



The impacts of liberalisation and privatisation in the energy and mining sectors Case studies from sub-Saharan Africa and Latin America

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Publication date:
2004

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):
Haselip, J. A., & Hilson, G. (2004). The impacts of liberalisation and privatisation in the energy and mining sectors: Case studies from sub-Saharan Africa and Latin America. Sound/Visual production (digital)

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The impacts of liberalisation and privatisation in the energy and mining sectors

Case studies from sub-Saharan Africa and
Latin America

James Haselip & Gavin Hilson

4th February 2004

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2. Mining and utilities targeted by IFI's
3. Impacts of reform
 - Mining in Sub-Saharan Africa
 - Electricity in Argentina
4. Conclusions

Drivers for reform

- Economic crises
- Loss making state-owned and run industries
 - External debt
 - High inflation
- Liberalisation and privatisation to allow foreign investment and introduce competition
- Market logic: to create optimal efficiency

Mining and utilities targeted by IFI's

Why these industries?

- Mining sector critical to many nations, especially in SSA: a major source of revenue
- Many state owned public utilities in LA very poor, Argentina and other nations 'testing' reform policies

Impacts of reform

- 1) Case Study #1: Mining in sub-Saharan Africa
- 2) Case Study #2: Electricity Reform in Argentina

Case Study #1

Mining in sub-Saharan Africa

Mining in Sub-Saharan Africa

1. Minerals in Sub-Saharan Africa
2. Reform and Mining in Sub-Saharan Africa
3. Macroeconomic Impacts
4. Impacts on Communities
5. Recommendations



Mining in Sub-Saharan Africa

1. **Minerals in Sub-Saharan Africa**
2. Reform and Mining in Sub-Saharan Africa
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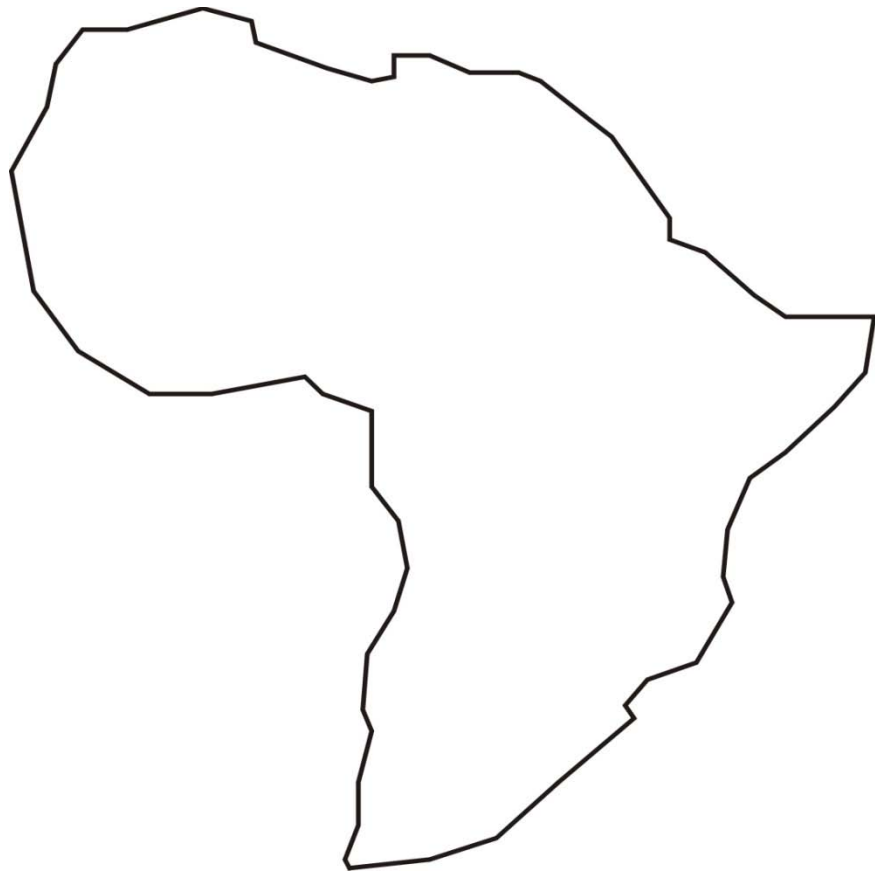
Minerals in Sub-Saharan Africa

- ▶ Policymakers: Mine Restructuring Facilitates:
 - Enhanced economic growth
 - Increased government revenues
 - Job creation
 - Technology transfer
 - The construction of improved infrastructure
 - Growth of downstream industries
- ▶ Sub-Saharan Africa is Endowed with Vast Mineral Deposits, Including...

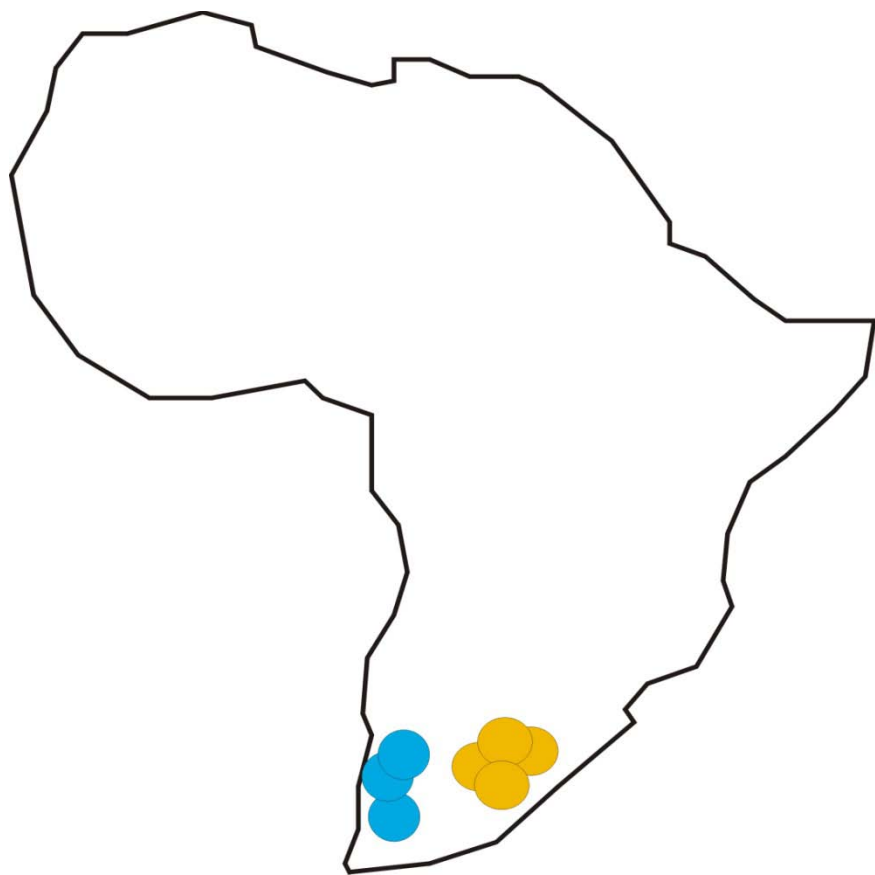
Minerals in Sub-Saharan Africa

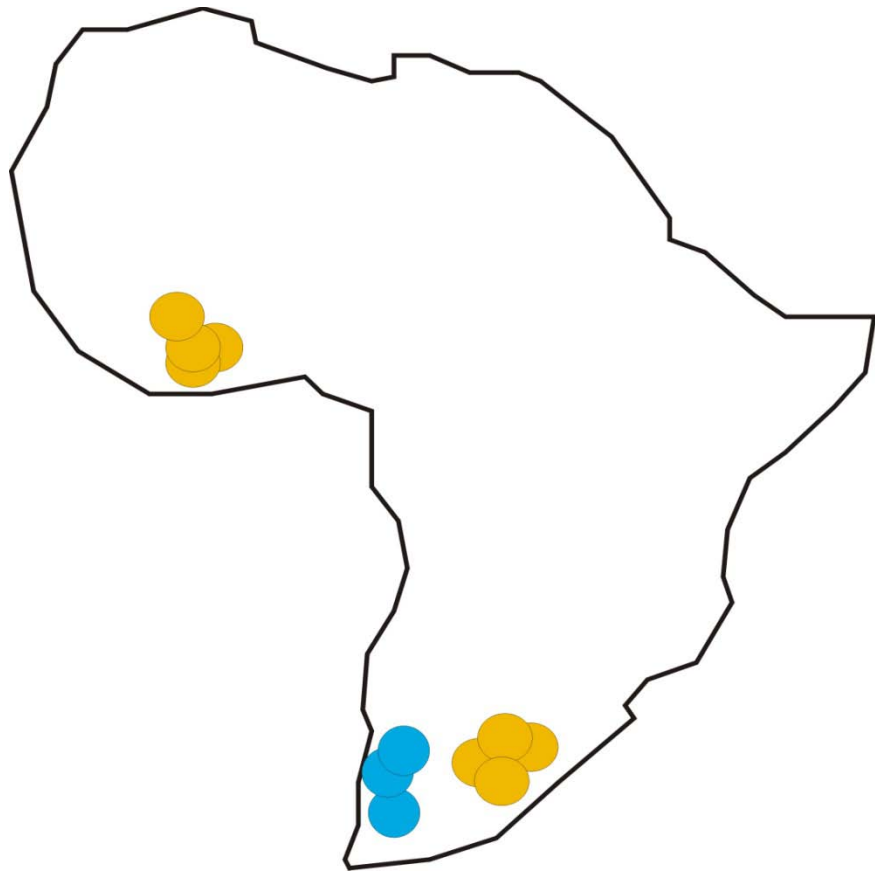
- 99% of chrome reserves
- 85% of platinum
- 70% of tantalite
- 68% of cobalt
- 54% of gold
- 50% of diamonds

