The Paradox of Standard Setting
In Globalized Agri-Food Production Systems
- A Study of the US Chicken Industry Between the 1980s and the 2010s

Presented by: Lu Hao, Georgetown University
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REAL LIFE HORROR…

Antique Sale!

50-year-old Chicken Feet!
WHAT IS YOUR PROBLEM, USDA?

USDA: China is eligible for exporting processed chicken.
AHA! SO THAT’S WHY...
EQUVALENCE?
Chicken is a deadly product that is contaminated up to 97% of the time.

——— US Consumer Reports

More deaths were attributed to poultry than any other commodity.

——— CDC Reports
RESEARCH QUESTION

A gap is identified where safety regulation (or standards) is absent or arguably insufficient at a given critical safety point.

What are the gaps, if any, between value chain production and safety standards setting with respect to food safety assurance?

Safety Standards: rules, requirements and regulations of pesticide use, residue limits, food additives, hygiene requirements, HACCP, and traceability.
RESEARCH METHODOLOGY

A Multi-Dimensional Qualitative Methodology

- Historical Analysis
- Institutional Analysis
- Qualitative Value-Chain Analysis
- Expert Interviews
The US Chicken Industry

Safety Standards System

1980s

1990s

2000s

2010s
COMPLEX SYSTEM I: THE US BROILER INDUSTRY

VALUE CHAIN ANALYSIS

- Geography
- Input-Output Structure
- Institutions
- Governance
VALUE CHAIN ANALYSIS: INPUT-OUTPUT STRUCTURE

**Domestic Chain**

- **Input**
  - Feed
  - Chicks
  - Medication

- **Production**
  - Broiler Raising (6-7 weeks)
  - Initial Processed
  - Further Processed

- **Processing**
  - Transportation/Storage

- **Distribution**
  - Supermarkets
  - Fast-Food Chains
  - Restaurants

- **Retail**
  - Food Retailers

- **Consumers**

**International Chain**

- **Processing** (e.g. China)

- **Imports**

- **Exports**

**US Border**
VALUE CHAIN ANALYSIS: GOVERNANCE

The Three-Determinant Framework
Gereffi, Humphrey and Sturgeon

**Complexity of Transaction:** The extent to which the information needed for transaction can be transferred efficiently and without investment in transaction-specific relationships.

**Codifiability of Information:** The standardization of information that needs to be transferred between value chain in order for the transaction to be successfully completed.

**Capability of Suppliers:** The level of supplier competence in relation to the requirement placed upon them.
VALUE CHAIN ANALYSIS: GOVERNANCE PATTERN

Unit of Analysis: Supplier-Buyer Relationship

Supplier

- Complexity of Transaction
- Codifiability of Information
- Capability of Suppliers

Market
- Transaction Complexity: low
- Information Codifiability: high
- Supplier Competence: high

Hierarchy
- Transaction Complexity: high
- Information Codifiability: low
- Supplier Competence: low

Captive
- Transaction Complexity: high
- Information Codifiability: high
- Supplier Competence: low

Relational
- Transaction Complexity: high
- Information Codifiability: high
- Supplier Competence: high

Modular
- Transaction Complexity: high
- Information Codifiability: low
- Supplier Competence: high
VALUE CHAIN ANALYSIS: SUPPLIER - BUYER RELATIONSHIP

Farmers (Supplier) vs. Integrators (Buyer)
Fragmented Farmers vs. Consolidated Integrators
Captive Governance

Integrators (Supplier) vs. Retailers (Buyer)
Consolidated Integrators vs. Consolidated Retailers
Modular or Relational Governance
The Value Chain Governance & Food Standards Framework
Gereffi & Lee

THE PREMISE

The typology in Gereffi and Lee’s model is based on the premise that, “The more a particular value chain is concentrated and governed through tight explicit coordination by a few consolidated actors, the more value chain is likely to obtain comprehensive private standards to regulate food safety and quality. Conversely, fragmented value chains at both the supply and demand ends are likely to encounter more limited public standards (Gereffi & Lee, 2009).
The Value Chain Governance & Food Standards Framework

Gereffi & Lee

Food Demand (Retailer/Buyer)

Concentrated

(A) Bilateral Oligopolies
Private/
Most Comprehensive
Standards

(B) Buyer-Driven Chains
Public + Private/ Safety
and Quality-Focused
Product Standards

Concentrated

(C) Producer-Driven Chains
Public + Private/Safety and
Quality-Focused Process
Standards

(D) Traditional Markets
Limited Public Standards/
Least Comprehensive
Standards

Food Supply (Processor/Supplier)

Fragmented

Concentrated

Fragmented

Limited Public Standards/
Least Comprehensive
Standards
VALUE CHAIN ANALYSIS: GOVERNANCE

Unit of Analysis: **Supplier-Buyer Relationship**

- **Supplier**
  - Degree of Concentration: High or Low
  - Motivation to invest in safety standards
- **Buyer**
  - Degree of Concentration: High or Low
VALUE CHAIN ANALYSIS: THE HYPOTHESES

Hypothesis (i): At the fragmented segments of the chain (upstream), where private incentives for investing in safety standards are weak, safety regulation is primarily driven by the public sector.

