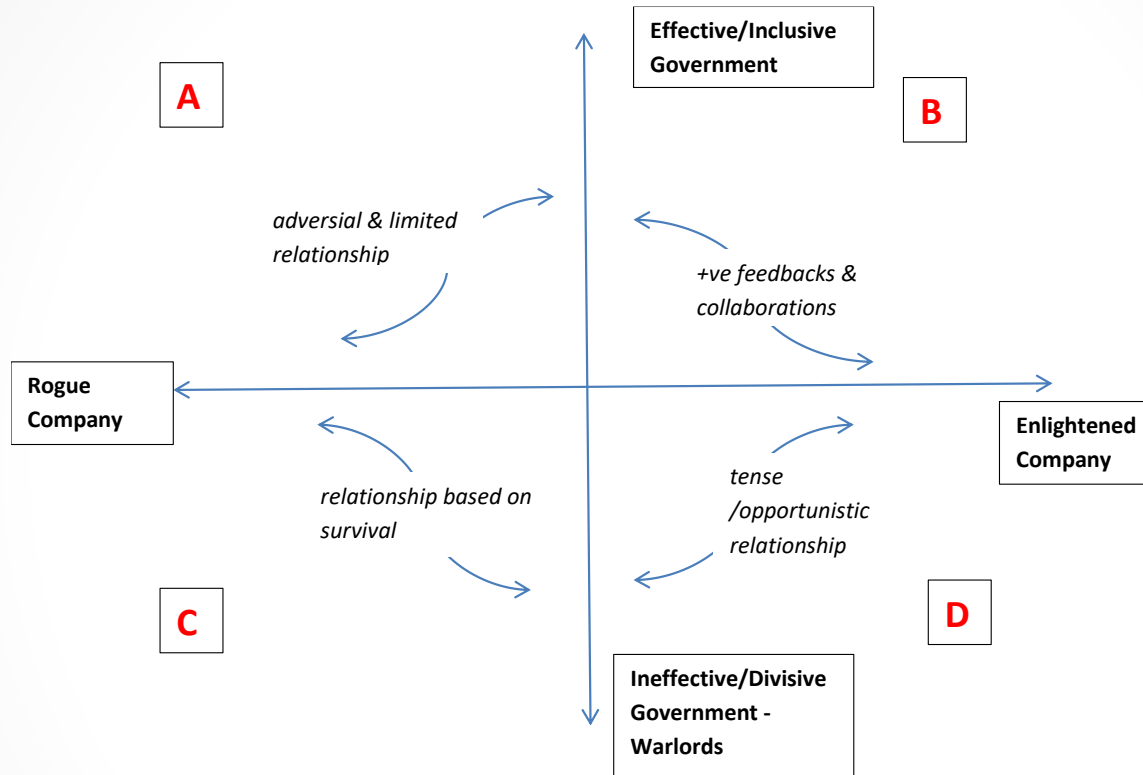
## Main messages continued

5. Effective and inclusive government working with enlightened companies is the ideal combination, but we observe many deviations from this in the real world. Ineffective and divisive government combined with rogue companies is the worst situation but is arguably becoming less common.
6. Corporate practices have improved (become more enlightened) and there is now an abundance of very good case examples of what good practice looks like in many areas of EI management.
7. There are now many more ways (and institutional arrangements) by which interventions by external (international) stakeholders, especially aid donors and NGOs, can improve outcomes.
8. Climate change agreements and the associated policy actions will create new winners and new losers among the extractives sectors but the nature and directions of the impacts for many lower income countries are complex and so an additional challenge for their EI strategies

# 3. Assessing the scope for effective policies

(message 5)

A Simple Taxonomy of Governance and Company Behaviours (Addison and Roe Chapter 1)



- This assessment assumes that extractives companies and governments need to partner effectively to produce good long term outcomes
- Data from the NRGi Resource Governance Index (2017) enables us to position most countries on the vertical axis of this taxonomy

## 4 (1) Selected detail: the academic literature

### **Evelyn Dietsche**

- a. The curse of the one-size-fits-all fix
- b. Political economy and governance
- c. New industrial policy and the extractives

# A. The curse of the one-size-fits-all fix

- **Re-evaluating what we know about extractives and economic development**
  - Growing interest in extractives and development from 1990s, proposing that these industries bring about poor governance, poor spending decisions, fiscal imprudence...
  - Prompting the question how to overcome these vices and redressing them by prescribing 'good institutions' as a remedy...
  - Turning towards positive story of 'extractives-led growth', underpinned by international initiatives promoting 'best practices'...
- **But: mixed record** on whether the proposed remedies have worked; tendency to prescribe one-size-fits-all solutions...
- Diverse contexts demand diverse solutions: **no quick fixes** to positive institutional change and better governance of the sector!
- Fast project development poses a challenge...and diversification is key - but how to build linkages (and respective limitations) need to be better understood.