**Overall, 60 metals and mineral resources
30% of the world's reserves**

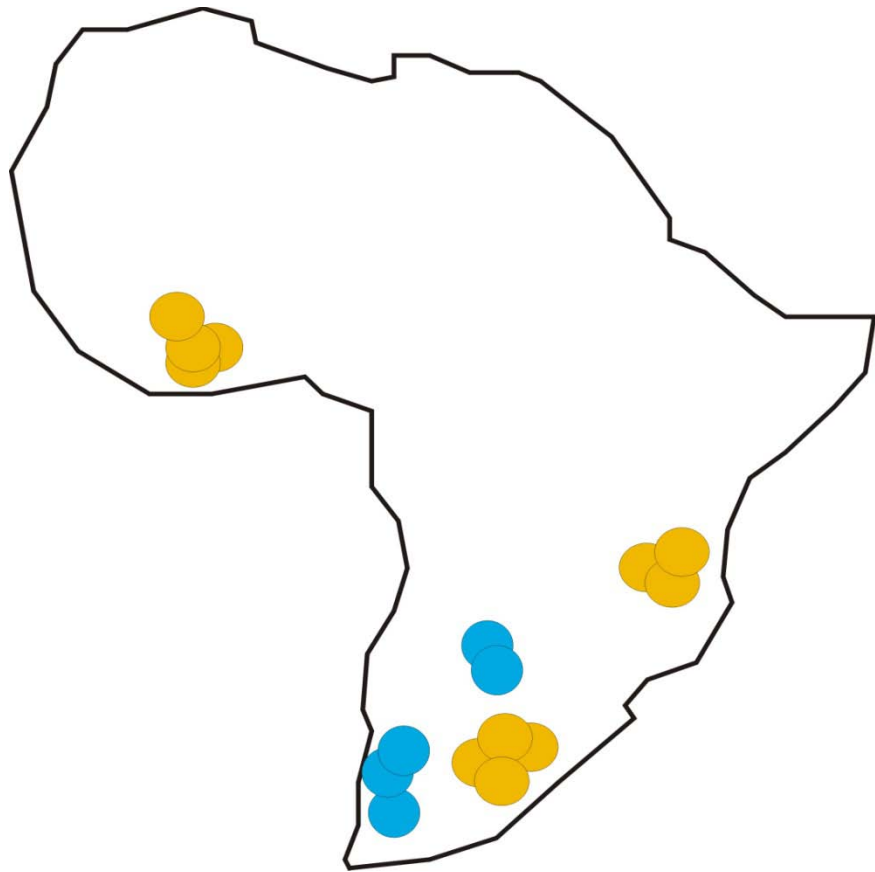


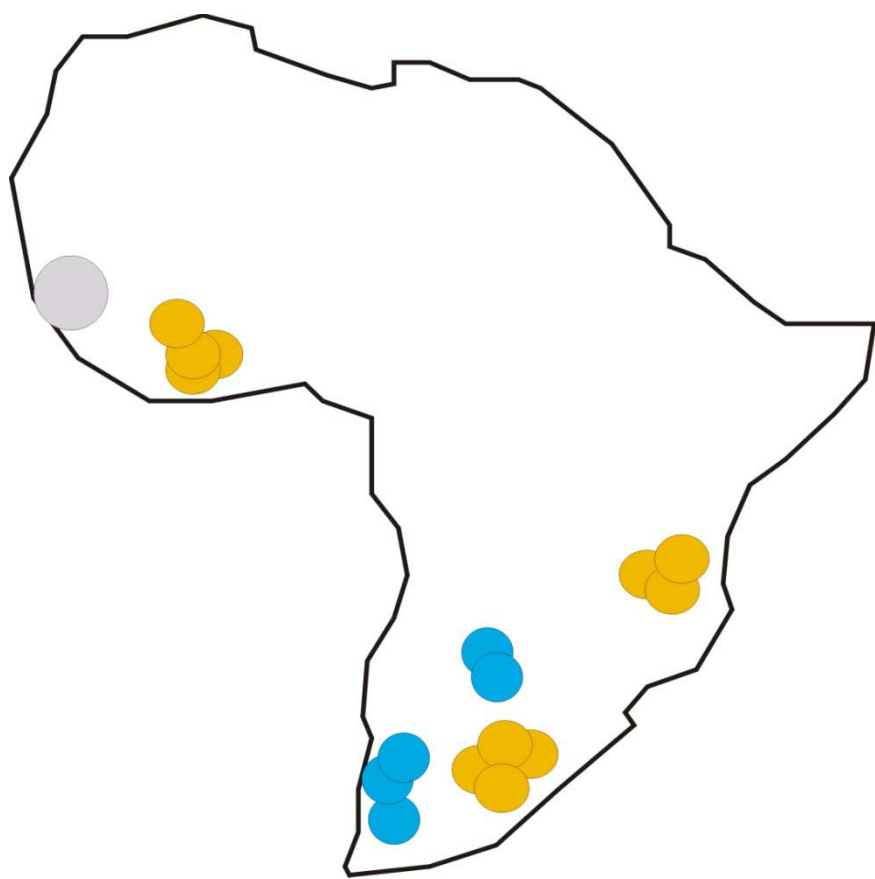


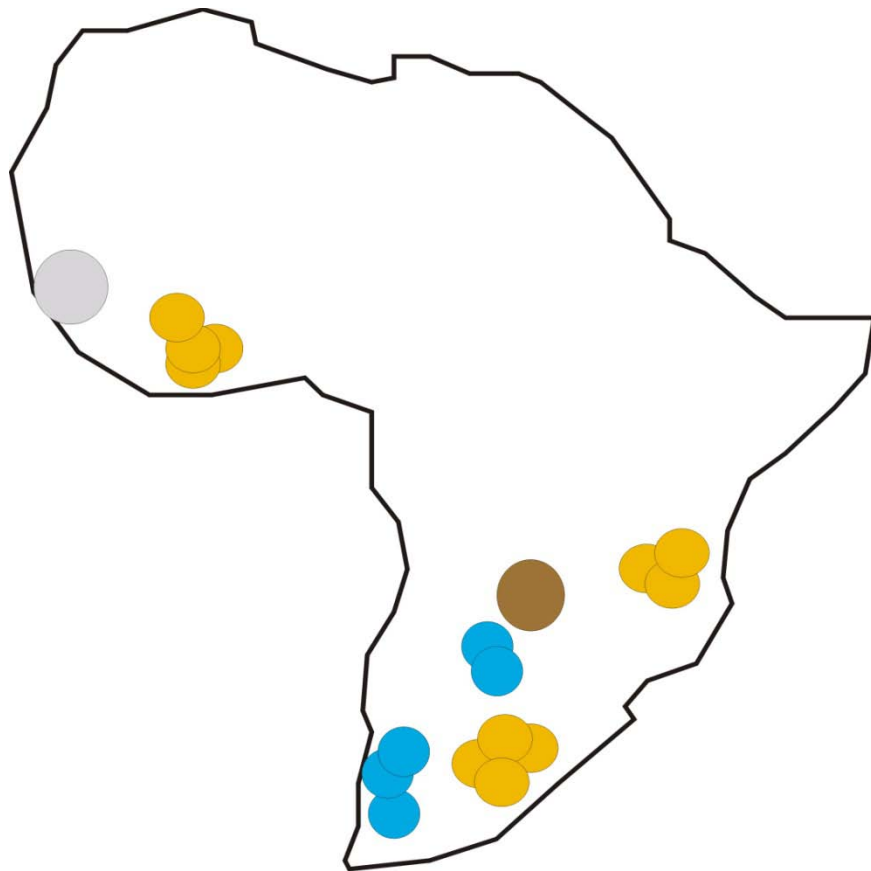






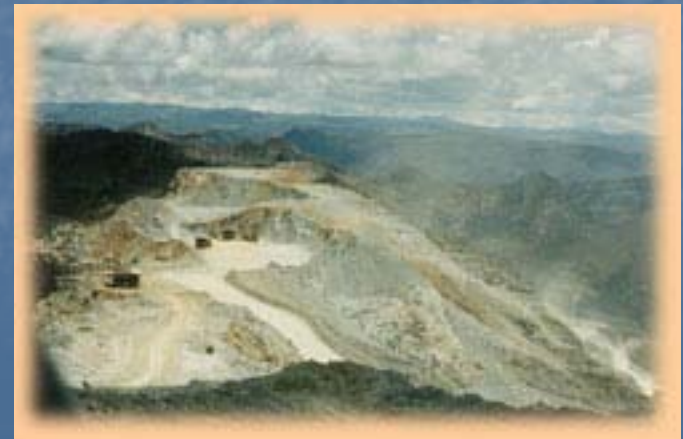






Mining in Sub-Saharan Africa

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Mining in Sub-Saharan Africa

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Reform and Mining in Sub-Saharan Africa

ECONOMIC RESTRUCTURING

► Mineral Dependency for GDP

57% of exports

Country	Mineral Product Exports (as percentage of GDP), 1990-1999
Guinea	84.7
Democratic Republic of Congo	80
Zambia	74.8
Niger	70.8
Botswana	70
Namibia	55.4
Sierra Leone	50

