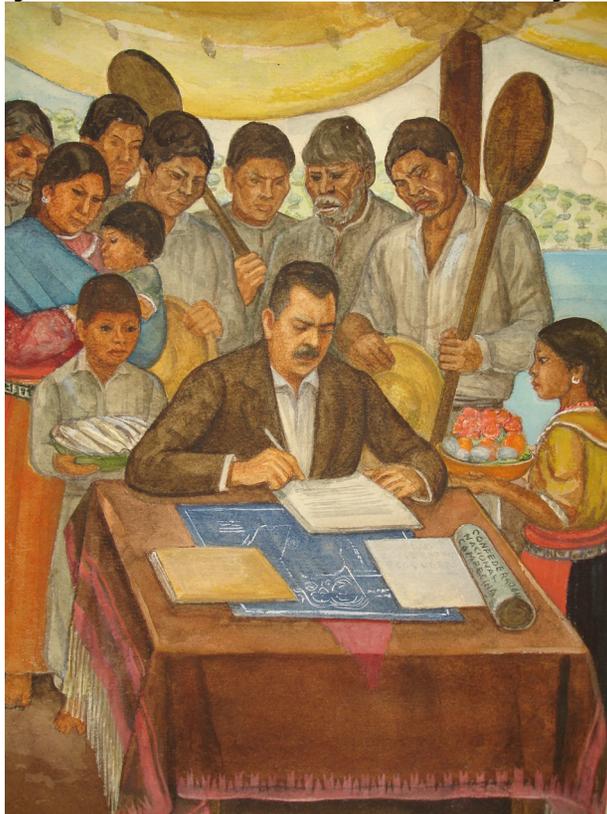


Property Rights Reform in Mexico: Impact on agricultural, rural, and structural transformations

Alain de Janvry, Elisabeth Sadoulet, Marco Gonzalez-Navarro, Kyle Emerick (TU),
Eduardo Montoya, Matthew Pecenco, Daley Kutzman (NWU)



Annual World Bank Conference on Land and Poverty, 2018

Motivation

- **Complete property rights** are recognized as key for development: Chicago Property Rights School
- **Land reform** providing smallholder farmers with access to land and complete property rights can be a source of agricultural **growth**, structural **transformation** (non-agricultural growth), and **poverty** reduction
- Yet, land reform granting complete property rights has rarely occurred (SSA, China) and with uncertain results, constituting the “**puzzle of land reform**”
- **Mexico’s** huge recent land reform provides a unique opportunity to observe the outcomes of reform
- We present here the **results** of rigorous impact evaluations of this reform

Outline

- I. **Conceptual framework** on the role of agriculture for development
- II. Mexico's experiences with **land reform**
- III. **Identification strategy** for impact analysis and data
- IV. First order impact: **labor** reallocation and migration
- V. Impact on **agricultural** transformation
- VI. Impact of **rural** transformation
- VII. Impact on **structural** transformation
- VIII. Is the ejido sector **disappearing**?
- IX. Conclusion: The ejido **beyond property rights reforms**

I. Conceptual framework on the role of agriculture for development

How does ag contribute to growth and poverty reduction?

- **Access to assets with complete/secure property rights** create investment opportunities: land reform and land titling
- **Agricultural Transformation (AT):** Green Revolution in staple crops and diversification of farming systems toward high value crops
- **Rural Transformation (RT):** diversification of rural households' sources of income toward the rural non-farm economy (RNFE), mainly linked to agriculture
- **Structural Transformation (ST)** with labor migration toward urban environments and declines of the share of agriculture in employment and GDP

II. Mexico's experience with land reform

Mexico's first land reform, 1917-1992

Created 32,000 agrarian **communities** (ejidos and indigenous communities), with ultimately 3.5 million households, and more than half the rural population and territory of Mexico

Ejidos had incomplete property rights

- **Usufruct** of the land, cannot sell or lease, obligation of direct use by owner and family, cannot be left idle (use-it-or-lose-it, land use as land right), cannot be subdivided

Consequences of first land reform

- **The ejido was effective for political control**
 - Votes delivered to **party bosses** against public investment, access to public services, and welfare handouts