## B. Political economy and governance

- Critiquing the proposition that ‘good governance’ safeguards against poor outcomes by turning to the question of **positive institutional change**.
- ‘Good sector governance’ has been equated with ‘good institutions’. Thus, sector ***governance reforms*** have also been equated with ***positive institutional change*** - the basis for several international initiatives targeting resource rich countries.
- Looking back: variance in structural-institutional variables can explain variance in outcomes. But this does not offer immediate solutions for policy interventions.
- Reframing ‘*how to prevent poor outcomes*’ in terms of: *what do we know about how positive institutional change is actually brought about?*
- Looking towards ‘deeper’ institutional literature to inform what ‘institutions’ are and how they come about and how they get changed.
- Using a seminal framework from this literature (O. Williamson), chapter points out flaws and emphasises that deeper institutional improvements than those usually suggested in the context of sector governance reforms are key to whether host countries can transform their economies on the back of extractive resources.
- The resource sector governance literature does not actually offer too much help on the questions at stake... (e.g. see above: how to diversify on the back of the sector)

# C. New industrial policy and extractives

## What does the broader literature on Industrial Policy say with relevance for the extractive industries?

- (New) industrial policy is back...  
(1) disappointment with pro-poor development agenda; (2) Climate concerns calling for 'green' industrial policy; (3) Disappointment with neoliberalism and globalisation – pro-active IP.
- No consensus: opinions are divided in practice...around a set of 'themes': risk of 'state failure'; the process of discovery and learning; setting and pursuing socio-economic objectives; how to improve productivity; comparative (institutional) advantages; political economy of institutional change.

## At this point in time, the IP debate raises more questions for extractives than it provides answers:

- Trajectory of phases: (1) the promise of state-led industrialisation (1950s to 1970s); (2) trust in sector liberalisation (1980s to early 2000s); (3) the promise of extractives-led development (since mid-2000s) – see above.
- Theory VS practice: complying with or defying comparative advantages?
- Local content: IP by a different name - with a particularly narrow focus on backward linkages/supplier development.
- Environmental policies and the green economy: structural transformation at every level but affecting extractive resources differently - not least conditioned by the investment choices of the financial sector divesting and moving towards renewables

## **4 (2) Selected detail: complexity - an all-of-government approach**

**Kathryn McPhail**

- A. The link to the SDGs
- B. Why an all-of-government approach?
- C. Risks and benefits to governments

# UN SDGs: a framework for business value creation and partnerships for development



- Countries often do not have a ‘full picture’ of resource sectors’ contribution to FDI, Exports, GDP, Revenues and Employment + forward projections
- ‘All of government’ approach helps to coordinate the large number of government agencies – national and local
- How can governments and companies work together to achieve these Goals?



# Why do we need an 'all of government' approach?

Area	Overview
Resource sector governance	<ul style="list-style-type: none"> <li>▪ Is there natural resource legislation which defines the licensing process or role of regulators?</li> <li>▪ Is there accurate, accessible geological data to encourage high quality investment in the extractives?</li> </ul>
Infrastructure	<ul style="list-style-type: none"> <li>▪ Is there a joint roadmap for infrastructure development to benefit local communities?</li> </ul>
Community engagement	<ul style="list-style-type: none"> <li>▪ Is there a robust process of consultation with communities proximate to oil, gas and mining projects?</li> <li>▪ Are there methods of dispute resolution for local communities impacted by extractive projects?</li> </ul>
Environmental protection	<ul style="list-style-type: none"> <li>▪ How are environmental and social impacts of investment projects assessed?</li> <li>▪ Are there opportunities to invest in renewables? Resource companies are huge consumers of energy</li> </ul>
Local content	<ul style="list-style-type: none"> <li>▪ Are the local content plans being developed jointly with companies?</li> <li>▪ What is the status of the local supply chain?.</li> </ul>
Revenue Management	<ul style="list-style-type: none"> <li>▪ What is the ranking on Transparency International Corruption Perceptions Index?</li> <li>▪ What are the revenue sharing agreements with sub national entities? Is there visibility of benefits?</li> </ul>
Social and economic development	<ul style="list-style-type: none"> <li>▪ Is there a comprehensive and inclusive long term vision for the country and its citizens to benefit from its natural resources?</li> </ul>

