Discussion of

Production Innovation and Credit Market Disruption

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July 2020

Research question

1. Product creation is pro-cyclical
   - Broda and Weinstein (AER, 2010): More products being introduced in expansions $\rightarrow$ missing generation of new products
   - Argente, Lee, and Moreira (JME 2018): Less product reallocation after 2008 financial crisis

2. Why?
   - Credit supply: lack of financing reduces investment in new products
   - Aggregate demand: lack of demand lowers NPV for product introduction

$\Rightarrow$ Did lack of financing in 2008 reduce product creation?

This paper

1. Construct measure of new product creation

2. Identify firm-level, cross-sectional variation in exposure to 2008 financial crisis

3. Analyze whether credit supply shock explains product creation

Measuring new products

1. Use Nielsen scanner data (2006 – 2015)
    - Around 53% of grocery store and 55% of drug store sales
    - 1 million different products; 40,000+ unique stores
    - Universe of retail consumer goods

2. What is a new product?
    - Product = barcode $\Rightarrow$ new product = new barcode
    - Product line = new barcode in new "module"
        - E.g., liquid detergent vs. packaged detergent (Tide Pods)

3. Firm-level entry rate
    - Product entry rate: New barcodes/total existing barcodes
    - Product line entry rate: Barcodes in new modules/total existing barcodes

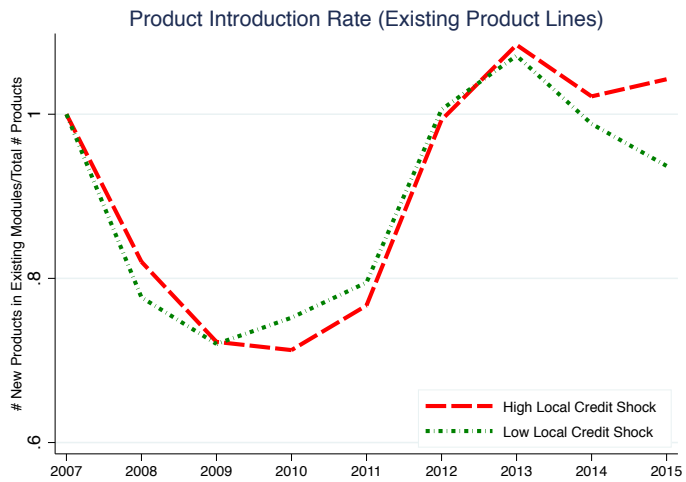
Empirical strategy

1. Firm size in retail consumer goods is highly skewed
   - Median firm: 4 products, 1 module, \$24,000 in revenues
   - Very large firms: e.g., P&G, Unilever $\geq$ \$50 bil revenues

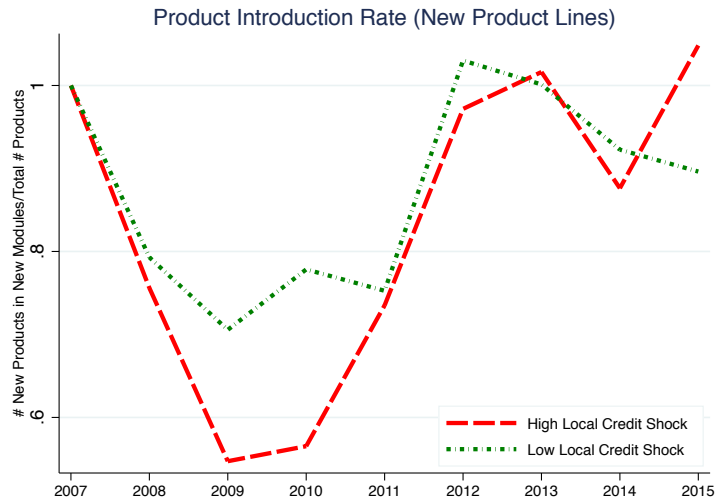
2. Two existing empirical strategies
   - Lending to small firms (Greenstone et al (2020))
     - Small business lending data, loan size is $\leq$ 1 mil
     - Exploits variation in bank market shares
   - Large firm lending (Almeida et al (2012))
     - Syndicated loan data
     - Exploits variation in share of long-term financing to be rolled over