Hypothesis (ii): At the concentrated segments of the chain (downstream, including domestic and import chain segments), where private incentives for investing in safety standards are strong, safety regulation is primarily driven by the private sector.
**COMPLEX SYSTEM II: SAFETY STANDARD SETTING FIELD**

- **Value Chain Operation**
  - Points of Interaction

- **Critical Food Safety Points**
  - Existing or Potential Food Safety Hazards

- **Safety Standards?**
  - What are the gaps?
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<td><strong>Partial Import Chain</strong></td>
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**Primary Safety Standards**

- Guidelines or requirements for nutrition content and bacterial level
- Requirements, programs for animal health
- Absent or insufficient
- Approved Types of antibiotics
- Limited standards set by integrators
- SSOP, HACCP, CFR, etc.
- Equivalence Program (of limited capacity)
- POE Inspection
- Data not available to public
- Retailer-initiated safety standards
- Private (e.g., GFSI, SQF)
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DOMESTIC CHAIN: CONTENTION

Food safety officials

Any contamination at prior stages can be corrected at the slaughtering stage.

There are high levels of salmonella in the final products and continued salmonella outbreaks.

Most of the cross-contamination are caused by improper handling of raw chicken by the consumers.

Salmonella outbreaks also exist in further processed products. Blaming consumers is no solution to eradicate salmonella outbreaks.

Food safety advocates
### Complex System II: Safety Standard Setting Field

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IMPORT CHAIN: UN-IDENTIFIED SAFETY HAZARDS

• Limited public information
• Food safety concerns related to chicken products

Photo: www.fda.gov
GAPS

**Upstream Gap**: High safety risks and safety regulation absence at broiler breeding stage.

**Downstream Gap (Import Chain)**: Off-shored processing production and Limited Safety Regulation
ANALYSIS

- An **absence** of **both public and private incentives** directly linked to safety regulation in the fragmented segments of the value chain.

- However, **private incentives** for safety regulation at the downstream of the chain can **exert influence** on the fragmented segments.

- Proliferation of private safety standards at the downstream (highly concentrated) segments of the chain.

- However, the import segment at the downstream is primarily regulated by the public sector.
Hypothesis (i): At the **fragmented segments** of the chain (upstream), where private **incentives** for investing in safety standards are **weak**, safety regulation is primarily driven by the **public sector**.

Reject

Hypothesis (ii): At the **concentrated segments** of the chain (downstream, including domestic and import chain segments), where private **incentives** for investing in safety standards are **strong**, safety regulation is primarily driven by the **private sector**.

Partially Accept
“...[A] population of organizations operating in the same domain, as indicated by the similarity of their services or products. Included also are those others that critically influence their performance, including exchange partners, competitors, funding sources and regulators” (Scott, 2001).

According to Fligstein and McAdam (2012, p.83), an organizational field is characterized by the ongoing internal tensions between incumbents and challengers in the “contest for positioning.”
AN ORGANIZATIONAL FIELD THEORY PERSPECTIVE

Standards Setting Sub-Field
Public & Private

Complex System

Organizational Field

Industrial Context

Contemporary Globalization

Chicken Production Sub-Field
Points of Interaction

Competition
Dialectic Tensions
Cooperation
INSTITUTIONAL ROOTS

1. The chicken industry operates with extremely **low marginal profits** (less than 1%). It is highly dependent on **large-scale production** and **industrialized processing** in order to prosper.

2. The **current safety standards infrastructure** facilitates and sustains this quantity-driven chicken production paradigm.

3. Introduction of safety regulation at the breeding stage could **substantially raise the cost** of chicken production.
PRELIMINARY POLICY RECOMMENDATION

Industry

Public & Private Safety Standards Setting

Value Chain Operation

Input
(Fragmented)

Output
(Regulated)

Consumer Groups

Government

Inform & Empower

Public Comments

Safety Assurance

Safety Demands

(US Chicken Industry)
A PRECEDENT - FORD PINTO CASE IN THE 1970S
A NEW PARADIGM?

Primary Broiler Company

Hatchery

On-farm Breeding

Mixed Standards Covered

Retailers

Processing Plant
(Slaughtering and Processing)
THANK YOU

PLEASE FEEL FREE TO ASK QUESTIONS.