# A collaborative approach is key

	Benefits to different stakeholders		
Area	Government	Local communities	Extractive companies
<b>Resource sector governance</b>	<ul style="list-style-type: none"> <li>Better exploration data reduces risk of “selling off” resources too cheaply</li> </ul>	<ul style="list-style-type: none"> <li>Transparency on licensing processes raises likelihood of more local benefits</li> </ul>	<ul style="list-style-type: none"> <li>Reduced risk leads to lower hurdle rates on projects</li> </ul>
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>Ability to support financing of critical infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Better access to critical infrastructure (e.g., roads, ports, energy)</li> </ul>	<ul style="list-style-type: none"> <li>Reduced costs from sharing infrastructure with operators</li> <li>Better community relations</li> </ul>
<b>Community engagement</b>	<ul style="list-style-type: none"> <li>Communicating effectively with communities (jobs) reducing tensions</li> </ul>	<ul style="list-style-type: none"> <li>Greater participation in projects and how to benefit</li> </ul>	<ul style="list-style-type: none"> <li>Resilient communities</li> </ul>
<b>Environmental protection</b>	<ul style="list-style-type: none"> <li>Accelerate energy transition</li> </ul>	<ul style="list-style-type: none"> <li>Stronger local environmental performance</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in risk of lawsuits and post-production clean up</li> </ul>
<b>Competitiveness &amp; Fiscal Policy</b>	<ul style="list-style-type: none"> <li>Capture greater tax take without comprising competitiveness</li> </ul>	<ul style="list-style-type: none"> <li>Projects more robust to commodity cycle, reducing local economic volatility</li> </ul>	<ul style="list-style-type: none"> <li>Working with government to improve project financials</li> </ul>
<b>Local content</b>	<ul style="list-style-type: none"> <li>Develop additional source of jobs and growth</li> </ul>	<ul style="list-style-type: none"> <li>Access to direct and indirect jobs; supplier development</li> </ul>	<ul style="list-style-type: none"> <li>Better access to skilled labour</li> <li>Reduction in risk of poor local content policy</li> </ul>
<b>Revenue management</b>	<ul style="list-style-type: none"> <li>Better management of commodity price fluctuations</li> </ul>	<ul style="list-style-type: none"> <li>Greater potential to share in benefits of local resources</li> </ul>	<ul style="list-style-type: none"> <li>Lower currency volatility</li> </ul>
<b>Social and economic development</b>	<ul style="list-style-type: none"> <li>Avoid ‘silos’ and promote ‘all of government’ approach</li> </ul>	<ul style="list-style-type: none"> <li>Diversification of job opportunities leading to stronger local economy</li> </ul>	<ul style="list-style-type: none"> <li>Other growth engines takes pressure off resources sector to drive jobs growth</li> </ul>

# Developing a long term vision and an 'all of government' approach?



## Phase 1: Map the current and future evolution of the resource sector

- Measure the direct and indirect economic and social impacts (positive and negative, quantitative and qualitative, national and local)
- Develop potential future scenarios for investment and production in resources sector to 2030, based on pooled industry data



## Phase 2: Understand the implications for the country

- Analyse the data to understand the potential impact on FDI, exports, GDP, tax revenues, and employment and forward projections
- Understand requirements for skills, infrastructure, financial management and other key issues



## Phase 3: Identify the priorities to maximise benefits

- Work together with the government officials, civil society, and representatives from industry in a multi-stakeholder approach
- Aim is to understand the strategic priorities for ensuring that potential benefits are maximized and gaps addressed.
- Areas include:
  - Skills development
  - Local content
  - Shared infrastructure
  - Government revenues

## 4.(3) Country issues – Ghana (regulatory)

# Regulatory Structures & Challenges to Developmental Extractives

By

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UNU-WIDER Development Conference.

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# Regulatory Structures

- Regulation policies are the ‘rules of the game’ governing decision-making by socioeconomic actors
- Purposeful, designed and implemented mainly by government agencies.
- Objective to shape future outcomes in ways that is more desirable than otherwise expected
- A well-functioning regulatory system must t balance accountability, transparency, and consistency

# Role of effective regulatory framework

- Guides the promotion of investments in the sector
- Helps establish effective procedures for the extraction and management of the utilization of such resources.
- Essential for the promotion of economic growth and development years (Jalilian et al. 2007; World Bank 2004).

# Overview of Ghana's Mining Sector

## Traditional Minerals

- Gold, Bauxite, Manganese & Diamonds
- Others: Limestone, clays, kaolin, granites, solar salt etc.