Source: Weber-Fahr, 2002

Reform and Mining in Sub-Saharan Africa

ECONOMIC RESTRUCTURING

- ▶ **Mineral Dependency for GDP**
- ▶ **World Bank: ↑ Mineral Extraction, ↑ Export Growth = ↑ Government Revenues**
- ▶ **US\$2.75 billion in loans in the form of**
 - ▶ **SA programs**
 - Incorporated within medium-long term economic restructuring devices
 - Incorporated within stabilization packages
 - ▶ **Sectoral reform lending**
 - ▶ **Technical assistance projects**

Top African Recipient Countries of World Bank Support for Mining Industries, 1990-2000 (millions of US bucks)

Country	Amount
Cameroon	534
Tanzania	402
Zambia	391
Ivory Coast	199
Mali	108

Source: Pegg, 2003

Reform and Mining in Sub-Saharan Africa

ECONOMIC RESTRUCTURING

- ▶ **Process: amend regulations and policies**
 - **Redefine the role of the state (joint venturing, partners, etc.)**
 - **Private access to resources**
 - **Security of mining title**

Licensing Schemes

Country	Multi Licensing Scheme
Guinea	R/Ex, MC
Madagascar	Ex, MC
Mali	R, Ex, MC
Mozambique	Ex (2 stages), MC
Namibia	Pr, R, Ex, MC
Tanzania	Pr (2 stages), MC, Gemstone License

R: Reconnaissance

Pr: Prospecting

Ex: Exploration license/permit

MC: Mining concession/permit

Source: Naito et al., 2001

Reform and Mining in Sub-Saharan Africa

ECONOMIC RESTRUCTURING

- ▶ **Process: amend regulations and policies**
 - **Redefine the role of the state (joint venturing, partners, etc.)**
 - **Private access to resources**
 - **Security of mining title**
 - **Freedom to operate on a commercial basis**
 - **Appropriate environmental considerations**
 - **Competitive and stable fiscal terms (taxes, exports costs, levies, subsidies)**

Reform and Mining in Sub-Saharan Africa

ECONOMIC RESTRUCTURING

Tax breaks, etc.

- ▶ Guinea: eliminate US\$13/t export levy on bauxite ore
- ▶ Ghana: elimination of import duties
- ▶ Tanzania: 100% of mine ownership
- ▶ Mali: waived import duties, low royalty rate (3%)

Mining in Sub-Saharan Africa

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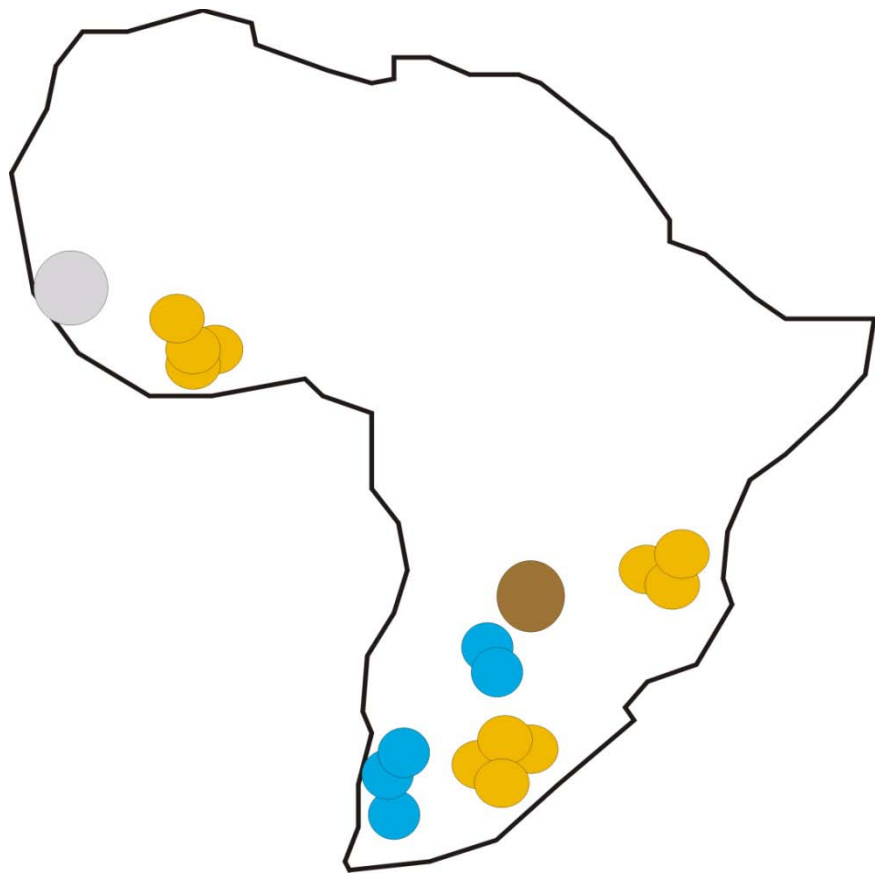
Mining in Sub-Saharan Africa

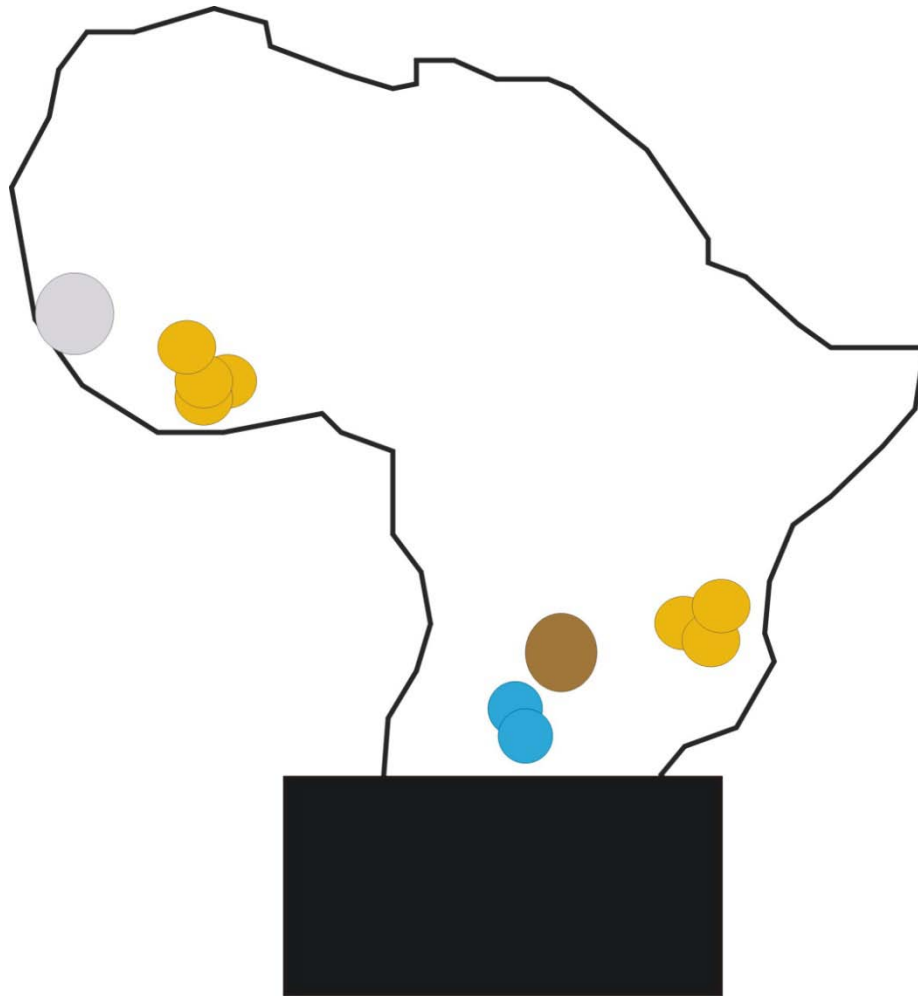
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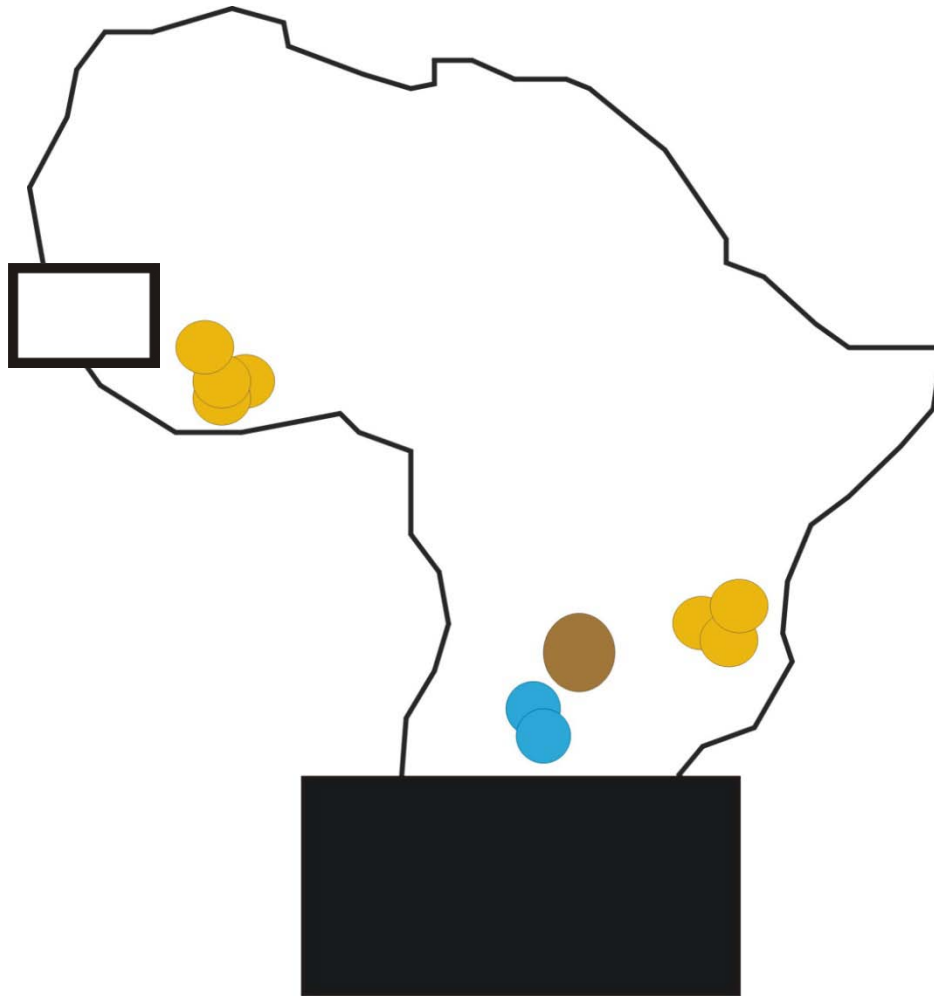