Results: Small Firms

New product



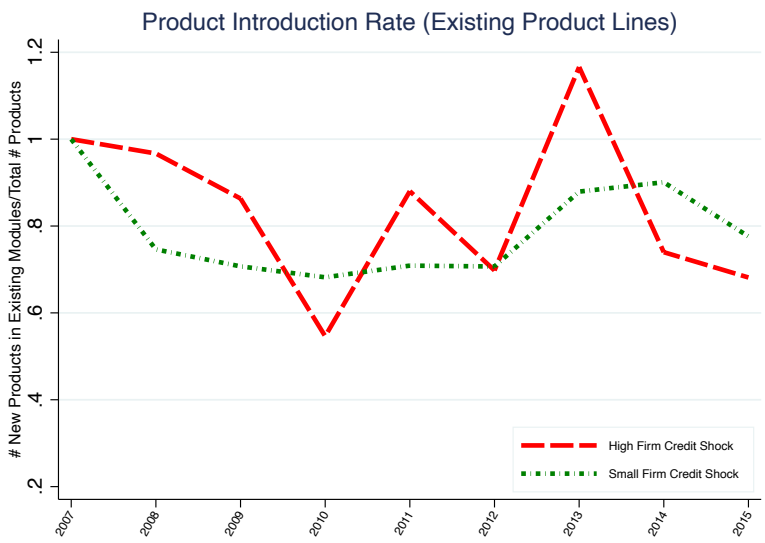
New product line



1. No effect for new products; significant effect for new product lines
2. One-standard deviation increase in credit supply shock reduces entry rate by 0.18% (about 10-15% of observed decline)

Results: Large Firms

New product



New product line

1. No effect for new products; significant effect for new product lines
2. Timing after 2011 is bit off (small N?)

Commment #1: How to construct standard Bartik?

1. Intuition (2 banks)
   - Suppose Citibank cuts back lending relative to JPMorgan Chase
   - Shock is larger in areas with higher pre-crisis Citibank market share
2. Constructing supply shock (many banks)
   - Credit Shock$_c = \sum_b \Delta Lending_b^{2007-10} \times MarketShare_{b,c}^{2007}$

     $\Delta Lending_b$ = Change in Bank Lending 2007-2010

     $MarketShare_{b,c}^{2007}$ = Market share of bank b in county c in 2007
3. Identification assumption
   - Market shares in 2007 are instruments for credit supply shocks
   - Concern is that market share are correlated with credit demand
     - E.g., Citibank market share correlated with housing bust

Comment #1: How to construct modified Bartik?

1. Modification: Control for locally correlated demand shocks

$$\Delta Lending_{b,c}^{2007-10} = \gamma_b + \delta_c + \epsilon_{b,c}$$

   - γ_b: Bank fixed effects (supply shocks)
   - δ_c: County fixed effects (local demand shocks)

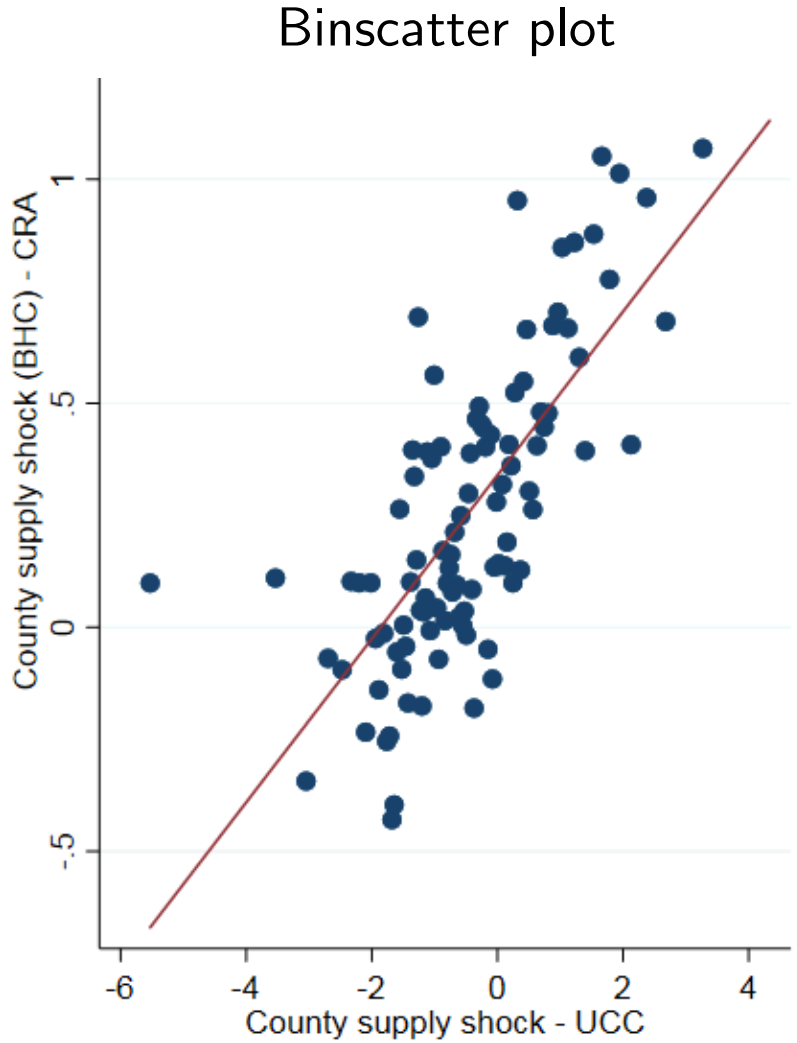
2. Construct county-level supply shock
   - Modified Credit Shock$_c = \sum_b \hat{\gamma_b} \times MarketShare_{b,c}^{2007}$