## Mining Sector Investment

- Some US\$ 17 billion invested in mining sector (1983-2016) & has become highest gross foreign exchange earner.

## Gold Production

- 2<sup>nd</sup> in Africa after South Africa and 9<sup>th</sup> in the World
- Produced 115 MT of gold (3.8 million oz. in 2016) & 134 MT of gold (4.4million oz. in 2014)

## Sector Contribution

- 16% of Govt. Revenue (Domestic Tax ) in 2016, 27% in 2012
- Employs some 22,000 people (large scale mining sector) & about 1 million in small scale mining.

## Status of Mineral Rights

- As of December 2016, 265 local and foreign companies held Prospecting/Reconnaissance licenses. Additionally, 13 large scale mines are currently operating in the

# Trajectory of Mining Regulations in Ghana

## Pre 1957

- Colonial economy regulations dictated largely to address colonial exigences

## Post-colonial

- 1958-1980: Largely state controlled. Establishment of State Mining corporations
- Post 1980s:
  - new generation of liberalization approaches, including the privatization of state enterprise and very extensive deregulation.
  - Key legislative and Institutional reforms: Passage of MML 1986 (PNDCL 153) Amended Act 1993, Act 475, Amended since 2007, MML 2006(Act 703)
  - Mincom and EPA establish in 1986 and 1994 respectively.

