

# **Motor Makers on the US Securities Markets**

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## **CHAPTER 8**

in

### **BONDING AND SHARING CORPORATE AMERICA: THE US SECURITIES MARKETS, INDUSTRIAL DYNAMICS AND CORPORATE DEVELOPMENT, 1885-1930**

(Book synopsis included as Appendix)

#### **1. INTRODUCTION**

The automobile was not invented in the United States but the country did more than any other to advance its commercial production. The early 20<sup>th</sup> century was the great heyday of innovation in the industry with improvements in the product doing more to transform the appearance, design and performance of the car than at any time since. Process innovation, such as the introduction of the moving assembly line, drove costs, and then prices, down to make cars affordable to more and more people. The industry's capital requirements increased with the development of economies of scale but, even more importantly, with its own rapid expansion.<sup>1</sup>

Here then was a new industry that was highly innovative and hungry for capital as well as hugely successful. In this chapter I explore patterns of securities issuance by automobile firms during the early development of the industry. I show that automobile companies began coming to the securities markets in the early teens. They issued securities in greater numbers during the first motor stock boom from 1915-1916 and in a subsequent boom after the war. As boom turned to bust in 1920 they continued to rely on the securities markets but then, in the 1920s, their securities issues diminished to low levels with only a few, albeit notable, exceptions.

An analysis of the identity of automobile issuers reveals the importance of established players, including some of the leading car producers. Issues by small companies,

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<sup>1</sup> Throughout this chapter, I will focus on securities issues by US automobile makers. Nevertheless, most of what I say about patterns of securities issuance, the characteristics of issuers, and the purposes of their issues, also applies to related industries, especially trucks and automobile parts and accessories.

especially new entrants, tended to cluster in periods of booming stock prices. An assessment of the role that securities markets played for issuers reveals their importance of cash issues in funding their working capital requirements. Securities issues were also used to facilitate the formation and, sometimes the subsequent financing, of consolidations which occurred in a several spurts over the course of the period. And, finally, although securities issues did play a role in transferring financial claims over existing assets, that role was of less importance in this industry than the funding of working capital and consolidation.

## 2. THE DEVELOPMENT OF THE US AUTOMOBILE INDUSTRY, 1895-1934

The automobile industry was established in the US in the mid-1890s but it was not until the early 20<sup>th</sup> century that its first major growth spurt occurred. From 1904 to 1917 output grew at an annual rate of more than 25 per cent until America’s involvement in World War 1 led to a diversion of the industry’s resources and a decline in the industry’s output of motor cars. A post-war boom ensued but it turned to bust only a year later. However, the industry recovered in 1921 and sustained an average rate of growth of 10 per cent for the remainder of the 1920s.<sup>2</sup> Output peaked at 4.5 million passenger cars in 1929 but then declined precipitously with the onset of the Depression; the 1929 peak was not surpassed again until after World War II.<sup>3</sup>

The automobile industry’s impressive record of growth propelled it into a very important position in the nation’s economy. Even on the eve of World War 1, it had already reached a substantial size. As Table 1 shows, the industry produced nearly 600,000 cars and trucks in 1914 and the wholesale value of motor-vehicle production was \$655 million in current prices. As a result, it accounted for 1.4 per cent of total U.S. manufacturing output in that year, outranking much older industries like paper and pulp and boots and shoes in size.<sup>4</sup> By 1919 the real value of its output was more than 4 times what it had been in 1914 and amounted to nearly 5 per cent of total manufacturing output. And, by 1929, the wholesale value of the automobile industry’s output had reached nearly \$5 billion, or 7 per cent of total manufacturing output, making it the largest manufacturing industry in the country other than steel.<sup>5</sup>

Table 1 The Evolution of the US Motor Vehicle Industry

	1900	1904	1909	1914	1919	1925	1929
No of Motor Vehicles (in	4.2	22.8	131.0	569.1	1,933.6	4,265.8	5,358.4

<sup>2</sup> Growth was temporarily interrupted by further downturns in 1924 and especially in 1927.

<sup>3</sup> Federal Trade Commission, *Report on the Motor Vehicle Industry*, Washington, D.C., 1939, p. 23; Bureau of the Census, *The Statistical History of the United States*, 1976, p. 716.

<sup>4</sup> The value of output in current prices in 1914 was \$502 million for boots and shoes and \$520 million for paper, pulp and products (Daniel Creamer, Sergei Dobrovolsky, and Israel Borenstein, assisted by Martin Berenstein, *Capital in Manufacturing and Mining: Its Formation and Financing*, UMI, 1960, Table A-10, pp. 252-258).

<sup>5</sup> By then, the motor vehicle industry outranked all other comparable industries in its scale with the sole exception of the steel industry.