3. Identification assumption
   - Market share in 2007 are instruments for credit supply shocks
   - Improved because it addresses an obvious endogeneity concern
   - Concern remains that bank FE are correlated with credit demand
     - E.g., Citibank is specialized in housing and construction loans

Comment #1: What to do about Bartik?

1. Identify credit supply shock directly
   - Four largest banks cut back more (Chen, Hanson, and Stein (2017))
2. Control for bank specialization
   - Not possible with CRA small business lending data
   - Possible with an alternative dataset ("UCC dataset")
     - Lenders maintain priority in bankruptcy via Uniform Commercial Code (UCC) filing
     - Complements CRA dataset (Gopal and Schnabl (2020))
     - Includes firm identifier and industry

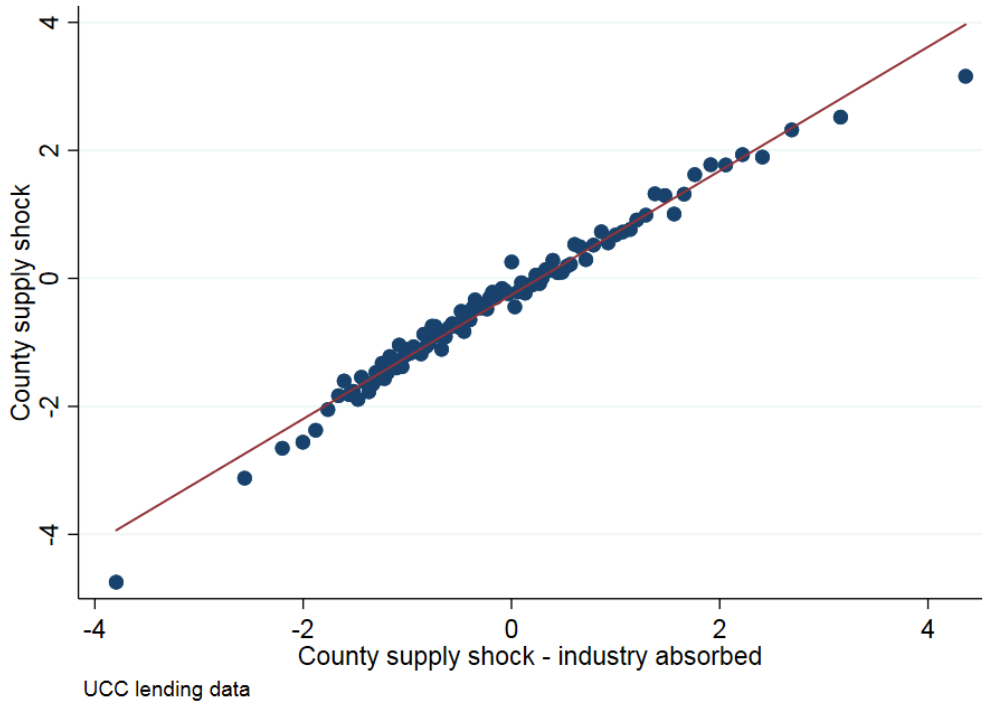
Comment #1: Compare CRA and UCC dataset



1. Modified Bartik instrument is similar with CRA and UCC data

Comment #1: Are results robust to bank specialization?

