

# PRODUCTION RATE - CONSTRUCTION QUALITY RELATIONSHIPS IN US RESIDENTIAL CONSTRUCTION

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# Objective

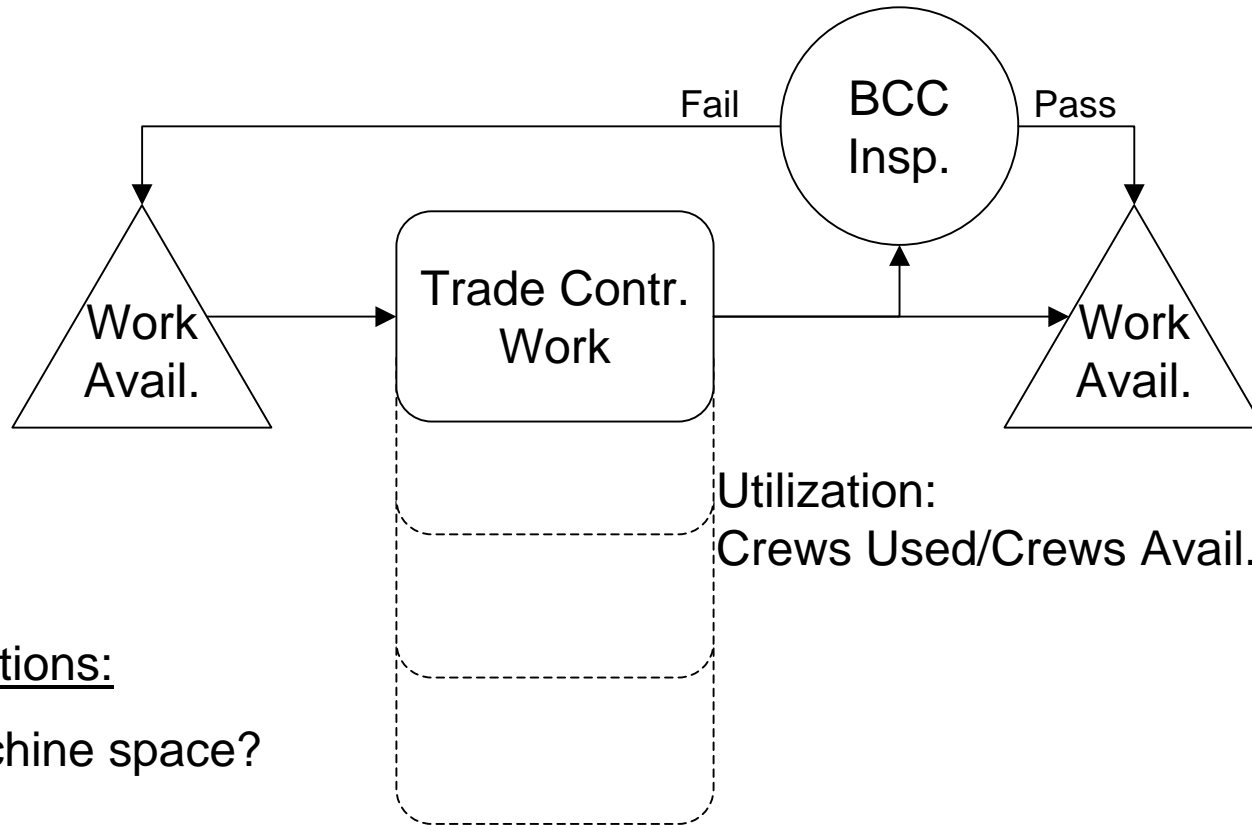
- Previously found that WIP-CT-TH relationship applied in residential construction
- Long time horizon
- Interested in shorter time scales,
- And in utilization/variability relationships

# Socio-Technical Context

- 100-200 homes in a tract
- Subcontract everything
  - Break production into very small tasks
  - Easy to train crews
  - Crews travel past the work piece
- What is “utilization” given near  $\infty$  crew numbers
  - Direct employs
  - Part-time
  - Network of “others”