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of which Passenger Cars	4.2	22.4	127.7	543.7	1,657.7	3,735.2	4,587.4
Value of Output, 1929 \$m	20	21	132	507	2,211	4,765	4,765
% of Total Output of Mfg	0.09	0.08	0.40	1.39	4.90	6.69	6.69
Value of Total Capital, 1929 \$m	73	57	267	616	1,936	2,742	2,742
% of Total Capital in Mfg <sup>a</sup>	0.42	0.24	0.85	1.68	4.20	4.35	4.35
Capital/ Wage Earner (\$/ worker)	n.a.	2,007	2,624	3,945	6,223	9,549	11,073 <sup>b</sup>

Notes: measures cover all motor vehicles, complete or parts

<sup>a</sup> based on values in 1929 prices

<sup>b</sup> 1927

Sources: number of motor vehicles and passenger cars FTC, 1939, p. 23; value of output and total capital from Creamer, Dobrovolsky, and Borenstein, 1960, Tables A-10, A-13, A-8, and A-16 respectively; percentage of total capital in manufacturing calculated from Bureau of the Census, 1976, Series P 123-176, p. 685 (based on data from Creamer, Dobrovolsky, and Borenstein, 1960 and Creamer, 1961); capital/ wage earner from Steven Klepper & Kenneth L. Simons, "Technological extinctions of industrial firms: An inquiry into their nature and causes." *Industrial and Corporate Change*. 6 (March 1997): 379 - 460.

The huge success of the car industry in the United States was made possible by high levels of product and process innovation. During the period from the late 19<sup>th</sup> century to 1930, the automobile changed more than it ever has since. John Willys, later to become a prominent figure in the US automobile industry, provided an evocative description of his first sighting of an automobile in 1898: "It looked like a black box on wheels propelled by magic. The driver was steering it with a tiller bar. Smoke came from the back at every cough. The engine was underneath".<sup>6</sup> By 1930, automobiles looked and acted very differently. Among other changes they had steel, rather than wooden, bodies, their engines were mounted in front, drivers steered with wheels rather than tillers and they could be started automatically rather than cranked into action. Careful studies confirm that this was an era of extremely high fertility in the number and significance of product innovations.<sup>7</sup>

Process innovation also led to dramatic improvements in productivity. The installation of the elevated, moving chassis assembly line at the Ford Motor Company in 1914 is perhaps the best-known example. However, there were other process innovations during the period that were just as important in terms of their impact, such as the development of sectionalized body production at GM in 1923, baked enamel finishes at Ford in 1917 and lacquer paint finishes at GM in 1924.<sup>8</sup> These innovations translated into rapid productivity growth for the industry although typically with a time lag and to varying degrees for different producers. The number of automobiles produced per wage

<sup>6</sup> Boyden Sparks, "Down and Up," *Saturday Evening Post*, March 23, 1933, p. 72.

<sup>7</sup> William J. Abernathy, Kim Clark and A M. Kantrow, *Industrial Renaissance: Producing a Competitive Future for America*. Basic Books: New York, 1983; Arthur Pound, *The Turning Wheel*, NY, Doubleday, 1934; FTC, 1939, pp. 907-919.

<sup>8</sup> Abernathy, Clark, Kantrow, 1983, pp. 159.

earner increased dramatically between 1909 and 1914, from 1.7 to 4.5 cars, an expansion of 168 per cent. By 1921, an average wage earner's output was up 66 per cent to 7.5 cars and it increased by a further 58 per cent higher to 11.8 cars by 1929.<sup>9</sup> The industry's success in driving down costs, even as the cars they produced became more reliable, allowed for a dramatic decline in prices that made cars affordable for more and more Americans.<sup>10</sup>

Process innovation in the automobile industry was associated with substantial changes in its capital requirements. Leading studies of the industry emphasise the relatively low capital requirements in the early production of automobiles.<sup>11</sup> As Seltzer put it: "[t]he automobile was a new product chiefly as an assembled unit: its component parts were much akin to those of a number of other products. ... [t]he process of assembling was a short one; it required neither large plant nor elaborate equipment; and lands and buildings were as often rented as purchased".<sup>12</sup> However, with the rise of mass production, and the consequent increase in the importance of scale economies in the industry, capital requirements significantly increased; as Table 2 shows, capital invested per worker rose sharply from 1904 to 1921, then declined slightly before increasing again to the late 1920s. Moreover, the automobile industry's high rate of growth meant that the aggregate amount of capital invested in the production of motor vehicles grew rapidly. As a result, the motor vehicle industry's share of total manufacturing capital in the US rose from only 0.2 per cent in 1904 to 4.4 per cent by 1929 (Table 1).

The dramatic expansion of the US automobile industry, and the rapid innovation and capital accumulation that drove it, was associated with major changes in the competitive structure of the industry. The industry was characterized by high turbulence for its first quarter of a century with large numbers of entries and exits<sup>13</sup> which resulted

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<sup>9</sup> FTC, 1939, p. 7. Value added per wage earner displayed a fairly similar trend, increasing from \$1,552 in 1909 to \$2,177 in 1914, \$3,564 in 1921 and \$4,475 in 1929 (FTC, 1939, p. 7).