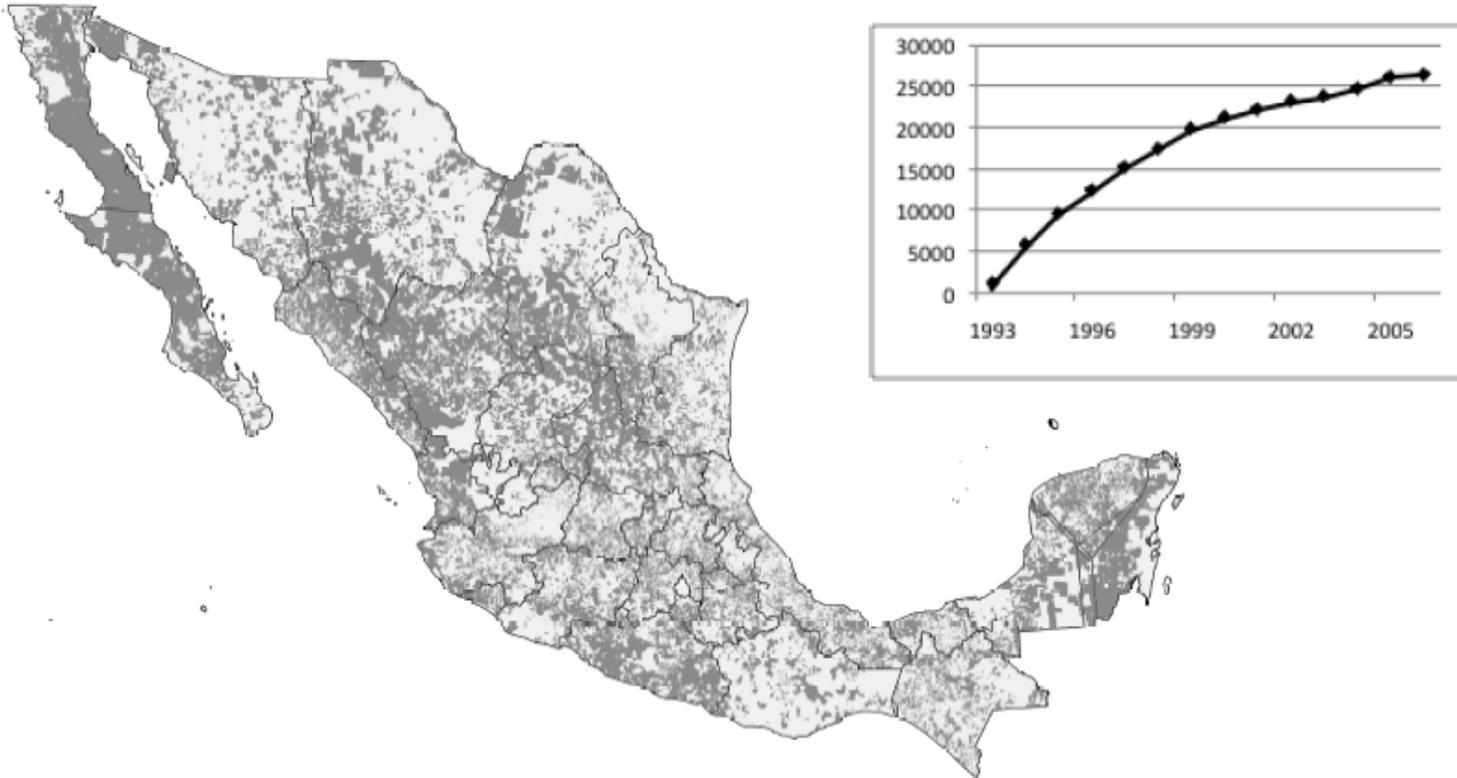
- Helped the **PRI** remain in power for 71 years with wins in nine presidential elections until 2000
- **But political control was achieved at high efficiency and welfare costs**
 - **Excess labor** in agriculture trapped by insecurity of property rights: a delayed structural transformation
 - Municipalities with more ejidos are **lagging** more in **industrialization** (Dell)
 - “**Curse of visible clientelism**” limited transfer benefits as can punish instead of reward (Larreguy)
 - Extensive **poverty** in the ejido sector (de Janvry et al.)

Mexico's second land reform, 1993-2006

- **1992 Salinas attempt at completing the reform** toward full property rights in context of upcoming **NAFTA, OECD** membership with lagging agriculture and poverty
- **Procede:** Program of certification of ejido land plots (agriculture) and assignment of corporate shares over Common Property Resources (pastures and forestry): **delinks** land rights from land use
- **Certificates:** Registered ownership at National Agricultural Cadaster, can freely use/not use the land, hire labor, rent out. Hence, can now migrate seasonally or permanently
- **Rights:** Can sell certificate to other community members with assembly approval, or obtain full title (**Dominio Pleno, DP**) for unrestricted sale and use as collateral

III. Identification strategy for impact analysis and data

Rollout of Procede, 1993-2006: fast, huge, and orderly



Procede ejido land certifications

(Shaded areas are certified lands and number of ejidos)