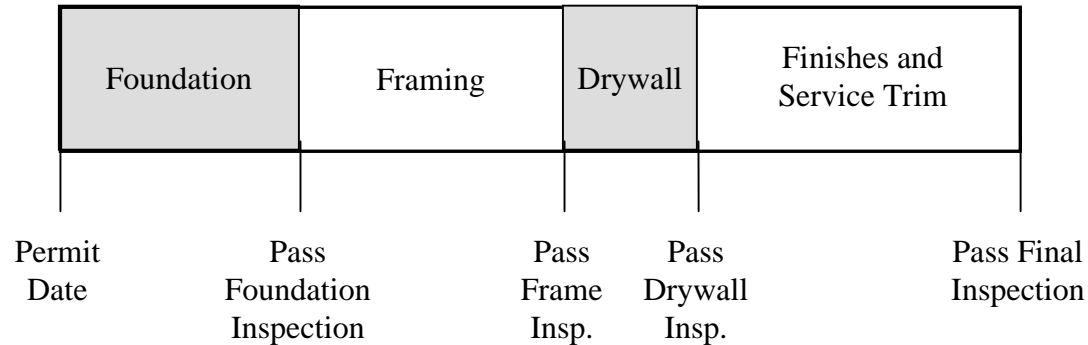
# Trade Contractor as Machine



## Complications:

1. N machine space?
2. Basis of measurement?
3. Inspections

# Inspections

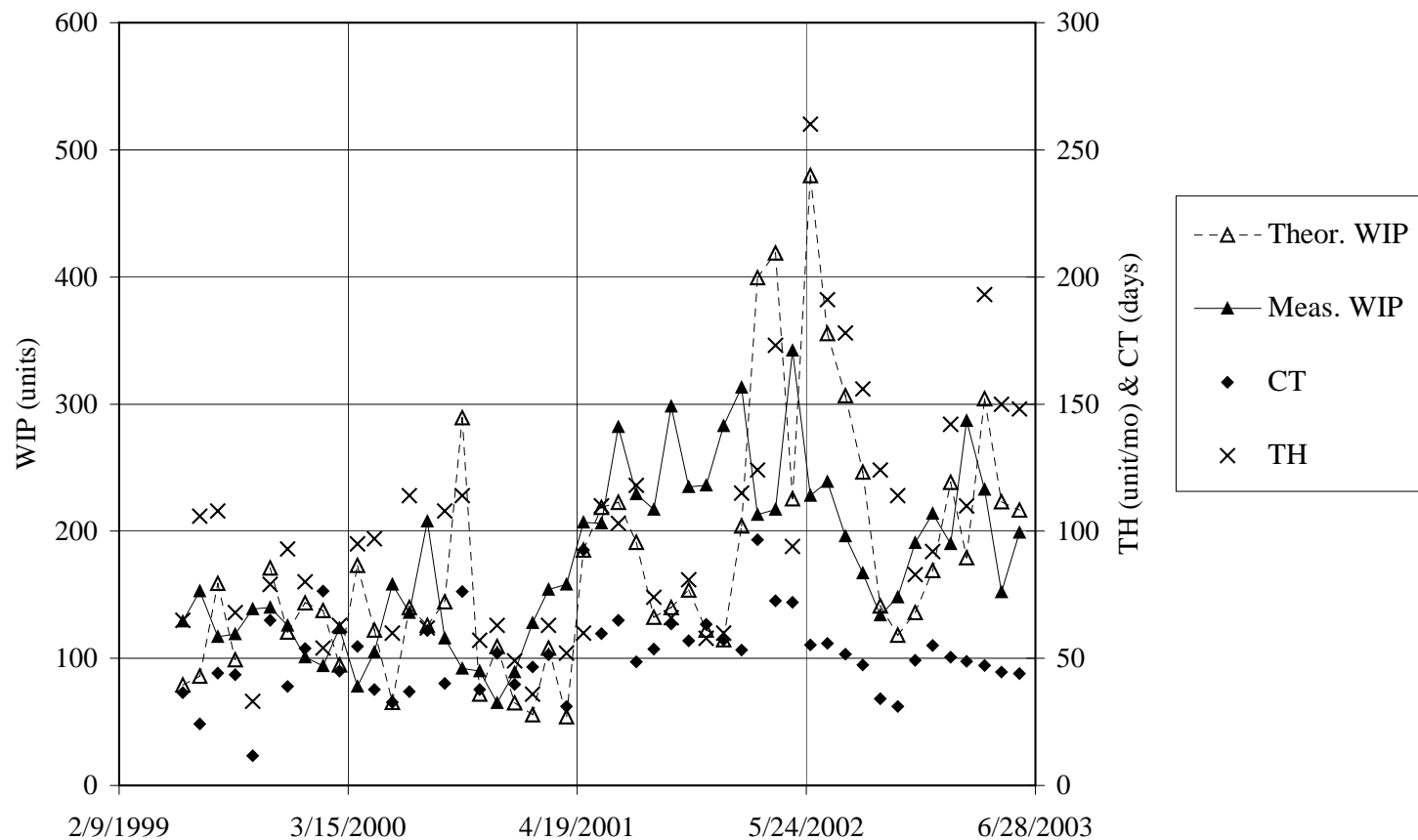


Inspection Type	Average Failure Rate		
	1st Inspection	1st Re-Insp.	2nd Re-Insp.
Foundation	24%	21%	20%
Framing	54%	49%	48%
Drywall	34%	26%	25%
Final	48%	33%	33%

# Inspections



# Workload Variations



# How long are the arms?

