

Supply Chain Coordination in the US Dairy Industry

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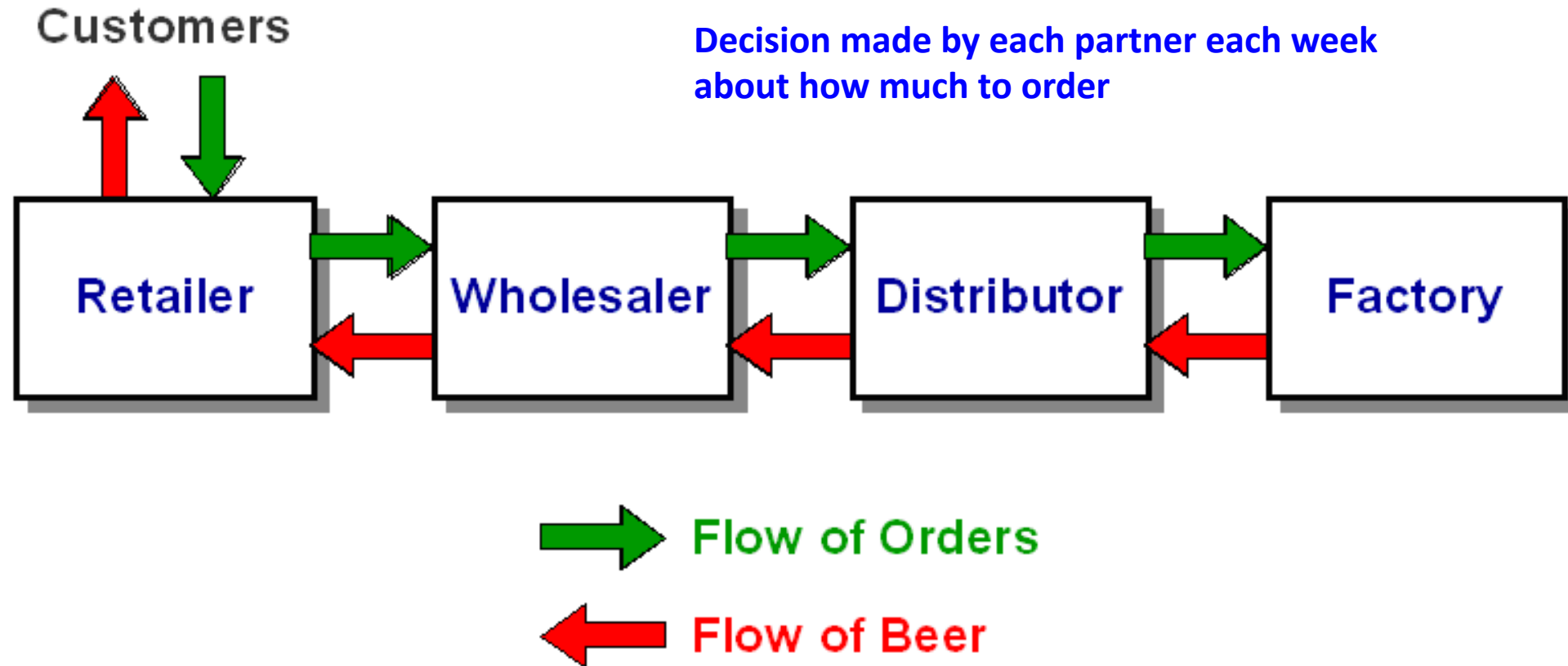


Supply Chain Coordination Game *(aka “The Beer Game”)*

- Game played to simulate supply chain ordering decisions
- Often used with groups of top executives