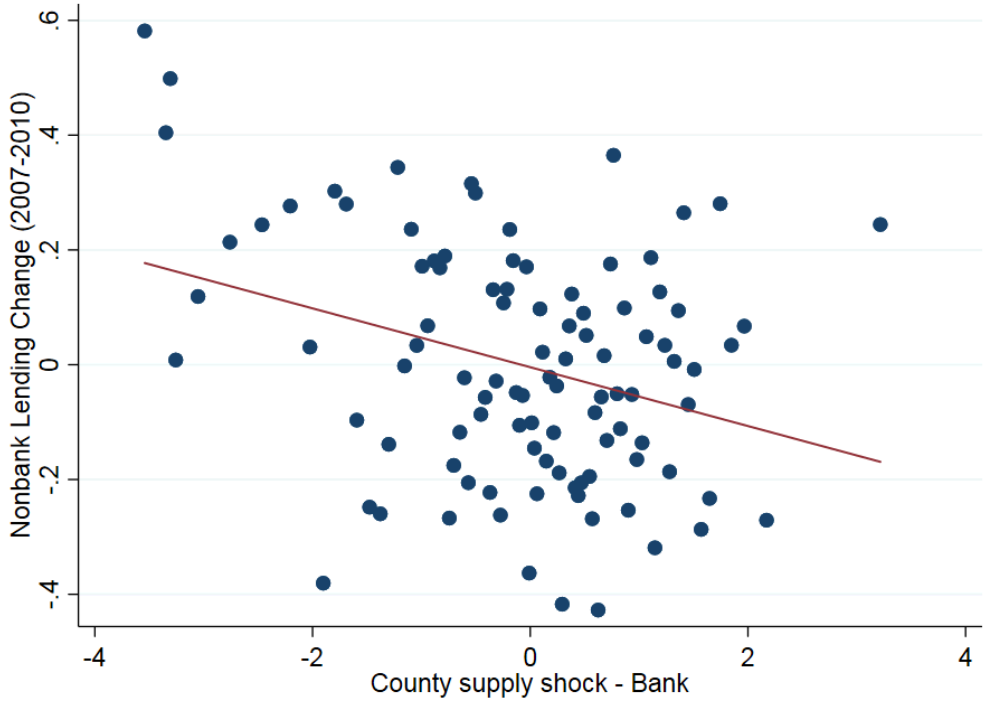
$$\Delta Lending_{b,c}^{2007-10} = \gamma_b + \delta_c + \eta_{industry} + \epsilon_{b,c}$$



1. Credit supply shock similar after adding 4-digit industry controls

Comment #1: Nonbank lenders partially substitute

Credit supply shock and nonbank lender growth



1. Majority of small business loans in 2016 are made by nonbanks (finance companies, FinTech lenders)
2. Nonbank lenders partially substituted for bank lending

$\Rightarrow$ May explain why impact is economically small and ends in 2010

Comment #2: Product creation and innovation

1. Paper argues that results capture radical product innovation

2. What is radical innovation?
   - Coronavirus vaccine, self-driving cars, the first iPhone

3. Production creation in consumer retail
   - Example: Crayola crayons

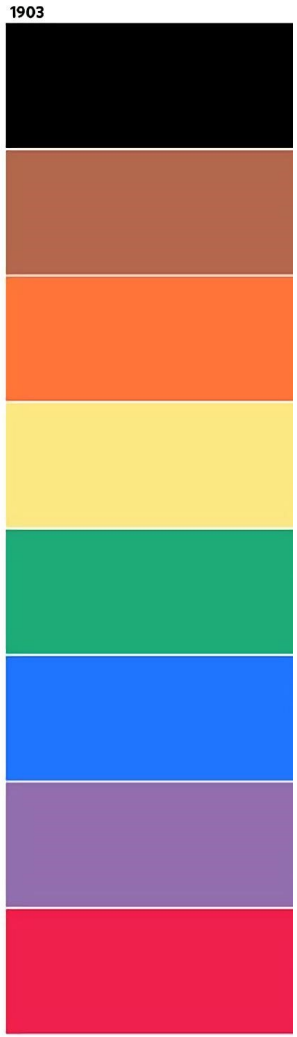
Comment #2: Product creation and innovation