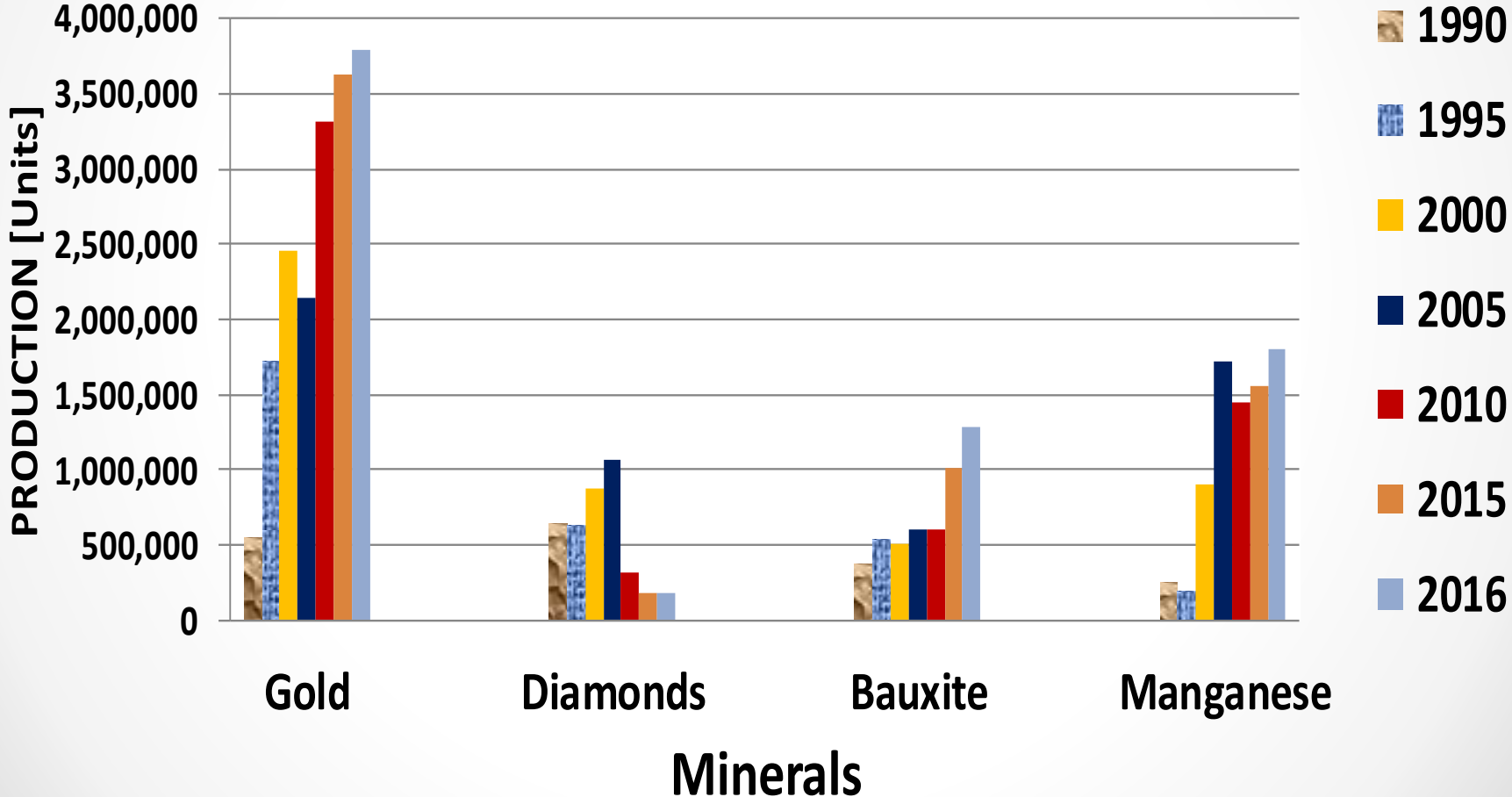


# Impact of Post 1980 Regulation Policies

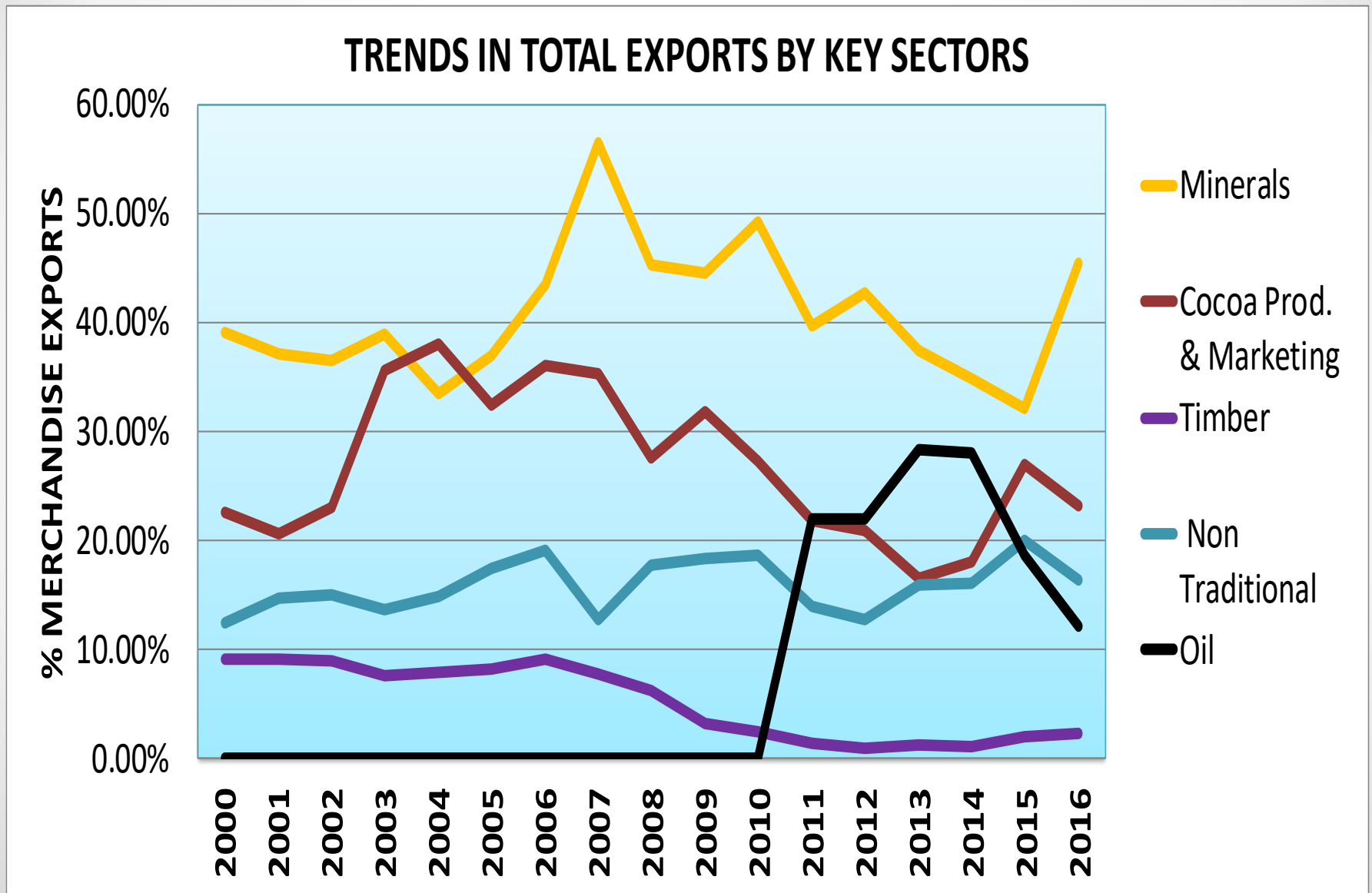
- Investment
- Minerals production
- Foreign Exchange/Merchandised exports
- Employment
- GDP growth
- Local content

