
Risk Management
via
Dynamic System
Modeling

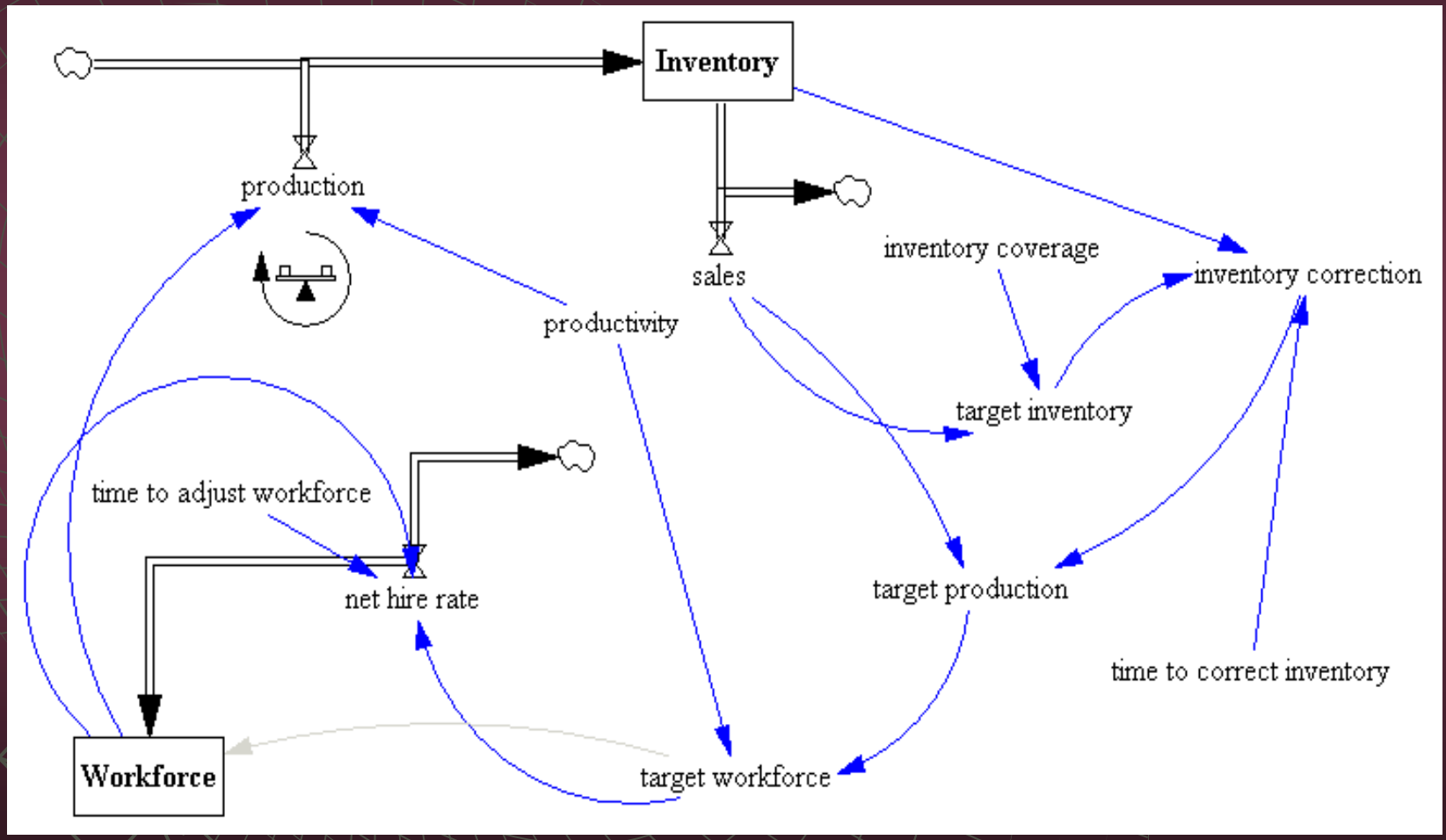
Canadian Context of Financial Electronic Records

- CIFER – www.ciferresearch.org
- Modeling the flows and retention of numerical and textual records within the Canadian Financial System
- Exploring systemic risks via dynamic modeling and simulation
- Hopefully, fewer Lehman Brothers!