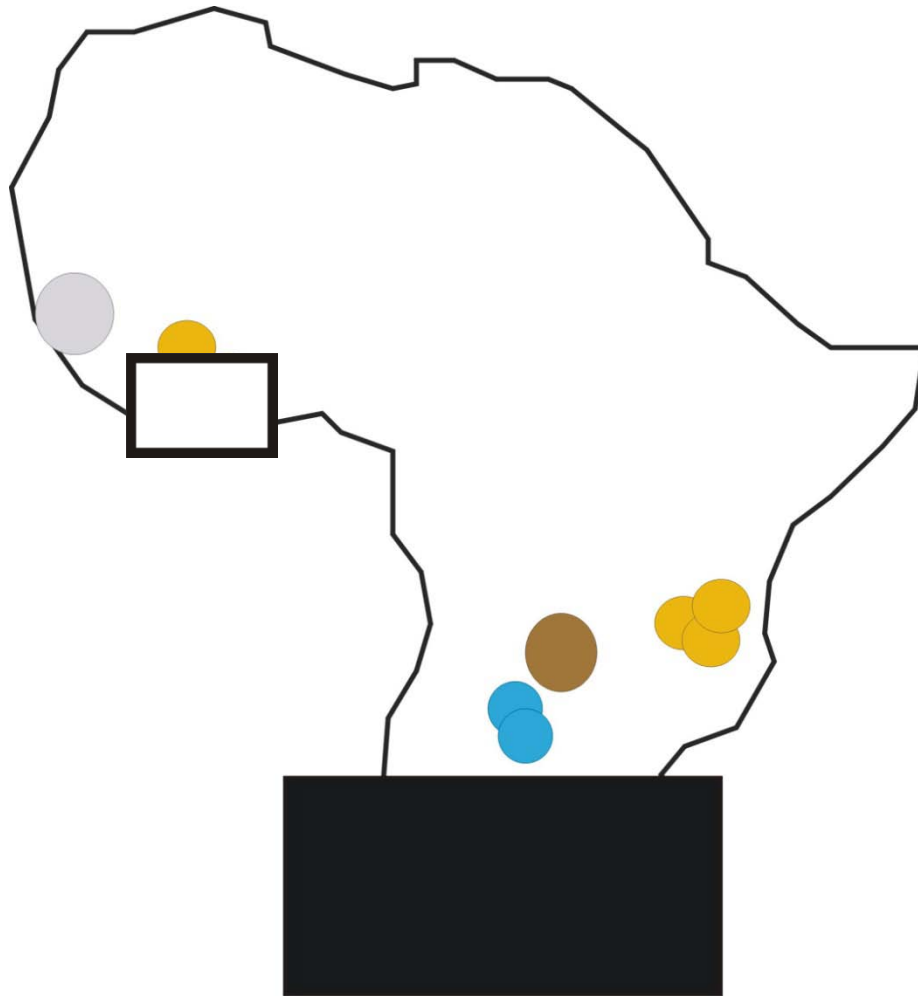
IMPROVEMENTS????

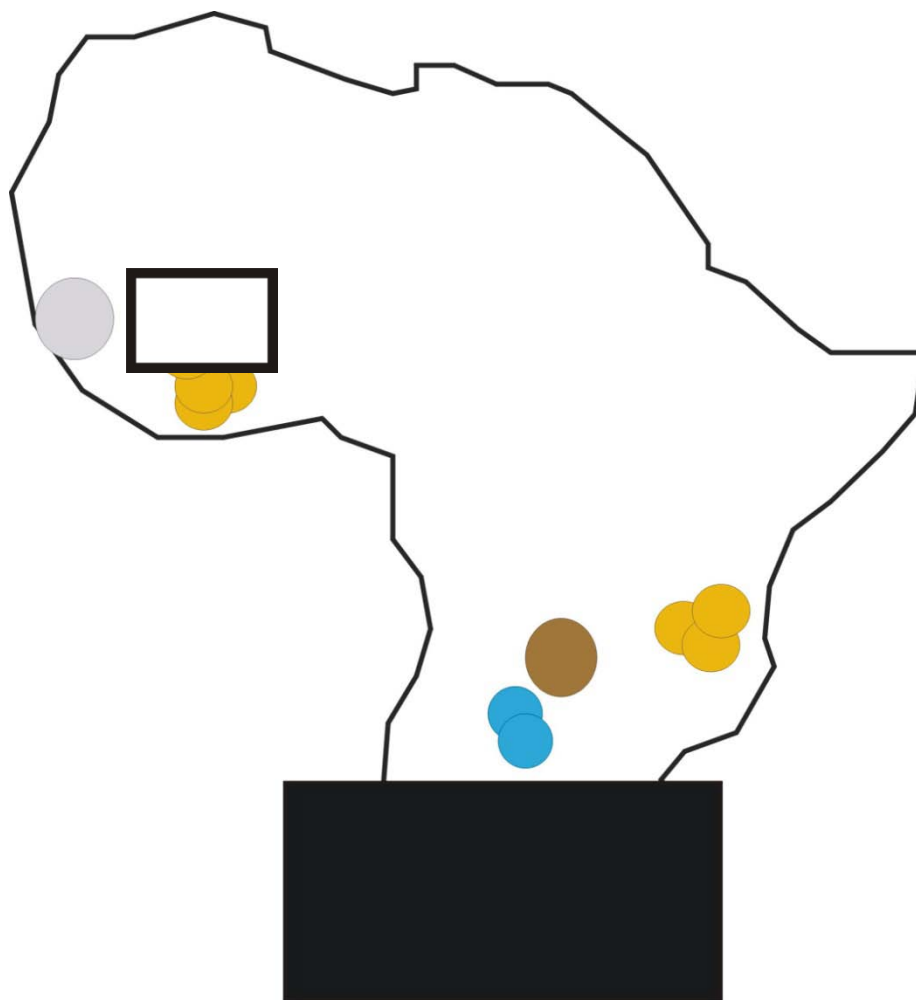
ACHIEVEMENTS????

