
Market Organisation & Performance in Sub-Saharan African Cotton Markets

Claire Delpeuch

Sciences Po Paris – Groupe d'Economie Mondiale (GEM)

Claire.Delpeuch@sciences-po.org

Motivation

□ The elusive question of market reforms in Sub-Saharan Africa (SSA)

- Significant variation in policy options and evolution (crops, time, countries)
- Attempt to focus on cotton

□ Interesting set-up for examining variations in the supply responses to liberalization & differences in performance

- Policies historically similar in a large number of countries
- Significant variation in reform options adopted

□ Unsettled institutional puzzle

- Evidence of strong link between market organization & performance but no overall conclusion
- Contemporary policy-based debate

Three-fold approach

□ Theoretical:

- Attempt to formalize the link between market organization & performance
- Paper 1 based on a model by Swinnen, Vandeplass & Maertens (forth. in WBER)

□ Empirical:

- Enlarge the spectrum in terms of number of countries & time period
- Paper 2 offers a comprehensive panorama of how market organization has evolved in SSA with a database of market organization indicators

- Attempt to identify causality
- Paper 3 introduces the above in a trade and a production model

Three Papers

1. Revisiting the “cotton problem”

A comparative analysis of cotton reforms in Sub-Saharan Africa

Claire Delpauch, Anneleen Vandeplass & Jo Swinnen (KULeuven – LICOS)

2. Sub-Saharan African Cotton Policies in Retrospect

Claire Delpauch & Antoine Leblois (CIRED)

3. Quantitative assessment of the market organisation-performance relationship: work in progress...

Claire Delpauch

Paper 1: Revisiting the Cotton Problem

- Reform impact in ESA not always as expected
- Reforms reversed in many ways (instability in the d° of competition)
- Resistance to reform strong & successful in WCA
- Unwillingness to give up on rents or belief that reform would not be beneficial to farmers?
- What shall be expected from orthodox reforms in WCA?

- Stylized contracting model (Swinnen et al., forth. in WBER)
 - Characterize the effects of liberalization on contracting **outcome & sustainability** given different market structure & the nature of ownership
 - Context of imperfect markets, absent formal contract enforcement institutions, and prevalence of linkages between input and output markets

Paper 1: Revisiting the Cotton Problem

The model

□ **Suplus**

$$\theta = p - k^* - l^* - c - t$$

□ **Respective payoffs**

- The farmer

$$Y = \max (l^* + \beta\theta; l^* + k^* - \varphi; \gamma p - \varphi)$$

- The processor

$$\Pi = p - c - t - Y$$

□ **Contract sustainability**

$$p \geq p_{\min} = \max \{ l^* + \beta\theta; l^* + k^* - \varphi; \gamma p - \varphi \} + k^* + t + c$$

Paper 1: Revisiting the Cotton Problem

The effect of liberalization

- Increase in γ
- Increase in I^*
- Decrease in φ
- Ending to price intervention ($t= 0$)
- Change in c hard to predict (better management, cost-reduction incentives , better technologies but potential loss of economies of scale, lower investment incentives in R&D/quality/infrastructure)

Paper 1: Revisiting the Cotton Problem

Conclusion 1 – general perspective on reform outcomes

- If input requirements are high = high k (*to be discussed?*)
- If φ decreases significantly & y increases significantly following liberalization
- If there is little variation in c across firms – i.e. they cannot fetch very different prices in international markets (*to be discussed?*)

→ Self-enforcing contracts will be difficult to sustain post-reform

Paper 1: Revisiting the Cotton Problem

Conclusion 2 – comparative perspective

- Reforms are less attractive to farmers and governments in WCA today, as compared to ESA in the 1990s because of
 - Lower world price (up to very recently)
 - Subsidy vs. Taxation
 - Lower d° of post-reform competition (hence smaller scope for increase in I^*)
 - Lower d° of perceived parastatal inefficiency in production and marketing processes (including lagged effects of past intervention)

- Questions?
 - Are inputs as necessary in ESA as in WCA (if not, additional reason for more concern in WCA)
 - Is there any reason to expect a different variability in c in the two regions?

Paper 1: Revisiting the Cotton Problem

Conclusion 3 – Perspectives?