Original box

Today's box

1. Introduced in a chemistry competition at 1900 Paris Exposition
2. Name recognition of 99% in U.S. consumer households

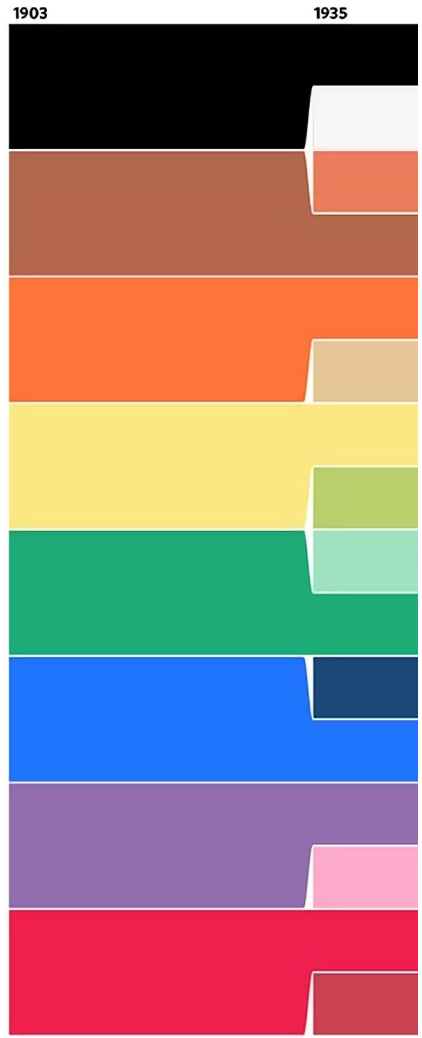
Comment #2: Crayola crayons



- Introduced with 8 colors

Discussion of Granja and Moreira (2020)