<sup>10</sup> Between 1906 and 1940, the real prices of automobiles dropped almost 70%. Most of the change occurred between 1906 and 1918 (Daniel Raff and Manuel Trajtenberg, "Quality Adjusted Prices for the American Automobile Industry," in Timothy Bresnahan and Robert Gordon, eds., *The Economics of New Goods* (Chicago: University of Chicago Press, 1997).

<sup>11</sup> Ralph C. Epstein, *The Automobile Industry: Its Economic and Commercial Development*, NY, Arno Press, 1928, p. 39; Lawrence Seltzer, *A financial history of the American automobile industry; a study of the ways in which the leading American producers of automobiles have met their capital requirements*, Clifton, NJ, A. M. Kelley, 1928, pp. 19-20.

<sup>12</sup> Seltzer, 1928, pp. 19-20.

<sup>13</sup> Klepper and Simons show that entry increased from the establishment of the industry to peak in the years from 1907 to 1910 at close to 80 firms per annum. Entry declined to an average of only 16 companies per year from 1911 to 1921, with the exception of a brief entry boom after WW1. In the 1920s, entry into the automobile industry largely ceased. Until the 1920s, patterns of exit tended to lag entry by a couple of years and to involve somewhat fewer firms. However, by the end of the teens and especially in the early 1920s, exit rates broke away from the pattern of entry as incumbents as well as entrants left the industry (Steven Klepper & Kenneth L. Simons, "Technological extinctions of industrial firms: An inquiry into their nature and causes." *Industrial and Corporate Change*. 6 (March 1997): 379 – 460).

in major changes in the number of producers operating in the industry. That number increased from only 4 producers in 1895 to peak at 271 in 1910. The population of automobile firms then declined sharply to about 120 firms by the late teens and, despite a slight rise thereafter, dropped precipitously in the 1920s to reach just over 25 firms by 1929.<sup>14</sup>

Changes in the competitive structure of the automobile industry were not confined to variations in the number of producers operating in the industry. Among the producers that survived, as Table 2 shows, a dramatic consolidation occurred. As early as 1917, three producers – Ford, General Motors and Willys-Overland – accounted for 60 per cent of the market. By 1923, the combined market share of these same three players, which were still the industry leaders even if Willys-Overland had lost ground, was 76 per cent. Willys-Overland eventually ceded third place to Chrysler,<sup>15</sup> a company formed from the consolidation of Dodge Brothers and Maxwell in 1928 and, in 1929, GM, Ford and Chrysler, held a combined market share of 74 per cent.<sup>16</sup>

Table 2 Number of Motor Vehicles Produced by Ten of the Leading Producers  
% of total US production

Company	1912	1917	1923	1926	1929
Ford	78,440 20.8%	785,432 41.9%	2,090,959 51.2%	1,442,950 32.6%	1,951,002 36.4%
General Motors	49,696 13.1%	203,119 10.8%	798,555 19.6%	1,234,850 27.9%	1,899,267 35.4%
Studebaker	28,523 7.5%	42,357 2.3%	145,167 3.6%	111,315 2.5%	107,658 2.0%
Dodge	n.a. <sup>a</sup>	90,000 4.8%	179,505 4.4%	331,764 7.5%	n.a. <sup>b</sup>
Willys-Overland	22,548 6.0%	130,988 7.0%	196,038 4.8%	179,103 4.0%	257,407 4.8%
Maxwell-Chrysler	(a)	81,667 4.4%	67,374 1.7%	175,020 4.0%	450,543 8.4%
Hudson	5,449 1.4%	21,320 1.1%	88,184 2.2%	244,667 5.5%	300,783 5.6%
Reo	6,342 1.7%	30,246 1.6%	31,880 0.8%	34,542 0.8%	35,010 0.7%
Packard	4,559 1.2%	19,475 1.0%	22,930 0.6%	34,000 0.8%	n.a.
Nash	(a)	12,179 0.6%	56,569 1.4%	137,376 3.1%	121,063 2.3%
Total	195,557 51.7%	1,416,783 75.6%	3,677,161 90.1%	3,925,587 88.6%	5,122,733 95.6%

<sup>14</sup> Klepper and Simons, 1997, pp. 387-8. The analysis by Klepper and Simons (1997) is based on data compiled from Smith (1968) but they also confirm the patterns they show by counting automobile firms listed in the *Thomas Register of American Manufacturers*. Data presented by Epstein (1928) on entry and exit show somewhat different trends but include fewer companies.

<sup>15</sup> By then, Willys-Overland also ranked behind Hudson.

<sup>16</sup> FTC, 1939, p. 27.

Total United States	378,000	1,873,949	4,079,992	4,428,286	5,358,420
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<sup>a</sup> manufacture not yet undertaken.

<sup>b</sup> acquired by Chrysler in 1928.

Source: 1912, 1917, 1923, 1926 from Seltzer, 1928, p. 57; 1929 from Moody's Industrial Manuals and FTC, 1939, p. 23.