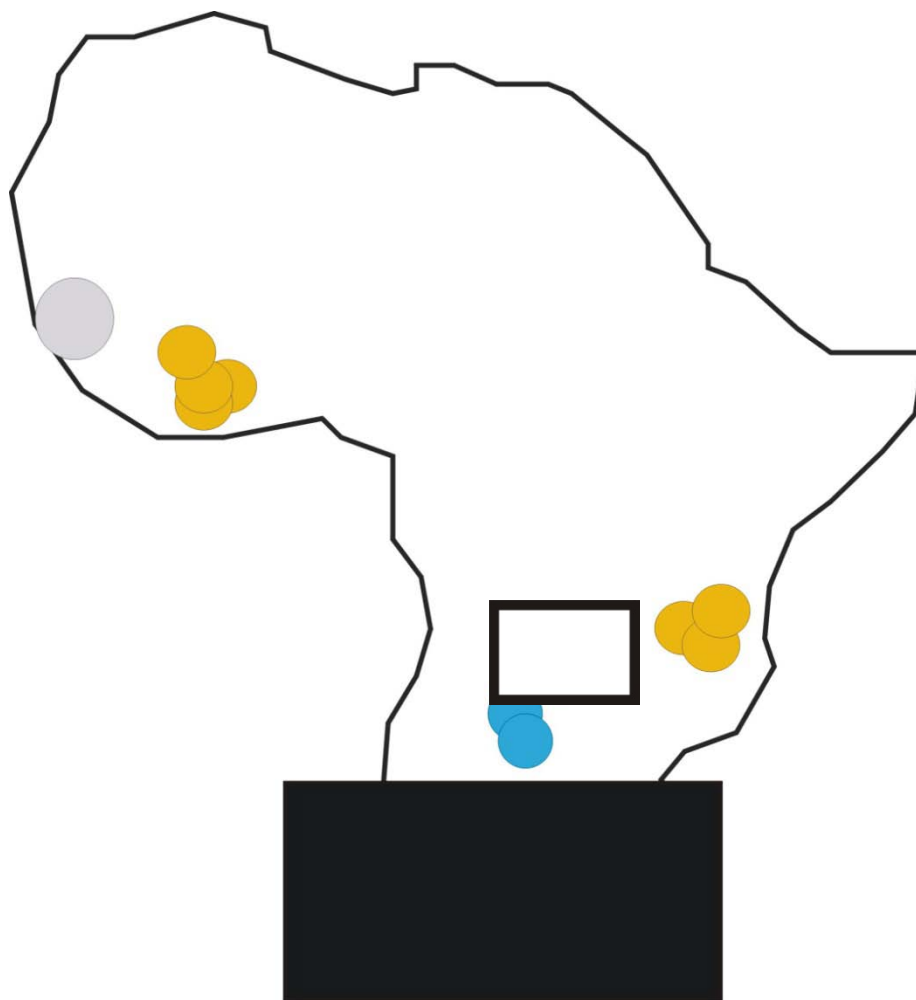


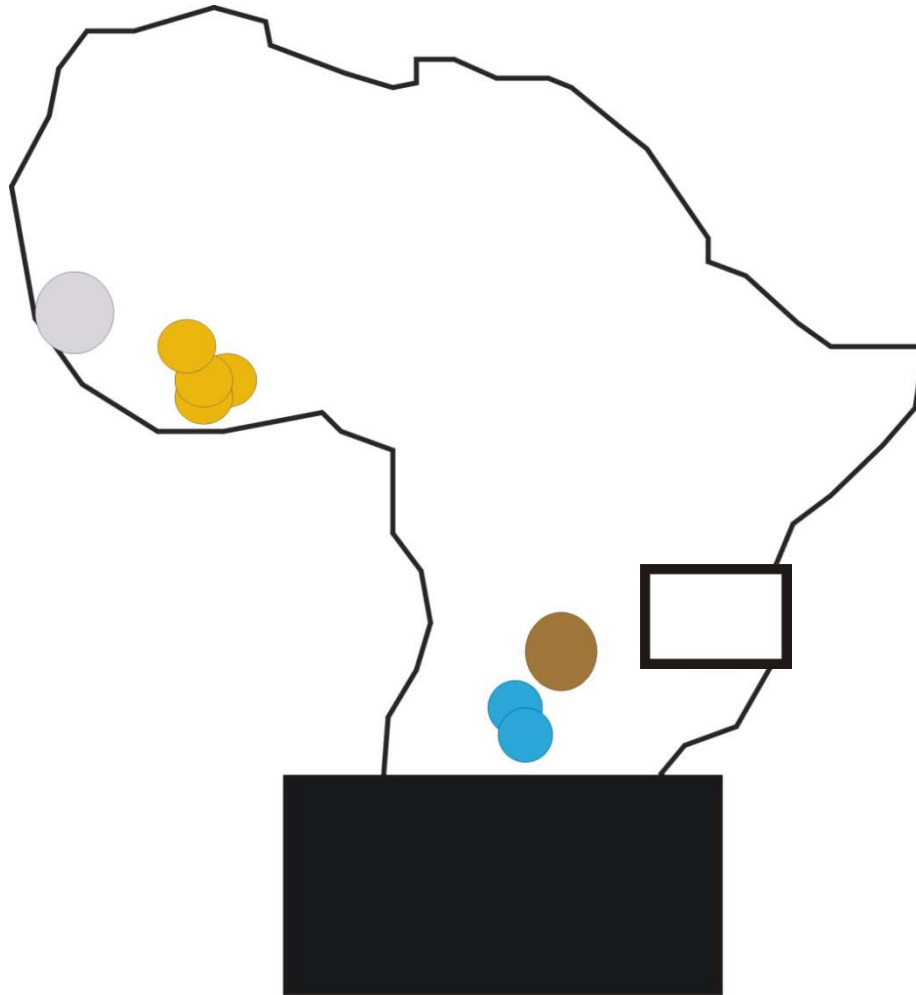












Country	Start of Economic Reform	New Mining Law	Start of Exploration Boom	Start of Mineral Production	Typical Projects
Tanzania	Early-1990s	1998	Mid-1990s	Early-2000s	Bulyanlulu
Burkina	Early-1990s	1997	Mid-1990s	Not yet	Bombore
Madagascar	Mid-1990s	1999	Not Yet	Not Yet	Amba-tovy
D.R. Congo	1997	Not Yet	Not Yet	Not Yet	Tenke
Ghana	1980s	1986	Late-1980s	Early-1990s	Ashanti – Obuasi

Macroeconomic Impacts

- ▶ Ghana since launch of SAP, 1983: increase in gold (500%), diamond (200%) increase in bauxite production (700%)
- ▶ Tanzania: In past five years, annual diamond production has doubled, and gold production, risen from 232 kg to 31,000 kg
- ▶ Mali: Annual Gold Production has tripled in the past 6 years

BUT.....

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Impacts on Communities

Revisit the arguments of reform:

- Enhanced economic growth
- Increased government revenues
- Job creation
- Technology transfer
- The construction of improved infrastructure
- Growth of downstream industries

ENHANCED ECONOMIC GROWTH?

TWO THINGS STICK OUT...

- ▶ Within SSA economies (mining exports >50%), GDP growth per capita declined -2.3%, 1990-1999, or, in general miniscule
 - Burkina (1.4%)
 - Ghana (0.1%)
 - Madagascar (-1.7%)
 - Zambia (-2.3%)
- ▶ Protracted Indebtedness: 34 sub-Saharan African countries are still considered by the Bank to be “Heavily Indebted Poor Countries”; HDI?

Increased Government Revenues













Increased Government Revenues

- ▶ **Massive Tax Breaks: Too Generous an Investment Climate?**
 - **Abolishment of export taxes**
 - **Capital allowances increase 20%**
 - **Reduction in Royalty Rates**
 - **Reduced Corporate Income Tax**

Increased Government Revenues

- ▶ Most Money is Taken out of the country

A Reality!!!

Increased Government Revenues

► Most Money is Taken out of the country:

Mineral Exploitation Factor:

Country	Contribution to GDP (\$millions)	Value of Exports (\$millions)	MEF%
Zambia	210	585	178
Malia	204	657	221
Ghana	238	692	190
Angola	467	682	46
Tanzania	125	302	140

Increased Job Creation and Technology Transfer

- ▶ Massive Job Layoffs (e.g. Zambia and Ghana), worsened by a depressed gold price
- ▶ Expatriates vs. General Labourers
- ▶ Capital intensive but not labour intensive: capital-to-job ratio
 - ▶ e.g. Mali: 1 job for every US million invested
- ▶ Technology transfer: unproven, minimal transfer b/c state mines are taken over, and the balance are artisans

Improved Infrastructure and Downstream Industries?

- ▶ Investments in Communities are often a fraction of profits/expenses
- ▶ Relocation debacles
- ▶ Downstream industries?: most have not emerged, and under adjustment most SSA's manufacturing sectors declined

Additional Problems

- ▶ Intense Land Use Competition
- ▶ Environmental Problems
 - Are Environmental Agencies Effective?
 - Most Established in the 1990s
 - Tarkwa, Ghana – cyanide spillage

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Recommendations

- ▶ Overhaul the legal and policy framework to impose stronger social and environmental responsibility
- ▶ Transparency through effective coordination among public sector mining support institutions
- ▶ Now companies are here, implementation of enforceable tax provisions to maximize contributions to communities

Recommendations

- ▶ Competent independents to conduct cost-benefit analyses
- ▶ Improved community interaction
- ▶ Radical reviews of policies on relocation, resettlement and compensation to take into account the needs of the impoverished

Case Study #2
Electricity Reform in
Argentina

Utilities sector investment in Latin America / Argentina

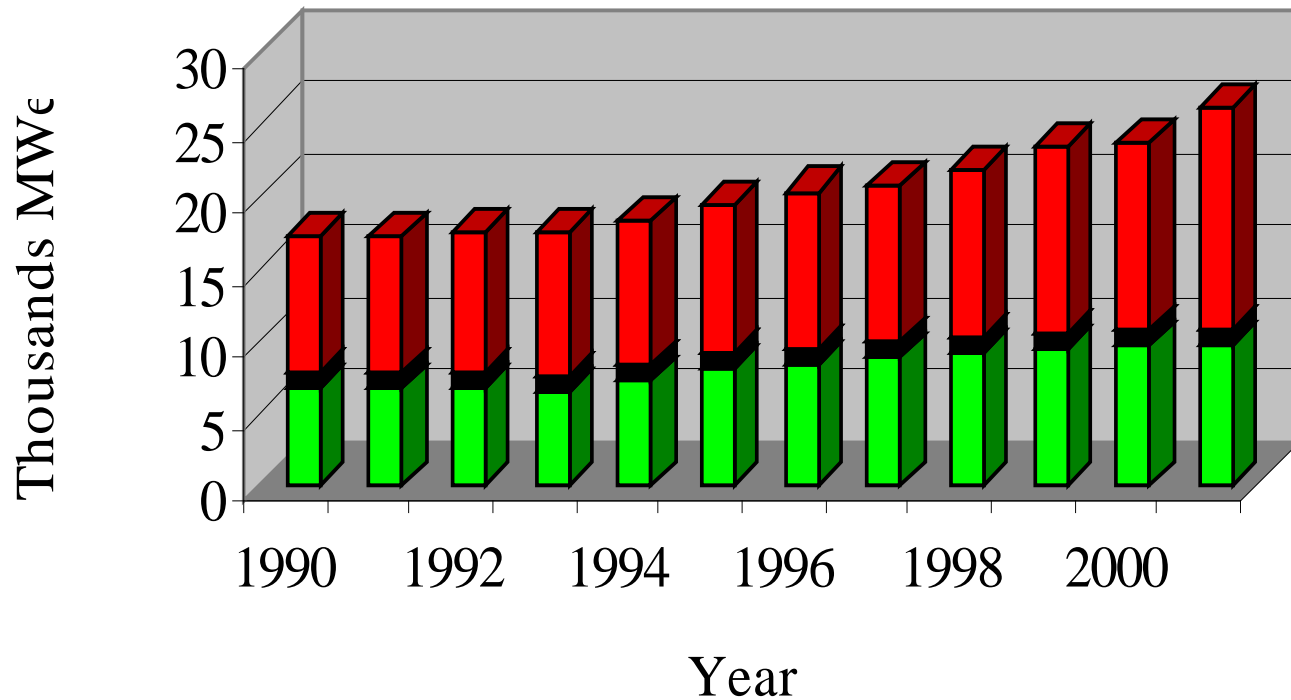
- A key element of the ‘Washington Consensus’
- Latin America major recipient of utility reform...private investment US\$236.5 billion between 1990 and 1998
- LA accounts for nearly 50% of all utilities investments in developing countries
- Argentina received US\$ 23.38 Billion private investments in Energy projects 1992-2000