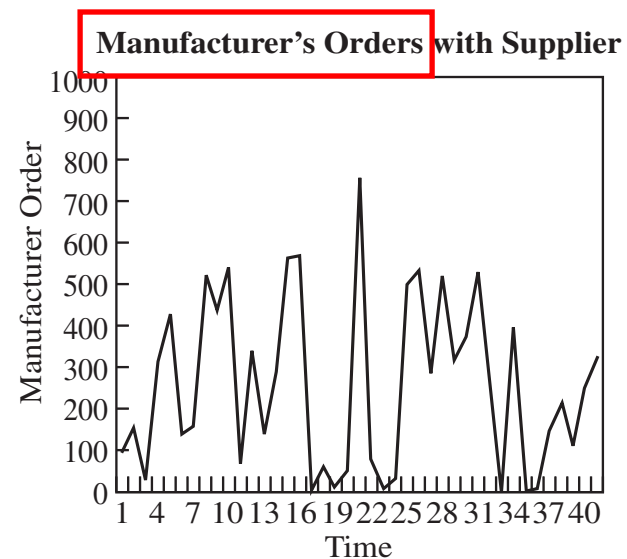
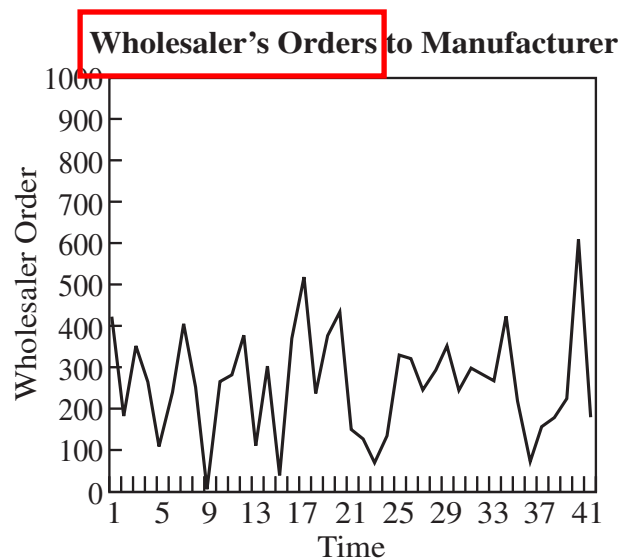


The BG Structure Has 4 Supply Chain Partners

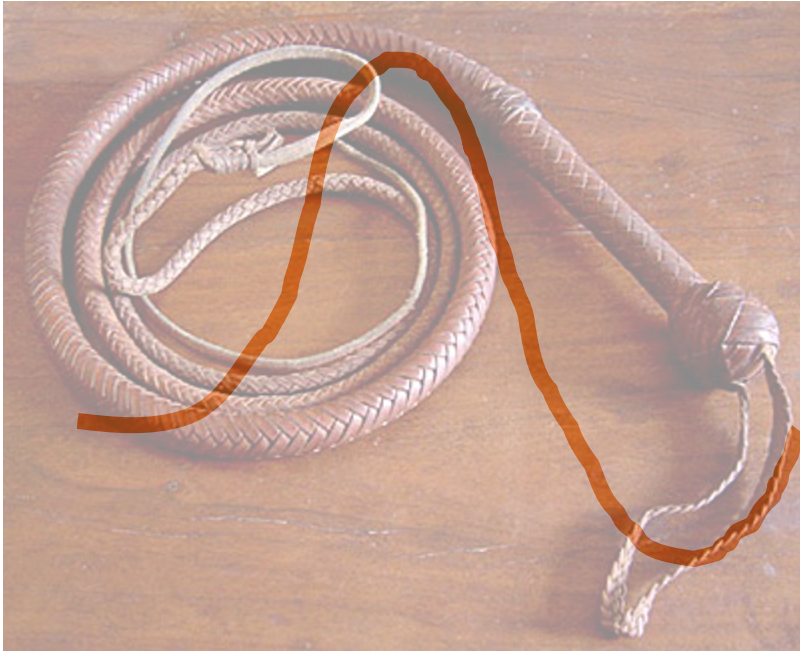


Want to minimize costs of HOLDING INVENTORY (held at each level)
Or processing BACKORDERS (when there is not enough product in
inventories to meet orders)