This trend towards the consolidation of such a rapidly-growing industry was reflected in the phenomenal growth of the leading companies. By 1917, eight of the industry's leading companies were included in the ranks of the nation's largest industrial enterprises.<sup>17</sup> The three largest companies at the time, Ford Motor Company, General Motors and Willys-Overland, with assets of \$166 million, \$134 million, and \$113 million respectively, were among the largest fifty industrial companies in the US at the time. By 1930, the list of the country's largest 200 industrial enterprises still contained eight automobile companies and the industry's two leaders, GM and Ford, were numbers three and six on that list with assets of \$1,316 million and \$782 million respectively.<sup>18</sup>

### 3. SECURITIES ISSUES BY THE US AUTOMOBILE INDUSTRY

In 1930, the securities of thirteen automobile companies were traded on the New York Stock Exchange.<sup>19</sup> The names of all of the leading companies were included in this group with the notable exception of the Ford Motor Company which was privately held by the Ford family. By 1930, therefore, the industry had arrived as far as the securities markets were concerned but this did not happen overnight. Two decades earlier, in 1910, the securities of automobile companies did not trade on any of the nation's leading securities markets.<sup>20</sup>

This picture began to change when automobile companies came to the public markets to issue securities on their own behalf. Prior to 1908, an extensive search of the relevant sources revealed no signs of any security issues by identifiable automobile companies.<sup>21</sup>

<sup>17</sup> Ford Motor, GM, Willys-Overland, Studebaker, Maxwell Motor, Dodge Brothers, Packard Motor Car, Pierce Arrow Motor Car (Chandler, 1977, pp. 638-643).

<sup>18</sup> Alfred D. Chandler, Jr., with the assistance of Takashi Hikino, *Scale and Scope: The Dynamics of Industrial Capitalism*, Cambridge, Mass. : Belknap Press of Harvard University, 1990, pp. 638-650.

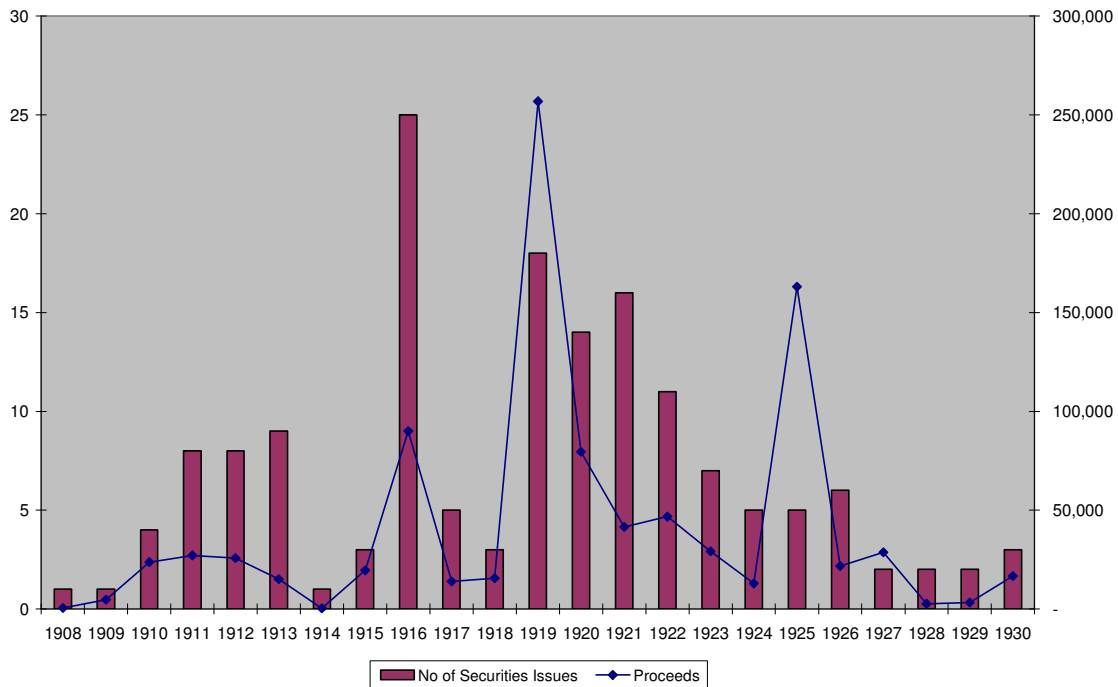
<sup>19</sup> Auburn Automobile, Chrysler Corp, Gardner Motor, General Motors Corp, Graham-Paige Motors, Jordan Motor Car, Moon Motor Car, Nash Motors, Packard Motor Car, Peerless Motor Car, Reo Motor Car, Studebaker, Willys-Overland. The New York Curb created markets for the securities of two more American automobile companies in 1930 (Durant Motors and Stutz Motor Car) and also traded the American Depositary Receipts of the British subsidiary of Ford Motor Company, as well as those of Austin Motor Car, Fiat and Rolls Royce, and the securities of Ford Motor Co of Canada.