Dynamic System Modeling

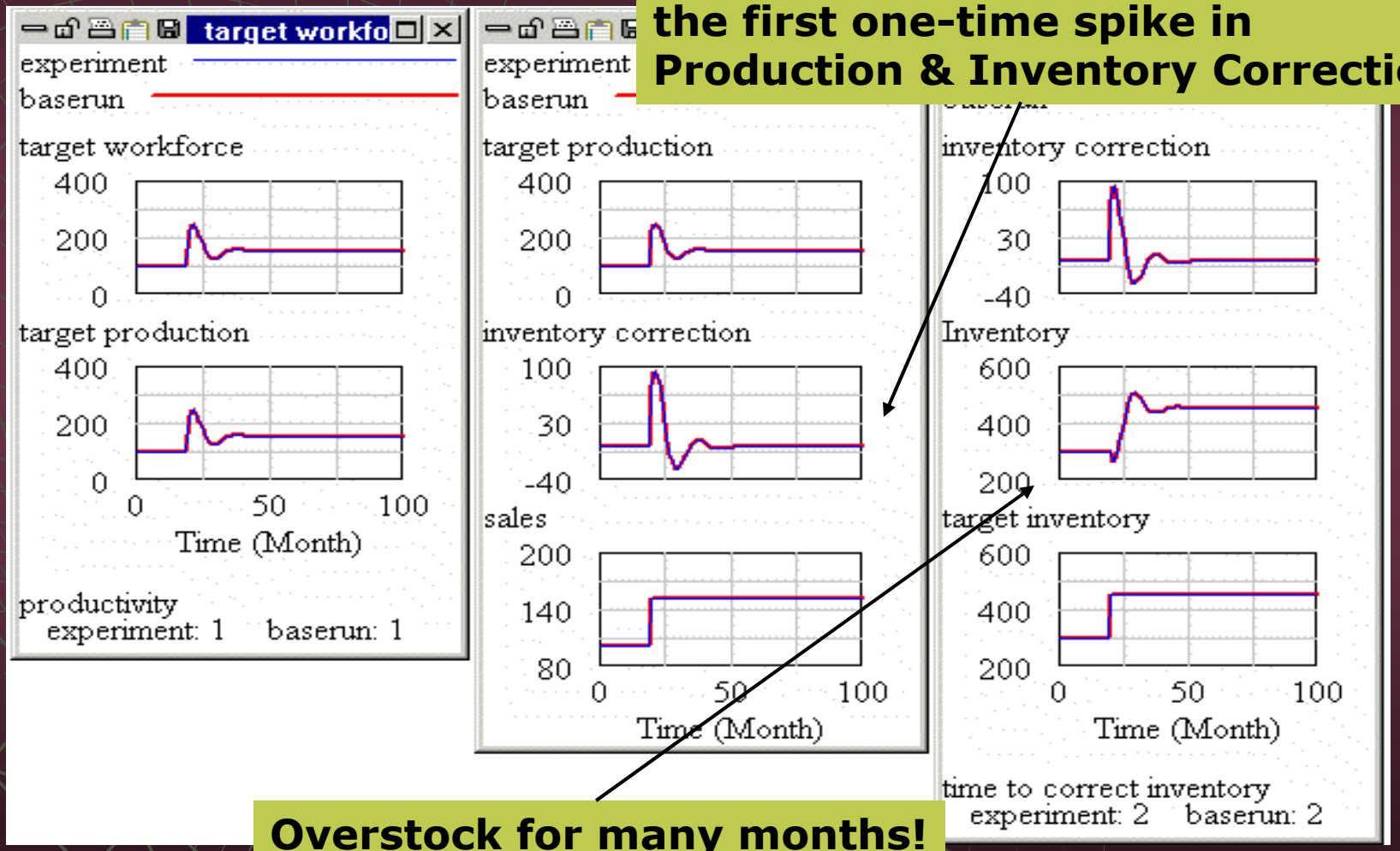
- Simulating interactions between changing parts of a system instead of static visualization of data
- Identifying feedback loops causing systemic failures
- Developing a process adaptable to finance, industrial production, resource planning, etc.

A Simple Production Example



Simulating Inventory Correction

The spike in sales only caused the first one-time spike in Production & Inventory Correction



Overstock for many months! Optimizable?

Modeling "Confidence" in the Financial System

- Modeling on multiple scales from national to single organization
- Simulating systemic failures:
  - loss of confidence in counter-parties due to missing, ill-formatted records
- Creating specific "threat signatures" in document flows:
  - insider dealing, ponzi schemes, rogue traders…

One Process to Model Them All

- Investment, trading, hedging
- Financial reporting and compliant
- Production, hiring, and resource management
- Record management and retention
- A lot more…

Questions?

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