Variation in Increases as “Move Up” the SC



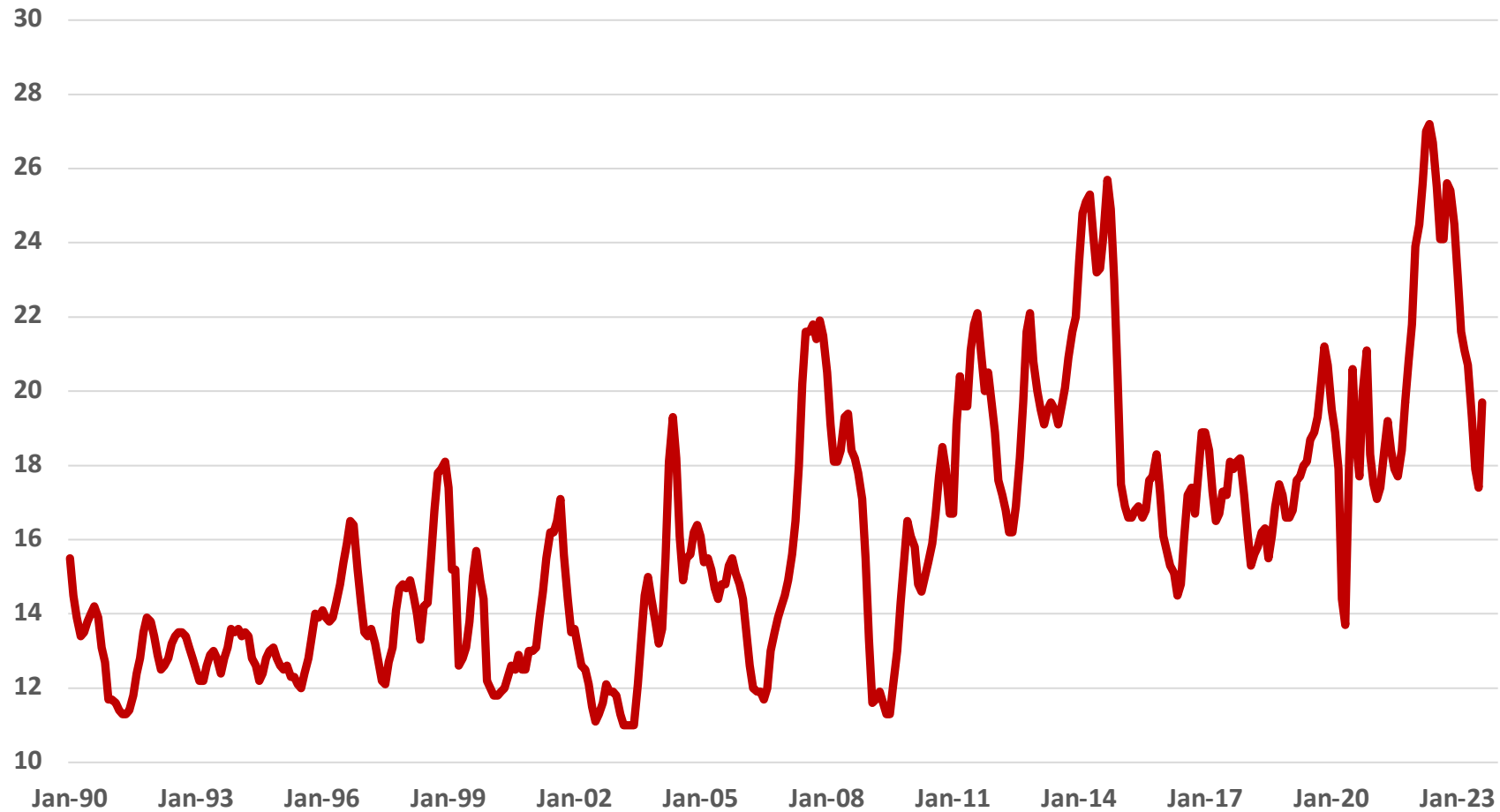
This Instability is Called the “Bullwhip Effect”



Orders vary and often often amplified as they move upstream in the supply chain

Increases costs to supply chain partners
Instability makes management more difficult!