<sup>20</sup> The New York Stock Exchange, the Boston, Philadelphia, Baltimore and Chicago Exchanges, the New York Curb Market. Based on data on securities traded on these markets in *The Financial Review*, 1911. GM common and preferred, Studebaker common and preferred, and US Motor common and preferred all traded on the Curb in 1911. There is some evidence that motor securities were traded on over-the-counter markets at this time. However, these were securities that initially had been issued to insiders and only slowly made their way onto trading markets as they were sold off to outsiders. Over-the-counter markets in these securities tended to be thin.

<sup>21</sup> *Journal of Commerce; Commercial and Financial Chronicle*, various volumes.

However, beginning in that year, as Figure 1 shows, automobile companies began to issue bonds and stock on the nation's securities markets. By 1913, a total of 31 issues had been undertaken by automobile companies to raise proceeds of \$96.9 million.

Figure 1 Securities Issues for Cash by Automobile Companies, 1908-1930



Source: author's analysis based on data compiled from Journal of Commerce.

Notwithstanding this flurry of activity, this was not a propitious time to issue automobile securities. As Figure 2 shows, the stock prices of the few automobile companies that traded lost value relative to other industrials until the end of 1913. It is perhaps not surprising, therefore, that there was a decline in the number of issues by automobile companies and the proceeds they raised in 1914.<sup>22</sup>

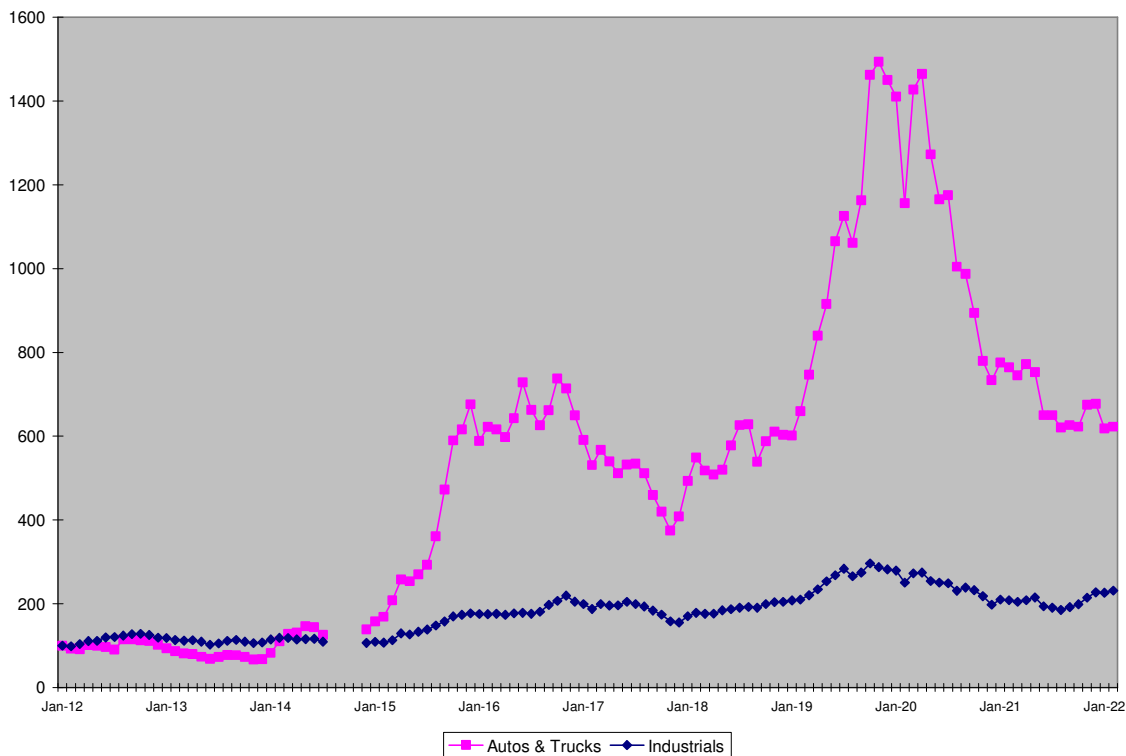
Beginning in early 1914, there were signs of a broadening of financial interest in the automobile industry and a motor stock boom got underway from early 1915 and lasted through late 1916. As Figure 2 shows, the prices of common stocks of automobile and truck companies soared from March 1915 to their peak in October 1916.<sup>23</sup> Automobile companies took advantage of the inaugural boom in the prices of their securities to raise substantial amounts of funds. In total, 43 security issues were undertaken by automobile companies in 1915 and 1916 to raise proceeds of more than \$132 million.

<sup>22</sup> A contributing factor may have been the temporary closure of the New York Stock Exchange from July to December 1914 in response to the onset of World War 1 but the decline set in well before this event.

<sup>23</sup> By 338 per cent compared with an increase of 93 per cent for industrials in general.

These offerings were taken up with great enthusiasm by investors and they led to a marked expansion in the number of motor companies whose securities were traded on the public markets.

