The micro-economic effects of financial market structure: evidence from 20th century North American steel firms

Ian Keay a,∗ and Angela Redish b

a Department of Economics, Queen’s University, Kingston, ON, Canada K7L 3N6
b Department of Economics, University of British Columbia, Suite 997, 1873 East Mall, Vancouver, BC, Canada V6T 1Z1

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Abstract

This paper analyzes the historical relationship between domestic financial institutions, firm level financing decisions, and average capital costs in a sample of US and Canadian firms from a large and economically important manufacturing industry—primary steel production. We find that national capital market characteristics and firm specific characteristics were important determinants of 20th century US and Canadian steel firms’ financing decisions. We also show that, despite source-specific price differences, average capital costs were approximately equal in the two countries, and the firms’ financing decisions were important determinants of these average capital costs. We conclude that firms structured their balance sheets in an effort to exploit the idiosyncratic features of their domestic financial institutions, and thereby, minimize their average capital costs.

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1. Introduction

Economists have frequently posited an important link between the existence of efficient financial markets and economic growth, but micro-level evidence on the
nature of this link has been scarce.\(^1\) In this paper we use evidence from a sample of 20th century North American primary steel producers’ balance sheets to investigate the extent to which firms sought to minimize their average capital costs by exploiting the unique characteristics of their domestic financial institutions. Specifically, we test the strength of the relationship between domestic capital market characteristics and firm specific financing decisions. Having established the importance of this link, we then test for a relationship between these firm specific financing decisions and average capital costs.

Primary steel producers are the focus of our study because they have traditionally been a significant part of the industrial economies of the United States and Canada, and we have access to financial information for virtually all North American firms. Financial institutions in Canada and the United States are of interest because, while they were sophisticated and diverse in both nations throughout the 20th century, they were not identical. In particular, they differed in the extent of the markets for tradable financial assets and in the nature of the banking systems.

We find that US and Canadian firms used different financial instruments to fund their growth: the US firms consistently employed significantly less short-term debt and formal stock issues, but significantly more long-term debt and retained earnings. If we control for the idiosyncratic features of the capital markets in the two countries, then the cross-border differentials among three of the four financial instruments available to the firms become statistically indistinguishable. If we control for firm specific characteristics, we cannot identify any statistical differences in the composition of the US or Canadian firms’ balance sheets.

In addition to our identification of a relationship between the composition of national capital markets, firm specific characteristics and firms’ financing decisions, we also find that despite higher prices for capital flowing from formal securities markets in Canada, there was no significant difference in the average price paid for capital by the steel firms in the two countries. Our inability to distinguish between US and Canadian average capital costs simply emphasizes the importance of micro-level financial decisions and the fungible nature of capital. In particular, the Canadian firms relied to a greater extent on funds from internal, short-term, or informal sources that provided them with capital at a price that was low, relative to the price their US counterparts paid for their capital from these same sources. The structure of the firms’ balance sheets was a significant determinant of their average capital costs. Cross-border differences in the firms’ balance sheets, therefore, reflect the producers’ and investors’ responsiveness in the face of idiosyncratic financial environments. These findings imply that for diverse, sophisticated markets, such as those found in Canada and the US during the 20th century, there were no specific features that necessarily characterized an “optimal,” or for that matter a “suboptimal,” set of fi-

\(^{1}\) The relationship between financial institutions and economic development has been discussed by influential economists for over 200 years (Smith, 1776; Gerschenkron, 1962; Rostow, 1963). More recently noteworthy quantitative work has sought to characterize the nature of the relationship at a macro-level (Allen and Gale, 2000; Davis and Gallman, 2001; Fohlin, 2000; Goldsmith, 1969; King and Levine, 1993; Patrick, 1966; Rousseau and Wachtel, 1998).
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