Why This Supplier Price Instability?



A pattern like this suggests a lack of supply chain coordination!

Why This Supplier Price Instability? (Dairy)



Milk Price Cycles in the U.S. Dairy Supply Chain and Their Management Implications

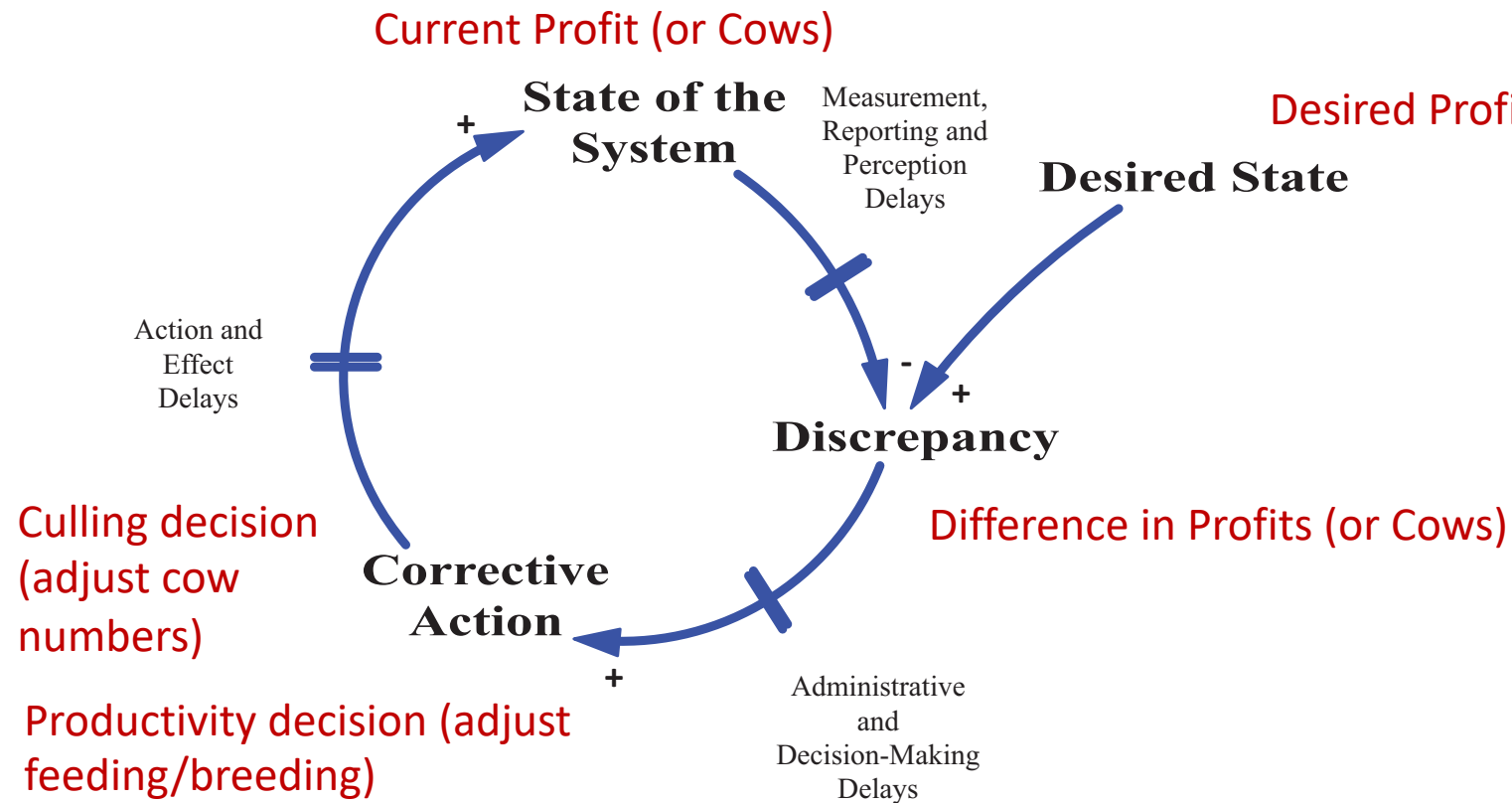
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Why This Supplier Price Instability? (Dairy)



Commodity supply chains work this way

Most supply chains (Amazon, GM) do not!