Figure 2 Cowles Commission Common Stock Index for Automobiles & Trucks, January 1912-February 1922



Source: Alfred Cowles, 3<sup>rd</sup> and associates, *Common-stock indexes, 1871-1937*, Bloomington, Ind, Principia Press, 1938, pp. 240-241.

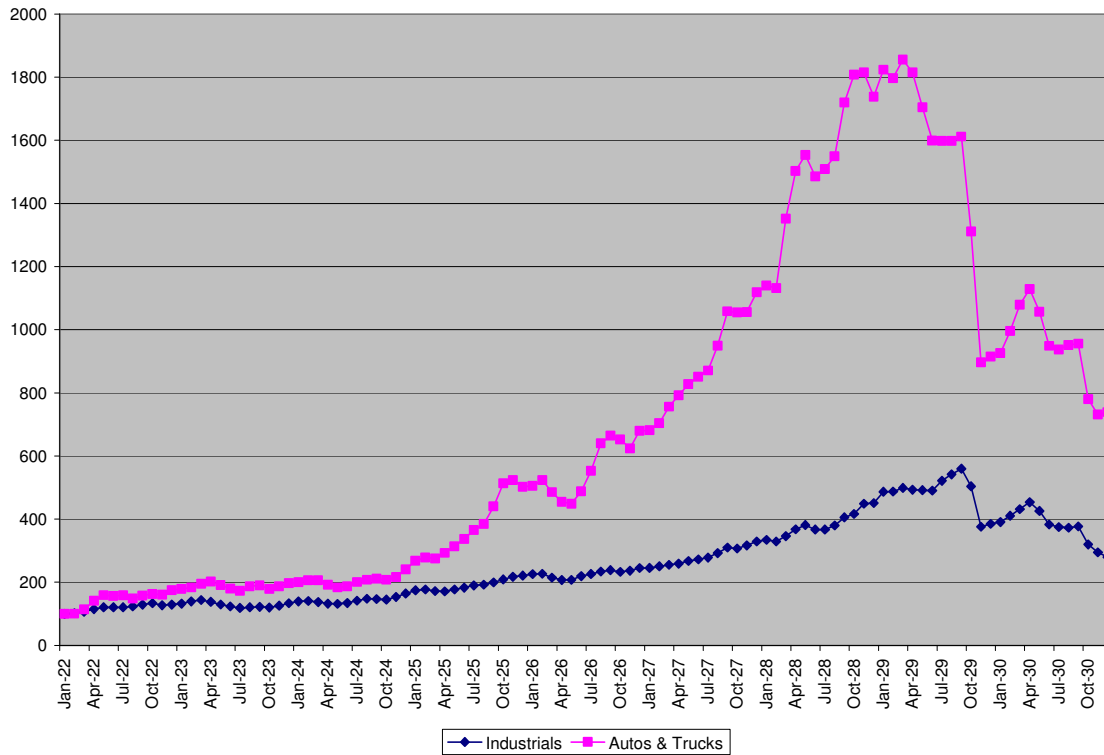
The motor stock boom petered out by 1917 and, by the end of the year, automobile stock prices were down substantially. However, although they bottomed out at more than twice what they had been before the boom began, the numbers and value of securities issues declined in 1917 and 1918 to levels that compared with the years before the boom.

Motor stocks recovered from their low point in November 1917 and, with postwar conversion going more smoothly than expected, stock prices of automobile companies rose even further.<sup>24</sup> Issuance activity by automobile companies took off with the total proceeds raised by automobile companies during 1919 smashing all previous records, even if the number of issues was lower than during the previous boom. Fundraising

<sup>24</sup> By more than 140 per cent, compared with 38 per cent for industrials, from January 1919 to April 1920.

remained high in 1920 but towards the end of the year boom turned to bust in the automobile industry.

Figure 3 Cowles Commission Common Stock Index for Automobiles & Trucks, January 1922-December 1930



Source: Alfred Cowles, 3<sup>rd</sup> and associates, *Common-stock indexes, 1871-1937*, Bloomington, Ind, Principia Press, 1938, pp. 240-241.

This time the prices of automobile stocks gave up the gains they had made in the boom, returning to a level that was very close to where they had been in early 1919. The number of issues by automobile companies remained significant in 1921 and 1922 although the amounts of money raised were relatively low. Then, from 1923, there was a marked downward trend in the numbers and proceeds of securities issues by automobile companies despite the fact that automobile stock prices recovered during this time to enjoy a long period of growth from early 1922 through early 1929.<sup>25</sup> The one, albeit prominent, exception was in 1925 when the amount of money raised in securities issues by automobile companies spiked sharply upwards.

<sup>25</sup> With the exception of a brief period of declining prices in early 1926. By March 1929 the prices of motor stocks were up 670 per cent on their December 1924 levels compared with a comparable rise of 204 per cent for industrials.