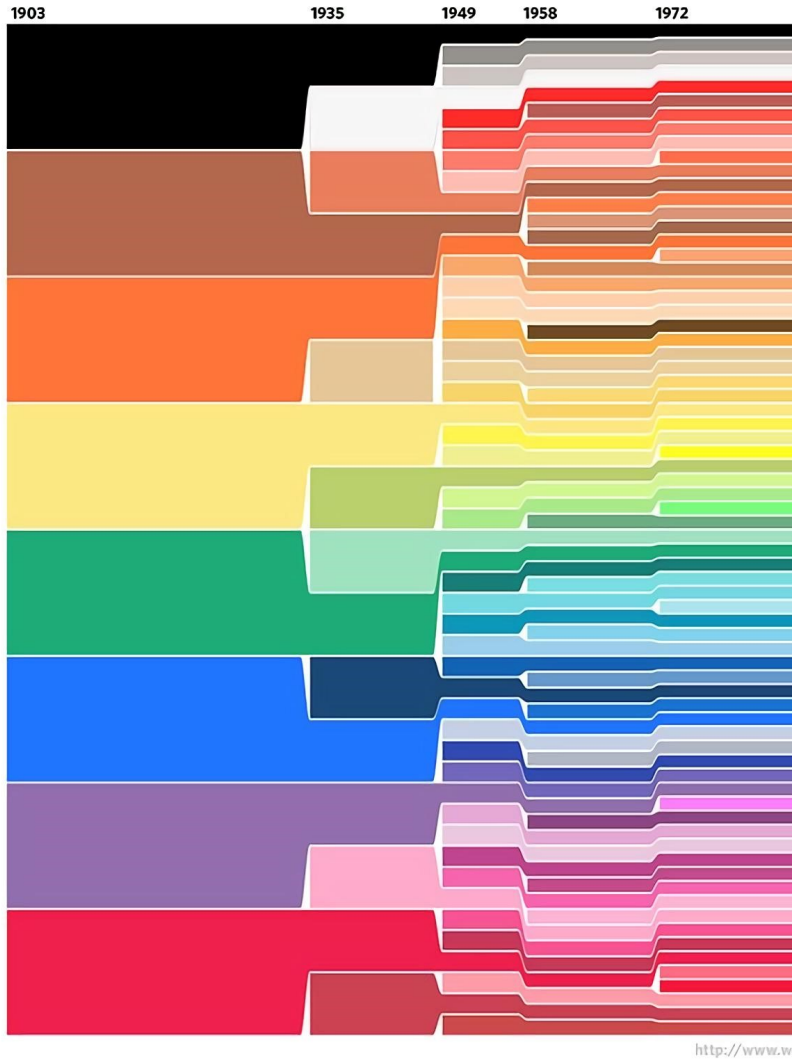
Comment #2: Crayola crayons



- Expanded to 16 colors in 1935

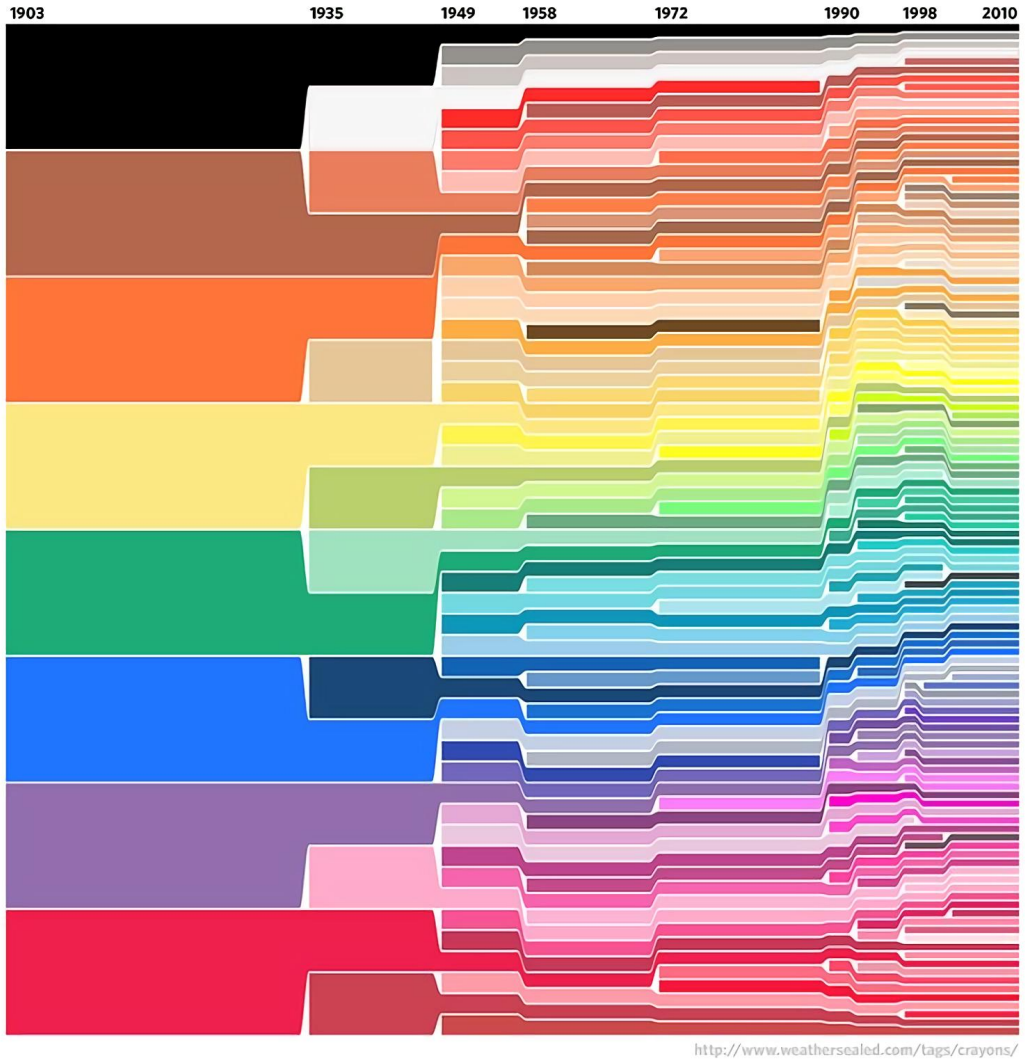
Discussion of Granja and Moreira (2020)

Comment #2: Crayola crayons



- Expanded to 64 colors in 1949

Comment #2: Crayola crayons



- We now have 164 colors including Mango Tango, Inchworm, Jazzberry Jam

Discussion of Granja and Moreira (2020)

Comment #2: Product creation and innovation

1. How much radical innovation in consumer retail?
   - Much product creation may be of the "Crayola" variety
   - Radical innovation surely exists but is rare
   - New product line may not capture radical innovation

2. Production innovation or creation/introduction?
   - Innovation literature often focuses on R&D expenditure and patents
   - Often a long lag between investment and product
   - Product introduction/creation may be about marketing and production facilities

$\Rightarrow$ Focus on product creation/introduction may be more plausible

Conclusion

1. Interesting and creative paper
2. Analysis shows that finance played a role in product creation
3. Comments
    a. Consider the role of nonbanks in small business lending
    b. Reconsider results on product innovation vs. introduction/creation