- If cotton production is to be maintained at current levels, two options to prevent contract breakdown
 - Coordination among ginners
 - Higher φ & lower γ
 - State regulation: regional monopsonies or quotas
 - Higher φ & lower γ & lower I^*
 - Maybe higher β
- } Need to investigate implications of governance
- Move away from “cotton policy” towards “agricultural policy”
 - Acknowledge a probable decrease of production (number of producers)
 - Expect better yields & returns
 - Offer alternative opportunities

Paper 2: SSA Cotton policies in Retrospect

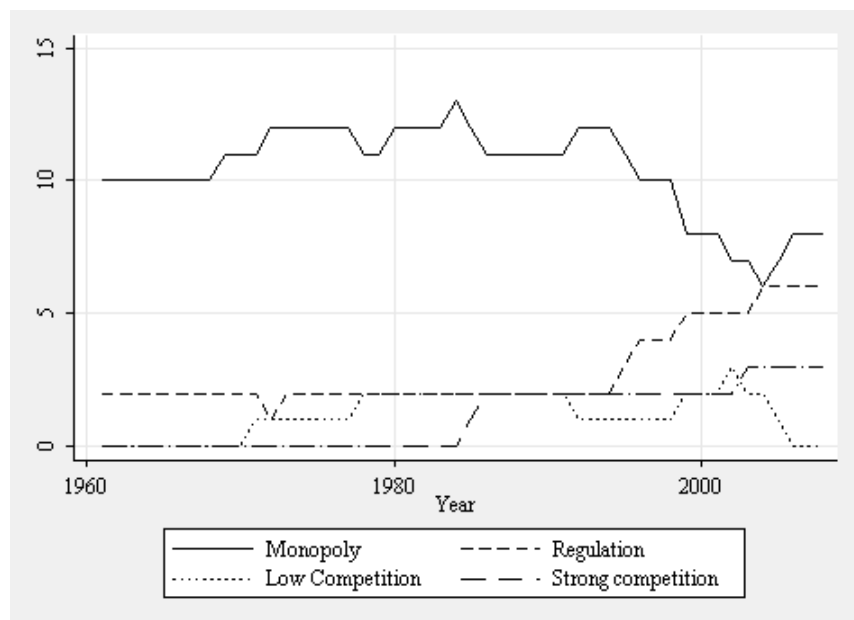
- Compilation of a database of market organization indicators
 - Long time frame: since the early 1960s
 - Broad coverage: all cotton producing countries in SSA (now 25 → target: 32)

- Indicators
 - Market structure, nature of ownership, pricing
 - Series of exclusive dummy variables for each area of market organisation (vs. composite indicators)

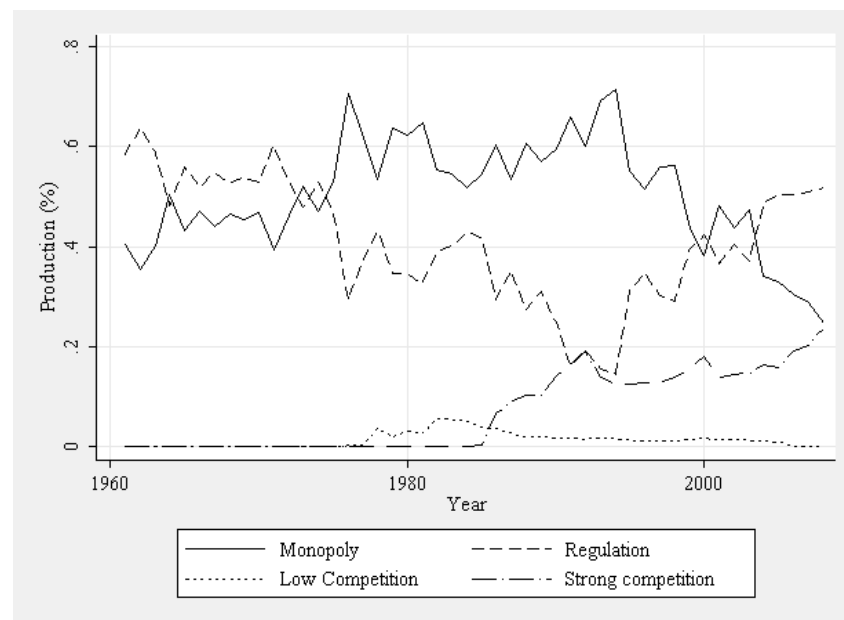
- Average market organization
 - Trend in the number of countries characterized by different market characteristics
 - Trends in the production share emanating from these sub-groups of countries
 - SSA level vs. WCA & ESA level