#### **4. CHARACTERISTICS & STRATEGIES OF AUTOMOBILE ISSUERS**

Not only was there considerable variation over time in the number and value of securities issues by automobile companies but the characteristics and strategies of automobile issuers also changed. Early issuance activity was dominated by transactions to facilitate a consolidation of the industry and to finance the working capital needs of the combinations that emerged in the process. Consolidation continued to stimulate enthusiasm in the motor stock boom of 1915-1916 but, for the car makers at least, it turned out to be cheap talk. The securities issues that actually materialized were driven by the reorganization and refinancing of medium-sized car producers as well as efforts to fund a small number of new entrants to the industry.

In the postwar boom an even larger number of entrants received funds from the securities markets. However, the record-breaking amounts of money raised by automobile companies at this time were dominated by huge issues undertaken by the leading companies in the industry. In the boom some of them raised growth finance but then, in a dramatic turn of events, they scrambled to fund the working capital they needed to stay afloat.

As the 1920s unfolded, the funding of working capital requirements continued to be an important motivation for securities issues but these issues became fewer and fewer in number. However, the waning trend in securities issues was interrupted, on occasion in spectacular fashion, by a number of huge transactions. These issues were designed, in some cases, to transfer ownership from founders and their families to portfolio investors and, in other cases, to facilitate mergers and acquisitions.

##### **4.1 The Early Issuers**

The automobile industry's early interactions with the securities markets were dominated by transactions designed to promote a concentration of the industry. To facilitate consolidation, large amounts of securities were issued in exchange for the securities of target companies but securities issues were also conducted to raise cash. The majority of these funds were secured by the General Motors Company and the United States Motor Company.

Following the panic of 1907, several projects to merge the leading US automobile companies were conceived. At the time, Buick, Ford, Reo and Maxwell-Briscoe were the leading producers and they largely agreed on the challenges confronting the industry:

[t]he demand for this comparatively new method of transportation was growing rapidly, but, although the companies were making good profits, they were in a precarious financial position. Outside financial aid was practically impossible to secure. The industry was considered too risky and unstable to attract investment attention. Its product was considered

a luxury catering to a limited market and liable to disappear with any change in public fancy.<sup>26</sup>

For these industry leaders, as for their counterparts in steel and electrical equipment some years earlier, the solution appeared to be consolidation.<sup>27</sup> There was an initial attempt to bring together the four industry leaders but it fell apart. Reportedly, the insistence on cash as consideration, rather than securities, by Ford and then Olds was the stumbling block.<sup>28</sup> As a consequence, William Crapo Durant of Buick and Benjamin Briscoe of Maxwell-Briscoe looked elsewhere to realize their consolidation plans.

The establishment of the General Motors Company (GM) in 1908 by Durant represented the first consolidation plan to get off the ground. Durant's success as a businessman in the wagon and carriage business in Flint, Michigan led to a request for him to undertake the reorganization of the Buick Motor Company whose financial difficulties posed a threat to several Flint businesses. Durant's reorganization proved highly successful and by 1908, when GM, his new company, took it over, the Buick company was the largest manufacturer in the US automobile industry. GM bought Buick from Durant in exchange for its own newly issued common and preferred shares.<sup>29</sup> Over the next two years, GM acquired more than twenty other companies, producers of automobiles or their parts, for a total value of \$13.2 million. By 1910, GM's output was over 20 per cent in volume and value of the US automobile industry.<sup>30</sup>

Most of Durant's acquisitions were paid for in stock and, as a result, the capital stock of the newly-formed company increased by nearly \$14 million from the \$12.5 million it recorded when it began operations.<sup>31</sup> The one exception was GM's acquisition of Cadillac in which cash was part of the consideration. Durant issued GM stock to raise about \$4.75 million to pay for it.<sup>32</sup> Nevertheless, there seem to have been limits to the amount of cash that the company could raise through securities issues at this time. In October 1909, although Durant had a chance to buy the Ford Motor Company for \$8 million, Briscoe reported that the deal collapsed because he could not raise the funds to pay the consideration of \$2 million in cash and \$6 million in notes.<sup>33</sup>

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<sup>26</sup> "General Motors: The Story of its Growth from Small Beginnings to the Country's Greatest Industrial Unit," *Barron's*, February 20, 1928, p. 3.

<sup>27</sup> Briscoe, "The Inside Story of General Motors," *Detroit Saturday Night*, Jan 15, 22, 29, Feb 5, 1921.

<sup>28</sup> Seltzer, 1928, p. 34, Briscoe, *Detroit Saturday Night*, Jan 15, 22, 29, Feb 5, 1921; Roger Burlingame, *Henry Ford: A Great Life in Brief*, New York, Alfred A. Knopf, 1955, p. 68.

<sup>29</sup> Durant also invested \$500,000 in the new company in return for \$500,000 in preferred stock and a bonus of \$250,000 in common stock (Seltzer, 1928, p. 152).

<sup>30</sup> Seltzer, 1928, p. 37.

<sup>31</sup> The initial \$12.5 million consisted of \$7m preferred stock and \$5.5m common stock. The increase was made up on \$5.9 million in preferred stock and \$7.9 million in common stock (Seltzer, 1928, p. 154). See also FTC, 1939.