Figure 5 Hypothesized Core System Structure Underlying Oscillatory Behavior in Commodity Supply Chains, Adapted from Sterman (2000).

One Way to View Programs to Manage Supply

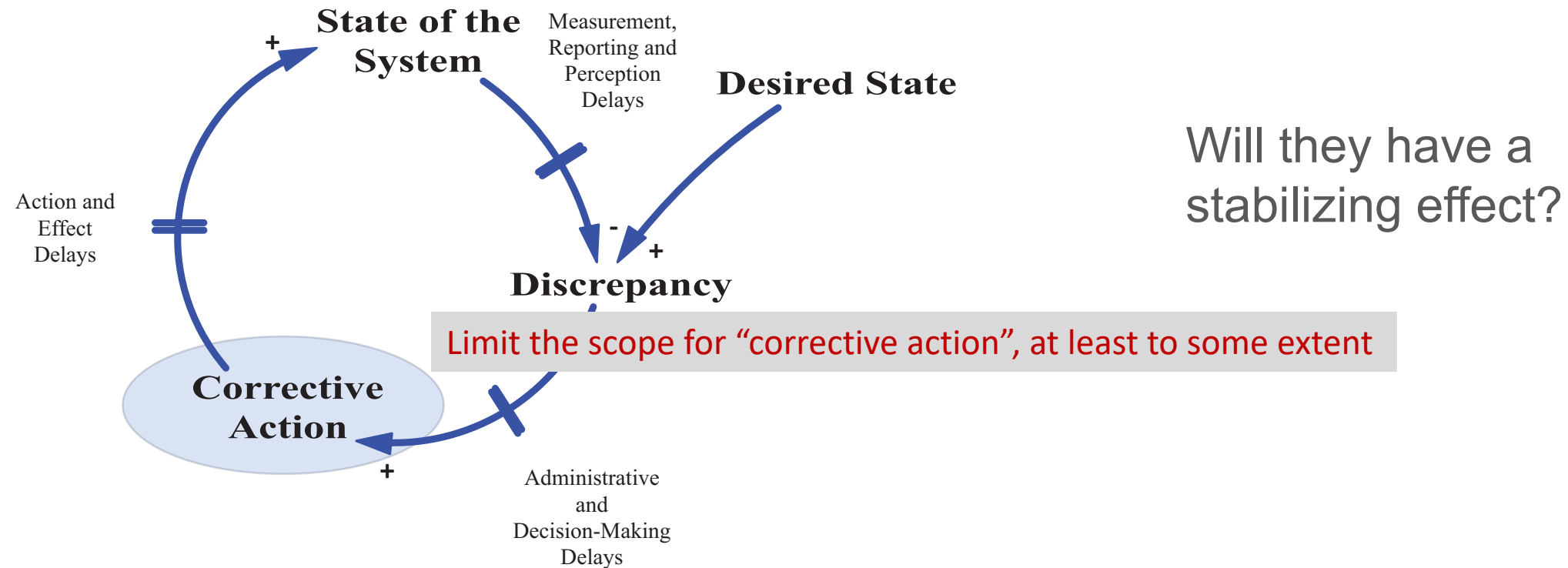
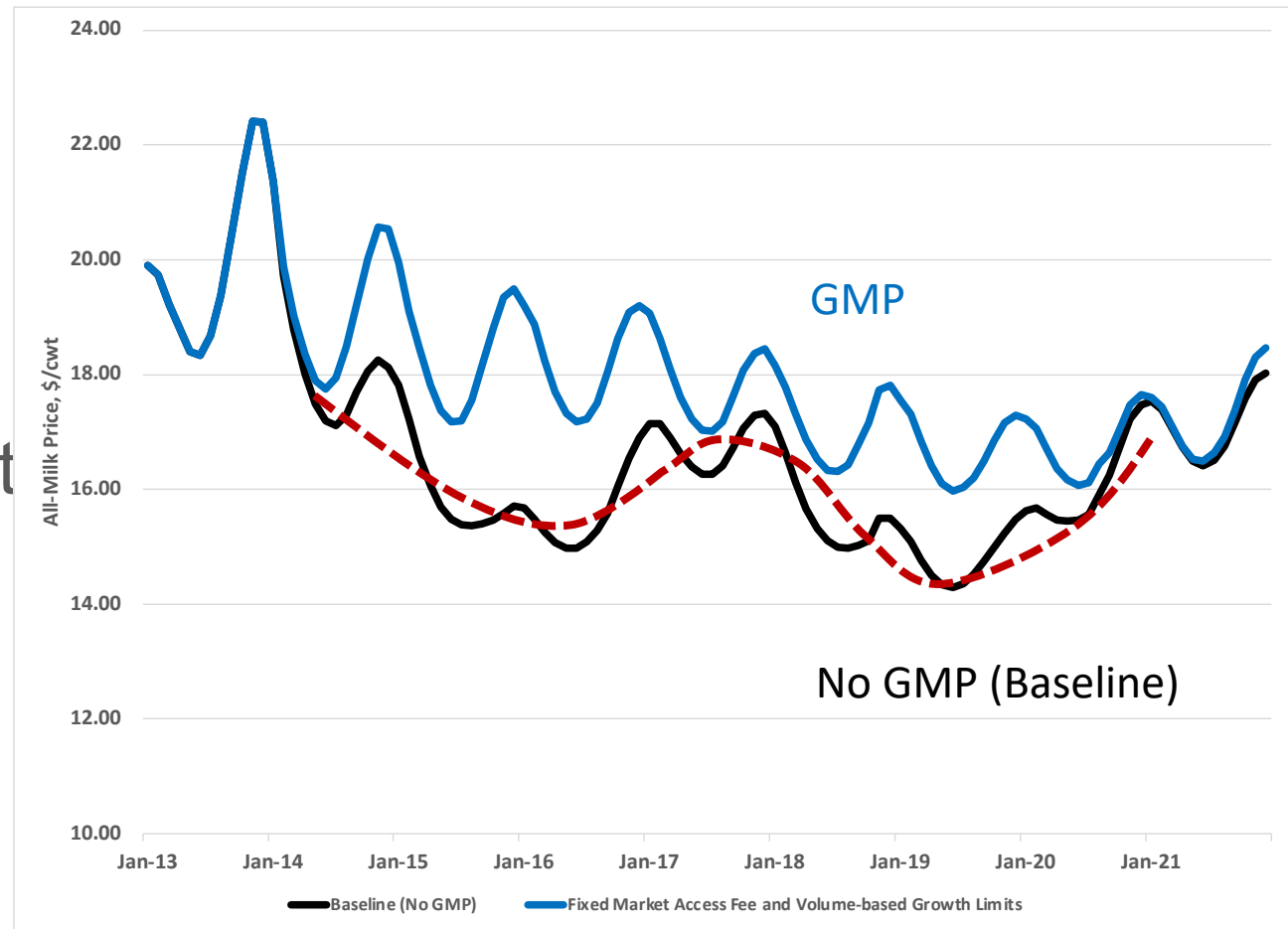


Figure 5 Hypothesized Core System Structure Underlying Oscillatory Behavior in Commodity Supply Chains, Adapted from Sterman (2000).

Programs to Manage Supply

- Regional, by Cooperative
- National
 - Mandatory (Canada)
 - Flexible (Proposed GMP)
- Modeling studies suggest that national programs may be needed for market stability
 - Although could be fine for cooperative objectives



Next: Experience of Organizations

Thank you for your attention.

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