Change in Argentine electricity market structure

- Vertical disintegration
- Competitive Generation
- Private monopolies in T & D
- Independent regulatory body
- 2002 installed capacity 22,831 MW...
- 36% hydro, 59% thermal and 5% nuclear.
- Total installed capacity increased by 42% since 1992

Installed Electricity Generation Capacity in Argentina, 1990-2001 (source: EIA)

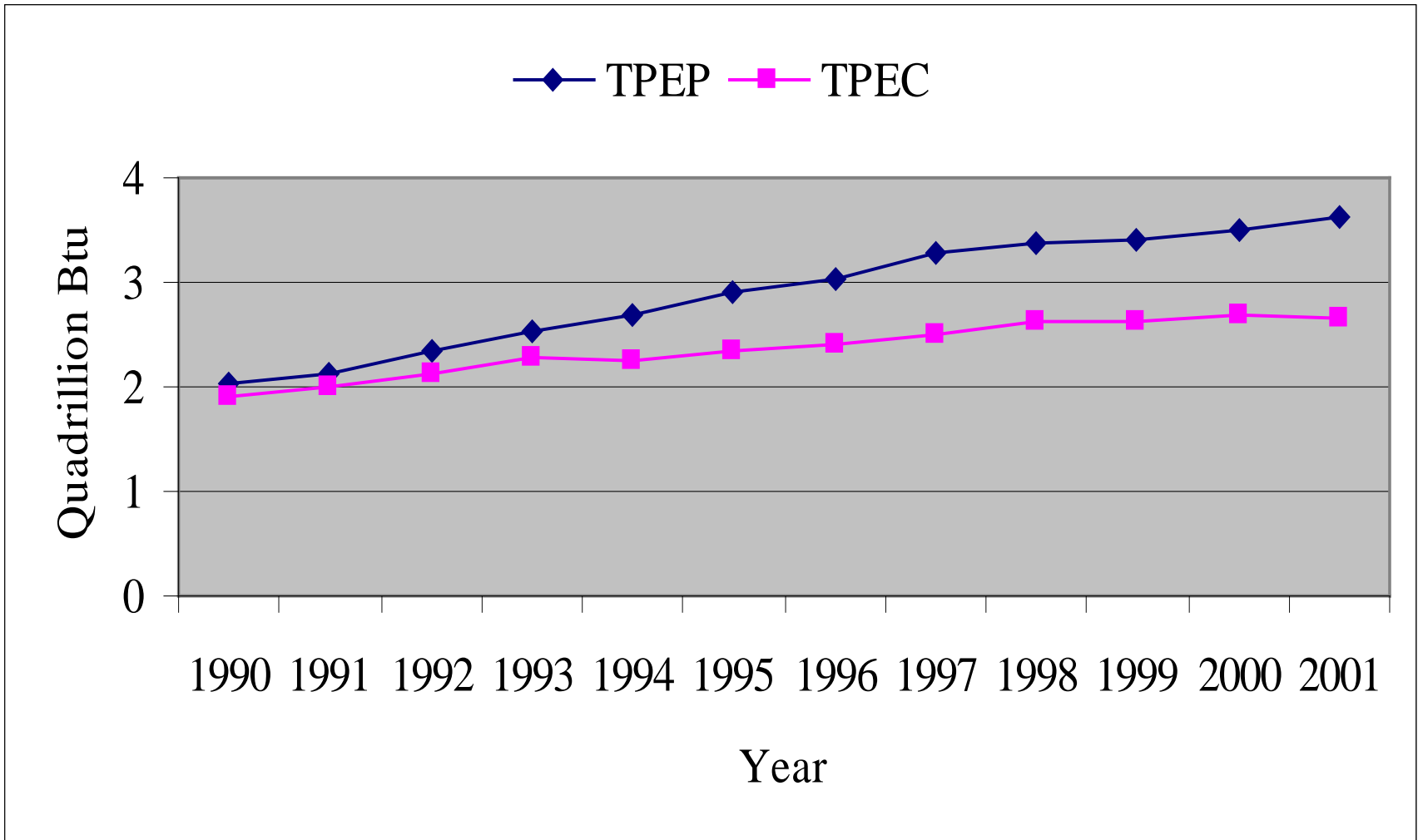
- Hydroelectric
- Nuclear
- Geothermal/Solar/ Wind/Biomass
- Conventional Thermal



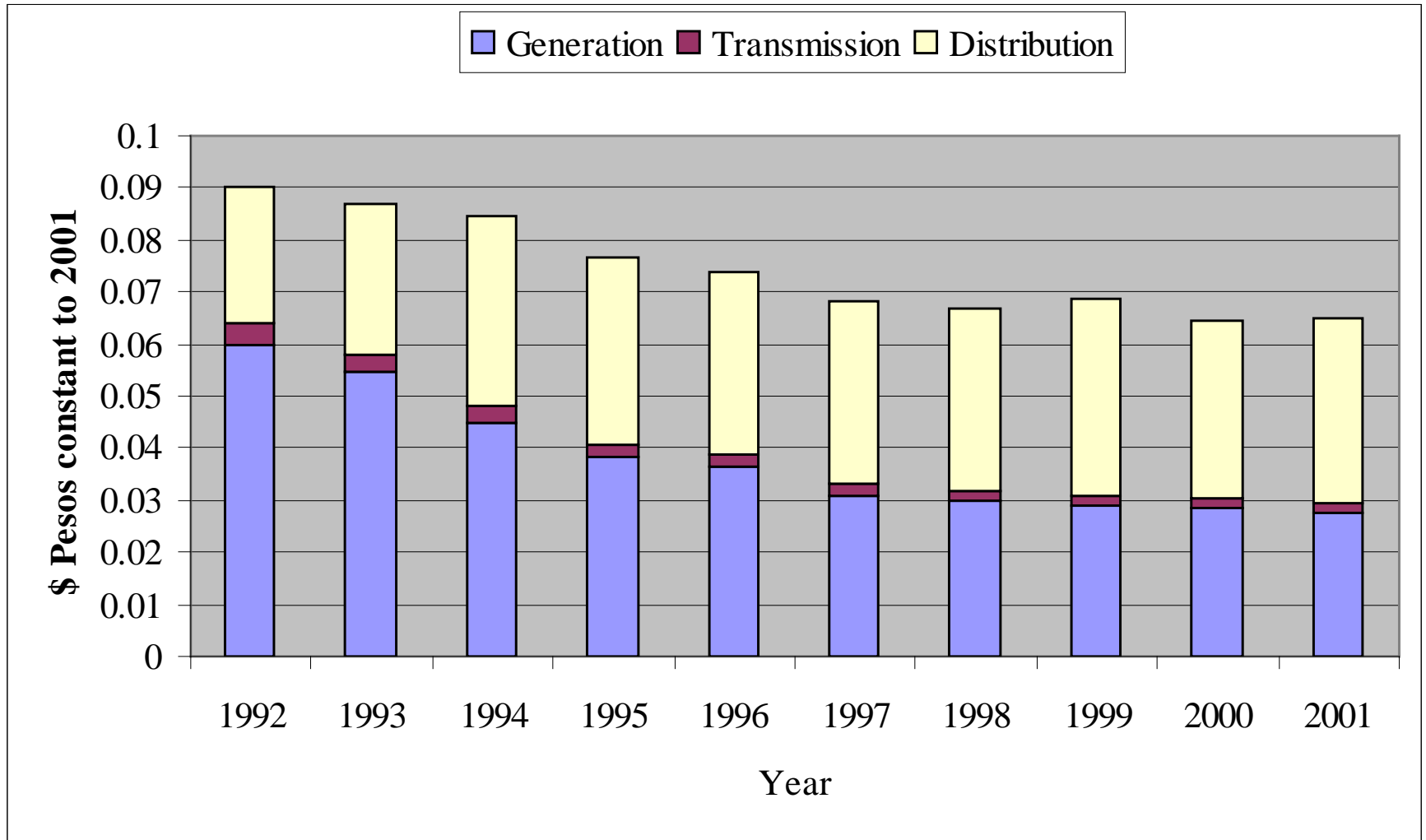
Positives of reform in Arg.