# Sector performance – mineral production

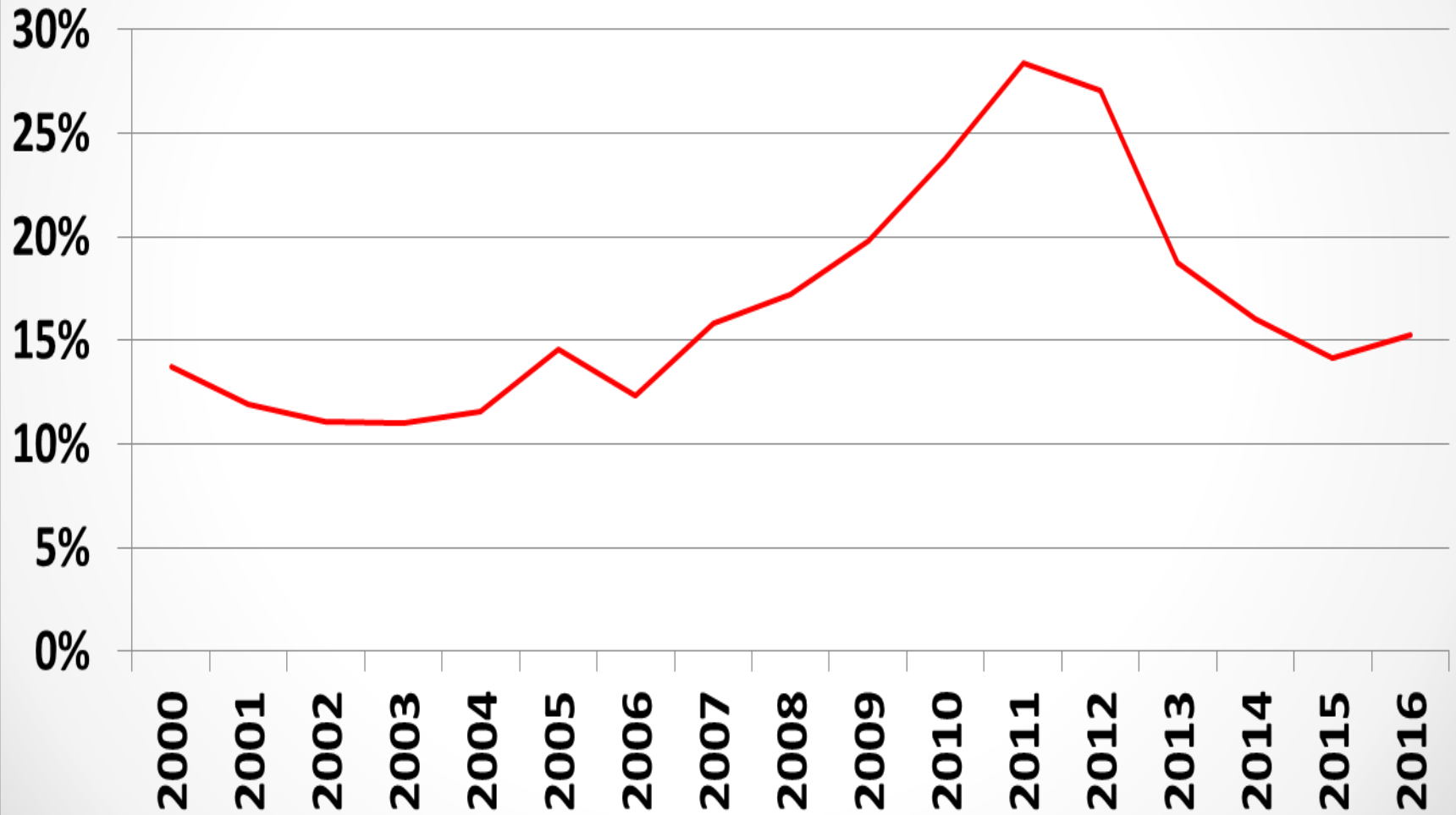
## Trends in Traditional Mineral Production