Identification strategy

- **Rollout** across 27,189 ejidos over the period 1993-2006
- **Observations** are panels of geographical units: ejidos matched with localities for population, municipalities for economic activity, pixels for land use
- **Validation** of approach: parallel trends pre-certification
- **Data**
 - **Cadaster (RAN)** for land certification
 - **Household migration & consumption:** Progres household surveys 1997 to 2000; Ejido Censuses
 - **Population** at locality level: Population Censuses 1990 and 2000, and at individual level in IPUMS
 - **Land use:** Landsat data for 1993, 2002, 2007
 - **Number of cultivators and area cultivated:** Procampo
 - **Firms** (number, VA): Economic Censuses 99, 04, 09, 14

IV. First order impact: Labor reallocation and migration

- **Certification leads to substantial outmigration:**
 - 30% increase in probability that an ejido household has a migrant
 - 4% decline in ejido locality population
- **Heterogeneity:** Household more likely to migrate if:
 - a. Previously **weaker** property rights
 - b. Lower land **quality, smaller** holding
 - c. Better **off-farm** wage opportunities
 - d. Higher **skills**
- Results show that property rights established by **possession/occupation** lead to **excess labor** retained in agriculture in defense of property rights (Fields for urban Peru)

V. Impact on agricultural transformation

- **Impact on land use**
 - No change in **total cultivated land**
 - **Increase** in cultivated land in **high agricultural productivity** areas
 - Households with more/better land migrate less and **consolidate land** in larger farms
 - **Convergence** in ejido land use toward private sector land use on land with comparable agro-ecological and economic suitability
- Hence, infer from this that certification induced **efficiency gains** in land use: an **Agricultural Transformation**

VI. Impact on rural transformation

- Use **data** on non-agricultural enterprises from Mexican Economic Census (INEGI) aggregated at the locality level
- Find that **Rural Transformation** only occurs in areas where agriculture has high potential (FAO-GAEZ for maize)
- In these rural localities, certification induces:
 - Increase in the **number of firms**, especially small firms
 - Increase in **VA by firms**, especially by small firms
 - These firms are mainly in **manufacturing**
 - With a decline of employment in agriculture, the **local economy shows a RT** with a higher share of local employment in manufacturing (especially) and services

- Suggests that the RT is induced not by labor availability (greater release in low-yield areas) but by **effective demand originating in farm incomes (AT)**
- **This is a case of local ADLI** (Agriculture Demand-Led Industrialization: Adelman, Mellor)
- **The ADLI interpretation** is supported by the observed **gains in household welfare** (originating in efficiency gains in resource allocation due to labor released from agriculture that out-migrates and land consolidation)
 - Observe a large increase in consumption of **non-food items**.
- Hence, infer from this that certification induced growth in the RNFE: a **rural transformation**

VII. Impact on structural transformation

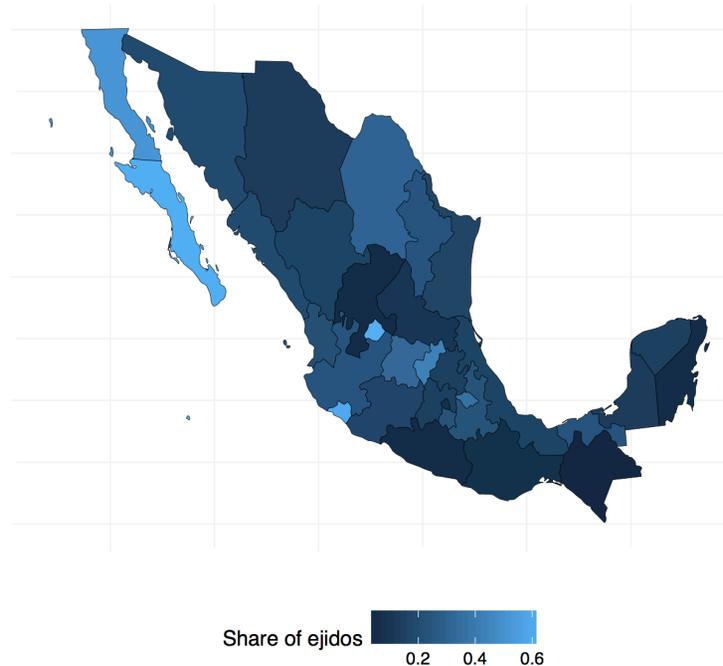
- **Population movements benefit major secondary cities**
(Population Census data)
 - Decline in population and agricultural labor force observed in **localities** and **municipalities** where certified ejidos are located
 - Migrating population goes to the **state's municipal manufacturing capitals (major secondary cities)**, mainly as urban population.
- **State municipal manufacturing capitals gain in employment and wages**, especially in the services sector, suggesting a growth effect that also benefits the local labor force