Paper 2: SSA Cotton policies in Retrospect

Example 1: Mitigation of "traditional" pictures - Competition in WCA



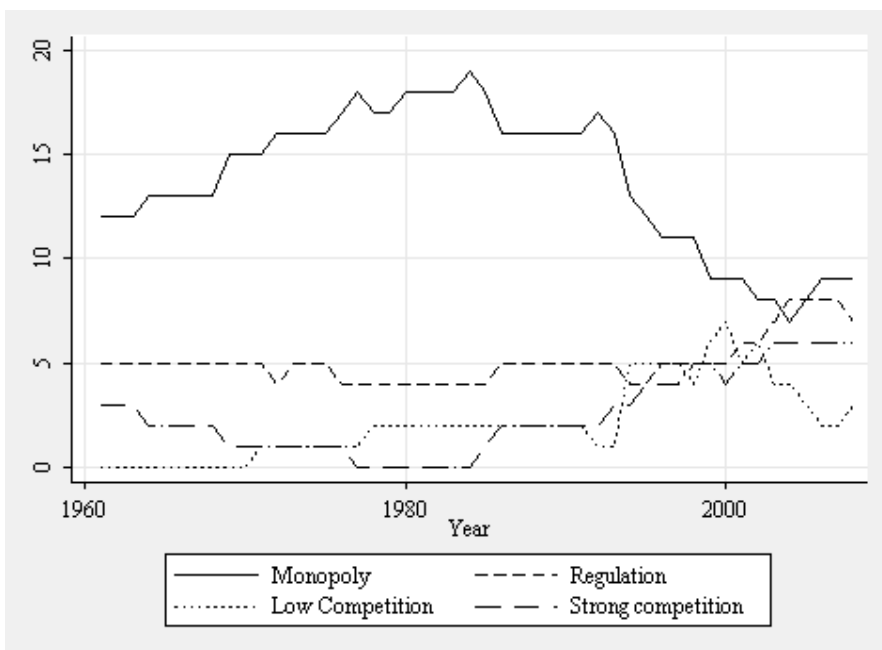
Degree of competition



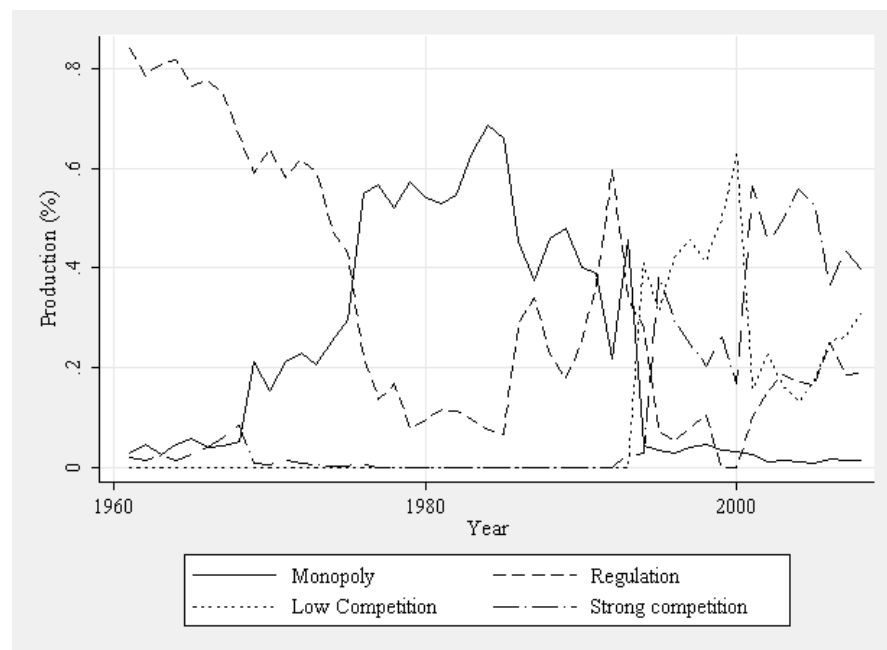
Production by degree of competition

Paper 2: SSA Cotton policies in Retrospect

Example 2: Orthodox reforms? Competition in SSA & ESA



Degree of competition in **SSA**



Production by degree of competition in **ESA**

Paper 2: SSA Cotton policies in Retrospect

Conclusion

New perspective on reform processes

Towards re-regulation?

- Instability in market organisation
 - State-driven re-regulation
 - Private sector-driven re-regulation
 - Market exit
 - Beyond our indicators: indications of increasing involvement through subsidising

- Difficulty of achieving true competition
 - Over two thirds of the markets under consideration are uncompetitive
 - Regulatory bodies created in a number of countries where their impact remains to be measured, hence not in our indicators yet (e.g. *Cotton Development Authority* in Kenya)

Paper 3: Quantitative assessment of the market organization-performance relationship

Core idea: introduce the market organisation indexes from paper 2 in quantitative modelling (+ maybe more detailed indexes at the WCA level).

Constraints: data availability & accuracy

- Performance = Yields not doable

- Dual approach
- 1. Performance = Exports (data UN Comtrade)
 - Augmented gravity model
- 2. Performance = Production (data FAOStat)
 - Production model

Paper 3: Quantitative assessment of the market organization-performance relationship

Remaining questions:

- How to verify that market structure is exogenous to performance ?
→ Reverse causality problem

- How to combine the different aspects of market organisation in the regressions?

Preliminary results:

- D° of competition very significant in the trade model