# Sector performance – merchandise exports



# MINING SECTOR CONTRIBUTION TO DOMESTIC TAX (%) - [2000-2016]



# Some Regulatory Challenges

- Multiple regulations and inter-institutional conflicts
- Capacity of Regulators
- Political will and interference
- The balancing act of dealing with LSM and local ASM

# Conclusions

- The role of natural resources extraction in the socio-economic development and transformation of resource-endowed LICs is no longer a myth. Need to accept the the reality
- Strengthen regulatory institutions and build their capacity
- Politicians to give institutions space to operate
- Need to improve inter-institutional collaboration and partnership
- Regulation by assistance not insistence. Concept of regulation must shift from suspicion and policing to support and assistance
- Reduce bureaucracy through the wise use of technology to improve efficiency

## **4(4) Country issues - Chile**

**Macro-fiscal management of extractives, volatility  
and stabilization**

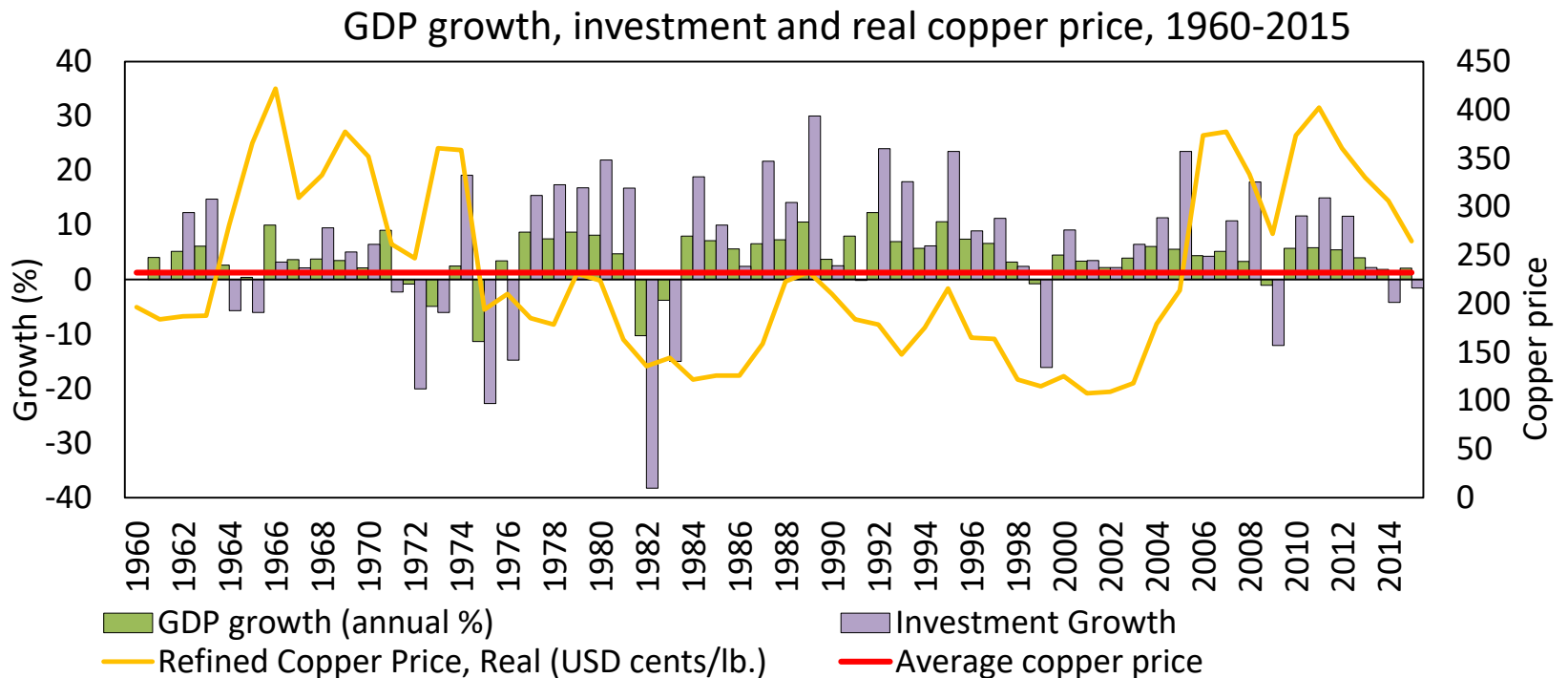
**Andres Solimano**

# Background

- The Chilean economy is still dependent on the copper sector, an important extractive industry.
- Variations in copper prices is a main driver of macroeconomic fluctuations (growth, investment, the balance of payments and fiscal positions).
- Chile, since the 1980s, has introduced stabilization funds and macro institutions to dampen the domestic effects of external shocks and internal fiscal pressures.
- Evaluating the effectiveness of these institutions.