- **Conclusion**

- Certification induces a **structural transformation** that creates **growth** in the state **manufacturing capitals**, especially in the **services** sector
- Gains in the service sector **benefit the local/resident** labor force through wage gains, creating a win-win
- But effect is **small** as migration makes a small addition to the municipal urban labor force

VIII. Is the ejido sector disappearing?

Share of ejidos with a dominio pleno event, 2016



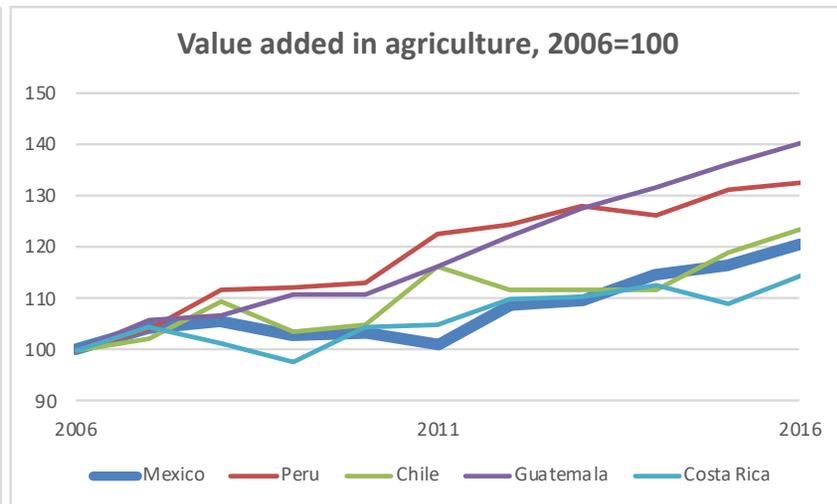
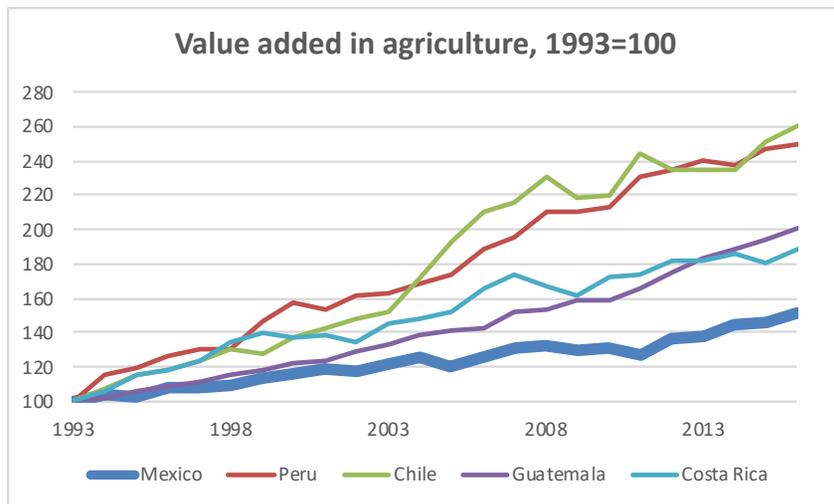
Progress with **Dominio Pleno**, 2016

- On average, 17% of ejidos have had at least one DP event (ranging from 0 to 60%)
- Most of the ejido land remains under certification (88 to 100%). On average 3% under DP
- DP occurs in more prosperous states for two purposes:
 - **Sale**, especially peri-urban and coastal properties (disappearance of ejido)
 - **Secure** property rights in favorable environments and access **credit** (consolidation)

IX. Conclusion: The ejido beyond property rights reforms

- The property rights reform resulted in a huge **asset transfer to the rural poor** w/o major dissipation of wealth (DP sales): a major policy achievement
- **Agricultural transformation** has occurred in the better endowed areas, with convergence in land use toward private sector use
- **Rural transformation** has occurred via ADLI/ag income effects in these more favored areas
- **Structural transformation** is occurring in the state municipal manufacturing capitals in the services sector, with shared benefits, but effect is small

- Results show that the **ejido sector did respond** to incentives provided by the property rights reform **in contributing to an AT, RT, and ST**, but effects were modest
- Limited use of **dominio pleno** for exit suggests that the ejido is a **resilient** institution
- **The ejido remains a sector with largely unrealized potential**: 32,000 units of local governance can help smallholder farmers compete, govern, cooperate, and socialize
- However, the **opportunity** created by extensive access to land with complete property rights was limited by **lack of a comprehensive complementary agricultural and rural development program**, with resulting **slow growth in agriculture value added**



Since beginning of Procede

Since end of Procede

- We **conclude** that, with limited advances in Dominio Pleno sales as an exit mechanism, the ejido **remains an important potential instrument in using agriculture for development** that has been **utilized below potential** and deserves **greater policy attention**

End

alain@berkeley.edu