Available online at www.sciencedirect.com

ScienceDirect

Explorations in Economic History 50 (2013) 487–507

www.elsevier.com/locate/eeh

Cementing the case for collusion under the National Recovery Administration ☆

Mark Chicu[a], Chris Vickers[a,*], Nicolas L. Ziebarth[b,c]

[a] Northwestern University, United States
[b] University of Iowa, United States
[c] NBER, United States

Received 21 August 2012
Available online 15 July 2013

Abstract

Macroeconomists have long debated the aggregate effects of anti-competitive provisions under the "Codes of Fair Conduct" promulgated by the National Industrial Recovery Act (NIRA). Despite the emphasis on these provisions, there is only limited evidence documenting any actual effects at the micro-level. We use a combination of narrative evidence and a novel plant-level dataset from 1929, 1931, 1933, and 1935 to study the effects of the NIRA in the cement industry. We develop a test for collusion specific to this particular industry. We find strong evidence that before the NIRA, the costs of a plant's nearest neighbor had a positive effect on a plant's own price, suggesting competition. After the NIRA, this effect is completely eliminated, with no correlation between a plant's own price and its neighbor's cost.

Keywords: Collusion; New deal; Cement

1. Introduction

For a brief period during the Great Depression, American industrial policy actively promoted cartelization of much of the economy. This goal was codified in the National Industrial Recovery Act of 1933 (NIRA), which created the National Recovery Administration (NRA). The act had the stated intention of "eliminat [ing] cut throat competition" and promoting "fair competition." President Franklin Roosevelt and his advisers argued that price cutting drove out businesses, led to ruinous deflation, and caused low wages that led

☆ We thank Paul Grieco, Igal Hendel, Jason E. Taylor, Robert Porter, David Prentice, two anonymous referees, the editor, and participants at the NBER Conference on the Microeconomics of the New Deal for comments. Stephen Karlson helpfully provided some unpublished data on plant-level capacities. William Creech at the National Archives provided useful information on the data. Mary Hansen helped organize data collection at the National Archives. Dan Thomas did excellent work photographing the original schedules. Connie Field and Gwen Wang at the Portland Cement Association were of great help in navigating their library. The Center for the Study of Industrial Organization, Joe Ferrie, and Joel Mokyr all provided funding for data collection and digitization. NLZ also thanks the Robert Eisner Memorial Fellowship and Sokoloff Fellowship for providing support.

* Corresponding author.
E-mail addresses: mchicu@gmail.com (M. Chicu), czvickers@gmail.com (C. Vickers), nicolas-ziebarth@uiowa.edu (N.L. Ziebarth).

0014-4983/$ - see front matter © 2013 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.eeh.2013.07.002

to a vicious cycle of underconsumption and further wage cuts. Their solution was greater national planning and coordination within industries.[1] This meant that in consultation with government officials, industries drew up the so-called "Codes of Fair Conduct" to regulate competitive behavior. By the end of 1933, a large part of the American economy, including the cement industry studied here, was operating under such a code. In addition, hundreds of other industries were seeking approval of codes they had submitted.

Though the ramifications of this law could have been huge, there is little consensus on its effects at the micro- (or macro-) level. Part of the reason for the disagreement is the level of aggregation which previous studies use. It is natural to study collusion at the plant or firm level, but the literature on this question, with the exception of Alexander and Libecap (2000), has relied on industry-level data. In this paper, we contribute to the literature by examining the cement industry using newly digitized plant-level records from the Census of Manufactures in 1929, 1931, 1933, and 1935. We first provide narrative evidence from trade journals that is suggestive of collusion and close adherence to the code. We then develop a test for collusion motivated by the particular features of the industry.

Because of the geographic segmentation in the cement industry, the cost of a plant's nearest neighbor plays a key role in disciplining the plant's pricing choice in a competitive market. Under collusion, the costs of the nearest neighbor have no effect. The plant charges its monopoly price, which depends solely on its own cost. The model of collusion we use results in an optimal division of the market in order to maximize monopoly rents. This outcome is consistent with the NRA code, which authorized an industry trade group to develop market sharing plans but did not specify prices should be kept uniformly high. Our regression results imply that before the industry's code came into force, in line with the theory, the average price a plant charges was strongly correlated with the costs of its nearest neighbor, controlling for the plant's own costs. While the code was in force, this correlation between own price and neighbor's cost diminishes, though own cost still had a large positive effect on price. Our test provides evidence for the collusive impact of the NIRA.

This paper joins the literature stretching back to Bellush (1975) that highlights evidence for collusion under the NIRA. Besides this earlier work, Alexander (1994) finds that the critical concentration ratio fell after the introduction of the NIRA, which is evidence that the codes facilitated collusion. More recently, Taylor (2002) uses an index of durable good output for several different industries at a monthly frequency. He finds that an industry's output fell after its code came into force, which is consistent with a cartelization story.[2] Vickers and Ziebarth (2011) reexamine the macaroni industry with plant-level data from the source employed here and find evidence for collusive activity, in contrast to Alexander (1997).

On the other hand, many authors have suggested that these codes had little effect on promoting collusive behavior. Alexander (1997), Krepps (1997), and Alexander and Libecap (2000) all argue that these codes were ineffective. Alexander suggests that one reason for the failure of the codes was due to intra-industry heterogeneity. Low cost plants had a much higher return to cheating on a collusive agreement than high cost plants. This means that small shifts in exogenous circumstances pushed low cost firms to exploit their advantage and undercut the agreement. Both Hawley (1974) and Brand (1988) make similar arguments regarding the sources of conflict, with the added contention that these codes were drawn up to benefit small firms. This is echoed in Alexander and Libecap (2000), who use some limited firm-level data. Responding to Alexander (1994), Krepps (1997) finds no evidence that the critical concentration ratio actually changed once a consistent set of industries are used.[3]

2. Data

The data used for this paper come from the Census of Manufactures (CoM) for 1929, 1931, 1933, and 1935, the first half of the Great Depression. Between 1880 and 1929, after tabulations were made, the schedules were either destroyed intentionally by an act of Congress or through a combination of fire and bureaucratic neglect. For reasons still unclear, the schedules we use were kept and are housed at the National Archives. The questions on the schedules include revenue, quantity of output, total wage bill, cost of intermediate goods, and number of wage earners employed at a monthly frequency. There is other information about whether the plant is incorporated and, if unincorporated, who the owner is.

[1] At the beginning of the Depression, President Herbert Hoover actually supported many of these ideas through the strengthening of voluntary trade associations. Ohanian (2009) points to these policies of artificially inflating wages and prices as a major cause of the Depression itself. Rose (2010) argues that these policies had limited effects.

[2] In subsequent work, Taylor (2007) identifies features of the codes that made them particularly effective in fostering collusion.

[3] He, like Taylor, points to some aspects of the codes that do seem to be correlated with a decline in the critical concentration ratio.