- Investments in new and more efficient generation technologies (mainly CCGT)
- Greater operating efficiencies and micro-level accountability (i.e. profitability)
- Significant reductions in technical losses of electricity in T & D
- Significantly less supply shortages and blackouts
- Improved quality of service
- Growth in energy exports

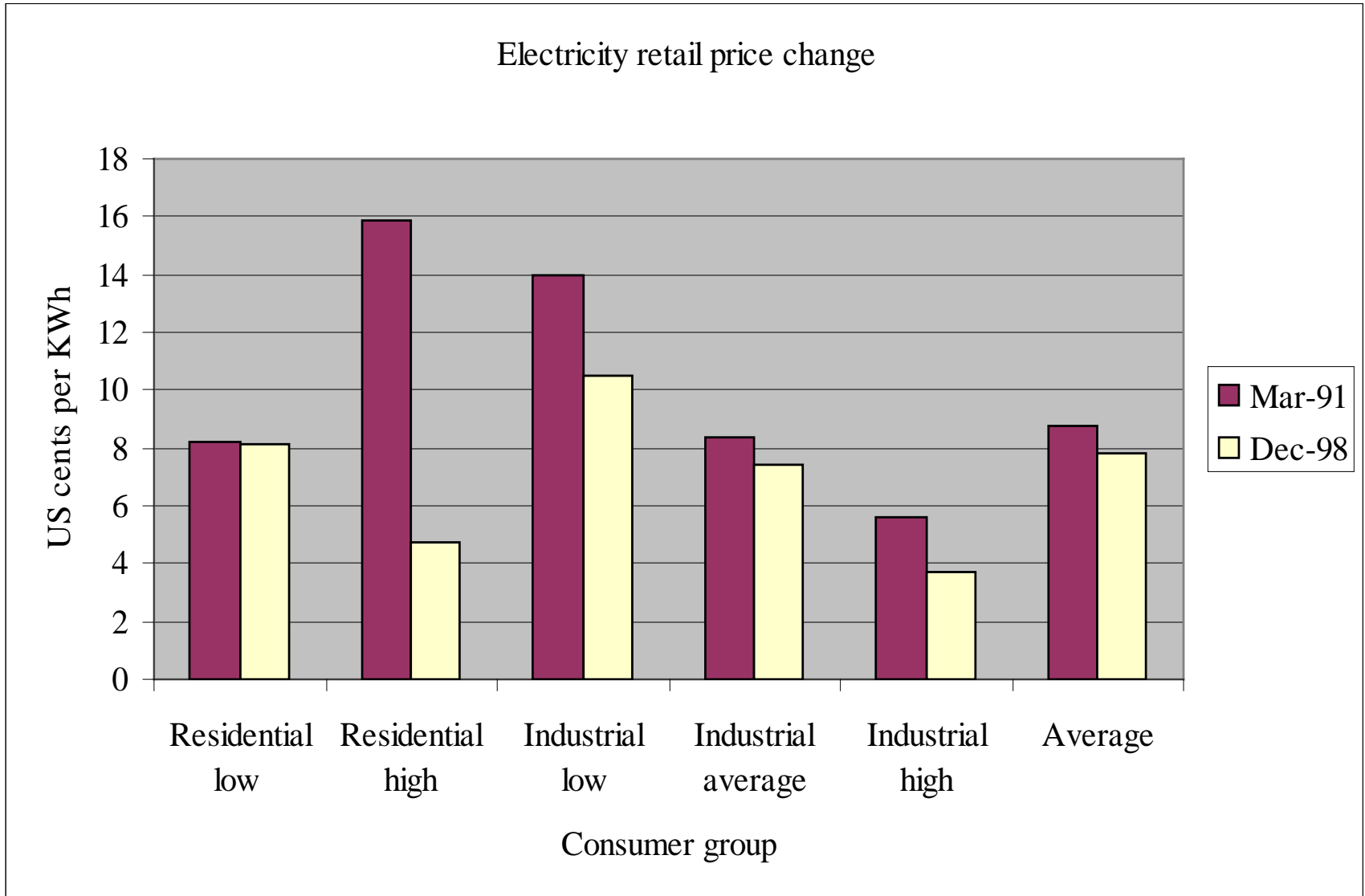
Argentina's Total Primary Energy Production (TPEP) and Consumption (TPEC) (Quadrillion Btus)



Breakdown of the final cost of electricity in Argentina by production stage since reform.



Electricity retail price change



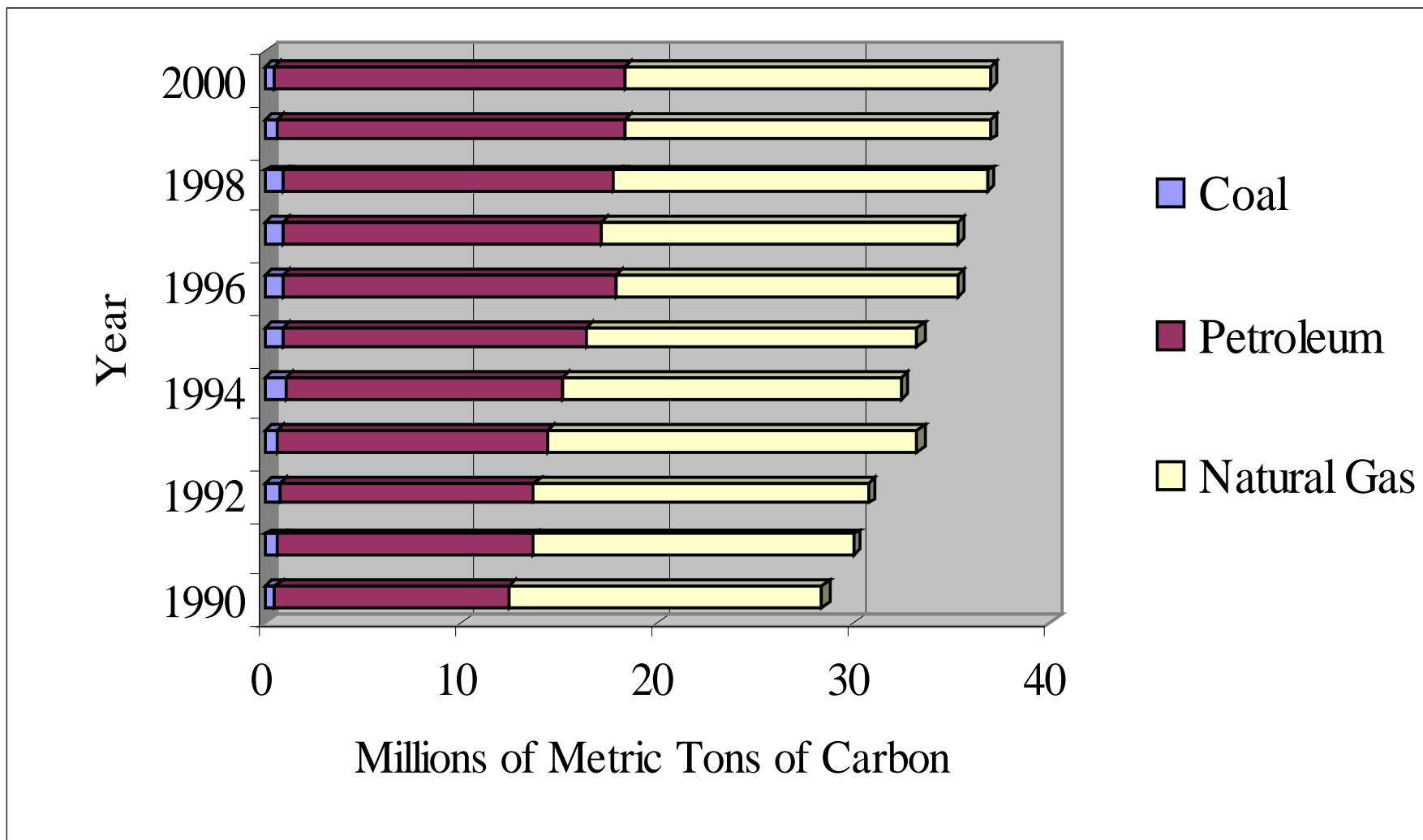
Barriers to the development of RE's in the reformed electricity market

- 10 wind farms in Patagonia: 14.32 MW capacity
- Reformed market makes investment in hydro & RE's less attractive
- The 'spot' market unfriendly to RE's
- Dominance of cheap local gas
- No CC regulation
- No market mechanisms akin to the NFFO or ROCs

Key energy-related environmental impacts since 92'