# Copper Prices, Growth and Investment Cycles in Chile



Deflator: U.S. Producer Price Index (PPI, all Commodities)

Source: Own elaboration based on WDI, Central Bank of Chile, and Cochilco.

# Depressions and recessions (1970-2018)

Recession of 1972-73 GDP and investment fall.

## **Big crises**

Depression of 1975 GDP drops by -12 percent, investment declines by 25 percent and unemployment rises to near 20 percent.

Financial crises and the depression of 1982-83: GDP falls by -16 percent, investment collapses by 35 percent and unemployment rises to over 25 percent.

## **Milder recessions**

Recession of 1999: GDP declines by -1.2 percent and investment falls by 15 percent.

Recession of 2009: GDP declines by -1.5 percent, investment is cut by -10 percent and unemployment increases to about 10 percent.

# Stabilization funds to promote macro stability

- Creation of copper stabilization fund in 1987.
- Fiscal responsibility law in 2006 created two sovereign wealth funds:
  - Economic and social stabilization fund (2006)
  - Pension stabilization fund (2006).

## An evolving macro-policy framework

- Inflation targeting (early 1990s).
- Exchange policy
- Target zones in the 1990s.
- Flexible exchange rate regime since 2000.
- Fiscal rule (2001)
- International reserve policy of the central bank.

# What have been the results of these policies?

## Achievements

- Reduction in severity of recessions following adverse external shocks.
- Avoidance of financial crises in the last 30 years.

## Challenges

- Stabilization funds and wealth funds need more explicit triggering criteria when to use them.
- Risk of over (under) insurance. Too much (too little) resource accumulation in the funds.
- Fiscal rule depend on accurate prediction of long run copper prices and potential GDP (not easy).
- How to reduce exchange rate volatility under a flexible exchange rate regime.

# Final thoughts

**Tony Addison**

## International initiatives/support (message 7)

A wide range of these have been launched in the past twenty years: Tony Hodge in Chapter 18 identifies at least **45** examples including:

- The Global Mining Initiative (GMI) 2000-02
- OECD Guidelines for Multinational Enterprises (1996 rev. through 2011)
- United Nations Global Compact (convened 2004)
- United Nations Voluntary Principles on Security and Human Rights (from 2000)
- Equator Principles established in 2003, revised in 2006
- Extractive Industries Transparency Initiative (EITI) – 2003
- IFC Principles: Social and Environmental Sustainability – 2006
- Initiative for Responsible Mining Assurance (IRMA) -2006
- Natural Resource Charter -2010
- ICMM Principles and Sustainable Development Policy framework -2003 with further guidelines e.g. on communities and indigenous peoples – later
- Global Reporting Initiative – 2000
- Responsible Mineral Development Initiative, RMDI (World Economic Forum) -2010
- Africa Mining Vision - 2011

# Plausible hypotheses (message 7)

- The effectiveness of the numerous international initiatives is likely to be greatest in Zone B of our taxonomy but very limited in Zone C
- The *company-based* initiatives of the past 20 years (chapters 20, 28 and 29 by Tomlinson, McDonald and Mondoloka) will have moved more extractive companies to the right on the horizontal axis of that taxonomy
- The combined weight of all the international initiatives will have had some helpful impact even on countries in Zones A and D (also demonstrated in Chapter 27 by Travis, Buckley and McCulloch)



# 5. Conclusions

1. No serious development scholar or practitioner can today ignore the role of extractive industries in the big debates about sustainable development.
2. The economic significance of the extractives sector is likely to increase especially for countries with resources vital for the low-carbon future
3. It is important to acknowledge that the national and international initiatives of the past two decades have already improved the general performance quality of many host governments and many extractives companies
4. The many dimensions of extractives policy analysed in the book should not be seen as separate distinct areas of policy. Success requires the welding together of the component policies around a strongly maintained and coordinated vision – easy to say but hard to do !
5. Resolution of the bitter controversies around extractives will require a significant broadening of traditional methods for assessing the impact of extractive industries on their host economies: a big leap from familiar M&E and EIAs to the more comprehensive assessment of “contribution” as defined by Hodge (chapter 18)
6. The management of extractives is a complex and demanding task but we in the development community can do it much better than we have in the past!

# Thank you

*See also UNU WIDER E4D for all the component chapters and several blogs*

*Any comments please to:  
alan.roe14@gmail.com*

