Women and Extractive Industries: What does recent evidence show?

By

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Development and gender norms

- **Industrialization and industry specialization matter for women**
  - Cross-sectional pattern (Jayachandran, 2014)
  - Development and equality: reinforcing? (Duflo, 2012)
  - Natural resource rich countries less gender equal

- **Female labor force participation**
  - Jobs are important for women’s empowerment (Jensen, 2012; Heath and Mubarak, 2015)
  - Evidence from manufacturing, IT-sector, Export Proc. Zones
  - Are extractive industries different?
Recent studies and theoretical predictions

Extractive industries, in particular mining, can affect women through:

- Stimulate direct and indirect employment
  - Crowd out of women through Dutch Disease (Ross, 2008)
  - Men dominate direct employment
  - Are women free to work in services?
- Change women’s bargaining power
  - Negative: Relative wages decrease (African Mining Vision)
  - Positive: Absolute income might increase
- Change environmental quality
  - Negative: Pollution affect mothers’ and children’s health
  - Positive: Income can increase health
  - HIV risk among transient migrants (Corno and de Walque, 2013), but jobs reduce young women’s risk taking (Wilson, 2012, Zambia)
Competing forces

**Effects are not clear ex ante**

Increased income can make women better off;

Decrease in relative earnings and changes in environmental quality can make women worse off

- Need to evaluate empirical evidence:
  - Limitation 1: With competing forces, the net effect is likely to vary across areas and industries
  - Limitation 2: No investigation of the ASM sector
Question

Does extractive industries create local jobs for women?

What happens with women’s welfare and empowerment?

Strategy:

- Map the expansion of the mining industry across Africa
- Use time and geographic variation in mining activity 1982 - 2012
Figure: Large scale mines in the data set that were ever actively extracting minerals between 1975-2012. All mineral types.
Figure: African Mining, Gender and Local Employment (The World Bank Working Papers, 2015). Joint with Dr. Andreas Kotsadam.
African gold mines studied

Figure: Illustration of Identification Strategy. DHS Clusters and Gold Mines in Tanzania.
African gold mines studied

Figure: Illustration of Identification Strategy. DHS Clusters and Gold Mines in Tanzania.
African gold mines studied

Figure: Illustration of Identification Strategy. DHS Clusters and Gold Mines in Tanzania. Defining the local area.
Figure: Illustration of Identification Strategy. DHS Clusters and Gold Mines in Tanzania. How large is the local area? 10km?
Figure: Illustration of Identification Strategy. DHS Clusters and Gold Mines in Tanzania. How large is the local area? 20km?
African gold mines studied

Figure: Illustration of Identification Strategy. DHS Clusters and Gold Mines in Tanzania. How large is the local area? 30km?
African gold mines studied

Figure: Illustration of Identification Strategy. DHS Clusters and Gold Mines in Tanzania. Solution: Map the effects across a larger geographic area.
Figure: Data from 29 African countries over 30 years, 600,000 women and their partners.
Data from 29 African countries over 30 years, 600,000 women

Findings

The opening of a new large scale mine creates structural shifts:

Agricultural employment decreases,
Men go to manual labor and mining,
Women to services or leave the labor force.

Not sustainable: Newly stimulated sectors contract at mine closure
Women do not go back to agriculture.

Further results and implications

- Highly gendered labor market effects within 20km from a mine
- Reason to include gender mainstreaming
- Service jobs not limited to sex work
- Sustainable job creation for men and women is a challenge
Figure: Data from 8 African countries over 30 years, with 60,000 women and 50,000 children within 100km from a mine
Main results

A. Working in services

Figure: Service sector employment increases with 10 percentage points among women within 20km.
Main results

Figure: Beyond 20km there is no effect on service sector employment.
Why it's important  Data & Statistical Method  Main Results  Conclusion & Scope for Further Work

Main results

Figure: Within 10-15km from a mine, women are less likely to justify domestic violence
Main results

Figure: Further away, there is no change in attitudes
Main results

Figure: Overall, these effects are confirmed in the migrant population as well as the non-migrant population.
Summary of findings

The opening of a new large scale gold mine changes women’s welfare:

- Women are 10 pp (41%) more likely to work in services
- Women are 24% less likely to justify domestic violence
- Women have better health care access, infant mortality decreases

- Potentially through income opportunities:
  - Increased service employment, no change in education
  - Women marry men with marginally more education
  - Effects are stronger the higher the gold price
  - No analysis of mine closure: not clear if effects are sustainable
Conclusions

Job creation and health in the short run

- In relatively disadvantaged areas (rural, subsistence farming, high infant mortality rate), investment in extractives can improve women’s livelihoods.
- But can the industry do better and create more and more diverse jobs? Yes!
- Infant mortality decreases from a very high level: probably not true in areas where the return to income is lower.

Sustainability and mine closure

- Labor market effects disappear at mine closure: Ways to build sustainability?
- What happens with health, when the income opportunities disappear and pollution remains?
Conclusions

Thank you!