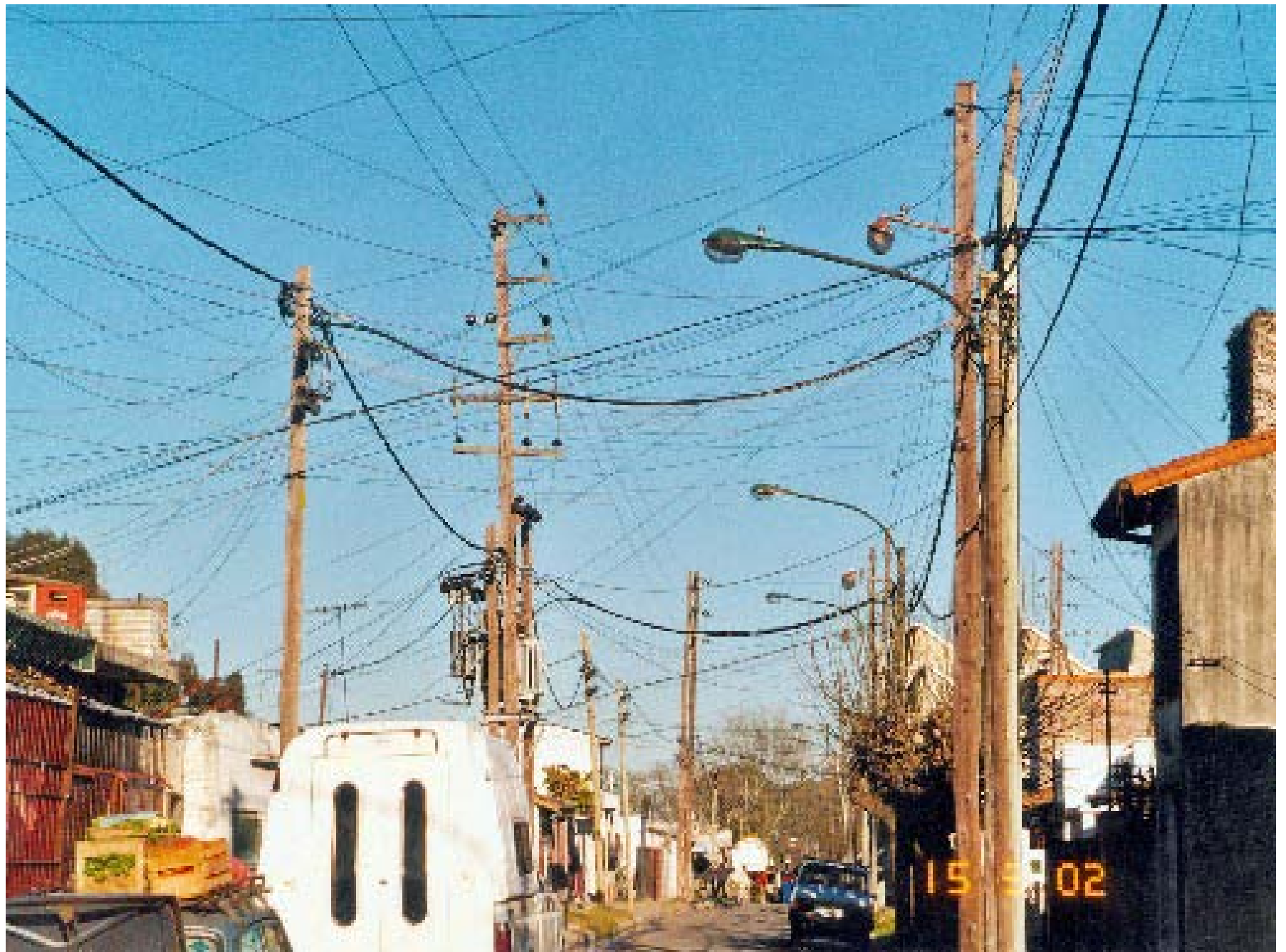
- Energy-related env. regulation concerns only localised impacts
- Increased carbon intensity of total national electricity production
- Expansion of Oil & Gas production
- Reform has led to growth in consumption
- Lower prices have reduced any economic incentives for end-use energy efficiency
- The introduction of electricity tariffs *can* increase energy efficiency but has induced an increase in the use of traditional fuels, increasing air pollution

Fossil Fuel-related Carbon Dioxide Emissions in Argentina, 1990-2001



Social-side failures

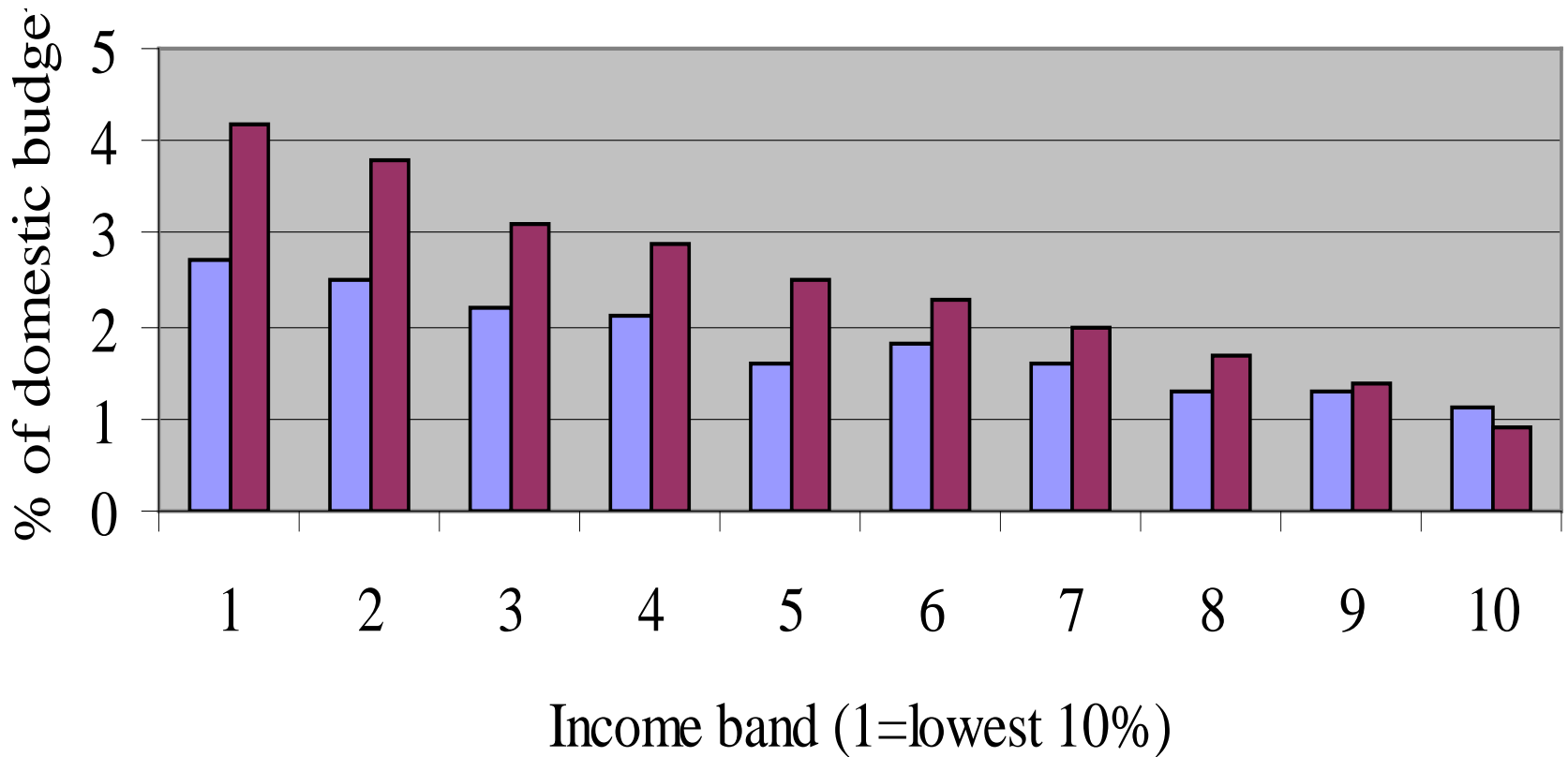
- 27% non-technical losses (theft) prior reform
- ‘4-year plan’ to formalise 600,000 connections
- Welfare loss from illegal to paying status
- Regressive pricing
- Credit financing & Pre-paid metering
- Informal connections still exist in some slums
- Fuel substitution, wood & expensive LPG





Cost of electricity as a percentage of total domestic budget

1985-86 1996-97



Failures of reform and post-reform problems in Argentina

- Drive for lower prices has created an investment crisis
- Investment is needed in transmission but current electricity prices make such investment unattractive
- Dec. 2001 Economic collapse
- Devaluation of the Peso (lost 70% value) has created crisis for foreign owned energy companies
- \$ denominated debts / peso revenues...unsustainable!
- Business needs to increase tariffs...political nightmare

Lessons learnt?

- Argentina's reforms highlight failures of a reform process that has worked in more developed countries
- However, the IFI's (particularly the IMF) continue to prescribe similar privatisation and liberalisation policies
- Reform dominated by concerns for narrow economic efficiency
- Reform provides 'window of opportunity'
- Risk of carbon-lock-in
- Reform not bad per se. Devil is in the detail.

Room for improvement / possible research agenda

- Huge potential for renewable energy technology in LA
- Many successful RE projects exist in LA, mainly at the rural and small-scale. Big business has tended to avoid RE as a viable large-scale supply option
- Responsibility of foreign owners of privatised companies to steer developments in renewable energies
- Such policy intervention goes above and beyond what the IFI's prescribe to many LDC's; requires the support of western governments
- Introduction of a social tariff (operating as a direct internal transfer?) needed, even more so since 2001. World Bank now support the idea
- Need for greater understanding of demand-side....investigate the potential of RE's to supply urban slum areas?

Conclusion: is reform appropriate for the developing world?

- Reform successful in developed countries
- Reforms often implemented at a time of political and economic weakness
- Closed reform processes / undemocratic
- Cheap sale of state mines and utilities?
- Reform leads to foreign ownership
- Repatriation of profits = national welfare loss
- Regulation weaker and more prone to political intervention / corruption