<sup>32</sup> Seltzer, 1928, pp. 154-155.

<sup>33</sup> Benjamin Briscoe, January 15, 22, 29 and February 5, 1921 in *Detroit Saturday Night* and W. A. P. John, "That Man Durant," *Motor*, January 1923.

However, GM was soon to have no choice but to raise funds, even on unfavourable terms, to sustain its existing operations. The companies it acquired quickly placed heavy demands on GM's cash reserves. As Seltzer noted, most of them were "small and untried enterprises, badly in need of equipment and of inventories; and many of them were in debt".<sup>34</sup> The most overwhelming problem the new combination faced was in funding its working capital requirements; in the year ended September 1910, the company's investment in inventories increased by an extraordinary amount of more than \$30 million compared to an increase in fixed capital of only \$8 million.<sup>35</sup>

The company's financial plan had made no provision for this heavy need for working capital.<sup>36</sup> Initially, it dealt with its financing needs by relying on its suppliers and commercial banks, racking up heavy short-term obligations in the process. The company's problems were compounded by a decline in the profits of Buick, which were crucial to funding the rest of the combination. The company made plans for a stock increase to fund its working capital requirements but it was pre-empted by an agreement among the company's trade creditors and commercial banks that forced major changes at GM.

The company issued notes to raise temporary funds in the summer of 1910.<sup>37</sup> In November 1910 it concluded an agreement with a syndicate of three banks to raise funds on a more permanent basis to reduce its indebtedness and to provide fresh money for working capital purposes.<sup>38</sup> Lee, Higginson and Company of Boston, J. & W. Seligman and the Central Trust Company of New York underwrote a public issue of \$15 million in 6 per cent notes.<sup>39</sup> The bankers negotiated very favourable terms for themselves and insisted that control of the company pass from Durant to a voting trust. Although Durant was a member of this trust, it was dominated by James Storrow of Lee, Higginson and other bankers for the 5-year period the notes were outstanding. As Seltzer points out: "[t]he stringent terms exacted by the banking syndicate for the underwriting of this note-issue offer abundant testimony of the uncertain, speculative character of the automobile industry."<sup>40</sup> John Rae reports, based on a discussion with James Storrow's secretary at the time, that "[t]he company's prospects were so unfavorably regarded, indeed, that the 6 million dollars worth of General Motor stock had to be distributed as a bonus to the purchasers in order to market the trust debentures".<sup>41</sup>

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<sup>34</sup> Seltzer, 1928, p. 161.

<sup>35</sup> Ibid.

<sup>36</sup> Ibid.

<sup>37</sup> Commercial and Financial Chronicle, vol. 90, p. 719.

<sup>38</sup> Seltzer, 1928, p. 163.

<sup>39</sup> John B. Rae, *American automobile manufacturers: the first forty years*, Philadelphia, Chilton Co., 1959, p. 89.

<sup>40</sup> Seltzer, 1928, p. 163, 164.

<sup>41</sup> Rae, 1959, p. 89.

For the next five years, GM's affairs were dominated by the bankers who exerted strict control over GM's investments and focused primarily on increasing profits. They limited the payment of dividends – GM paid its preferred dividends for the duration of the voting trust but paid nothing on its common stock -- and they insisted on maintaining a substantial buffer for working capital needs. The company's voting trust certificates were listed on the New York Stock Exchange (NYSE) from August 1911 but there were no changes in its capital stock from then until 1915 when the voting trust ended with the company's successful repayment of its notes.

The United States Motor Company represented another ambitious attempt to develop a successful automobile business by consolidating existing players. Like General Motors, it emerged from the failed negotiations to bring together the industry's four major producers. It was brought into existence in 1908 by Durant and Benjamin Briscoe as the International Motor Company but it was halted in its tracks when J. P. Morgan, who had agreed to underwrite a stock issue for the fledgling enterprise, withdrew his support because of concerns about Durant's true motivations.<sup>42</sup> Benjamin Briscoe also dropped out but, inspired by Durant's example with General Motors, he revived the project and renamed the company. He also attracted fresh financial support from powerful Eastern financiers, including those, like Anthony Brady, who were also investors in General Motors.<sup>43</sup>

The United States Motor Company then took over the Maxwell-Briscoe Motor Company and eight other companies engaged in the production of automobiles and their parts and paid for the majority of these purchases with its own stock. However, the company, like GM, confronted a crisis of working capital early in its existence. In June 1911 the company issued debentures to raise \$6 million, which they sold along with a common stock bonus.<sup>44</sup> Its improved financial condition spurred it to greater expansion but just over a year later, in September 1912, the United States Motor Company proved to be a total failure and was placed in receivership. By then, the company's liabilities consisted not only of \$6 million in overdue debentures but also \$4 million in short-term notes and a further \$2.3 million owing to its trade creditors. Receivers put the realizable value of the company's assets at only \$9.3 million rendering the company technically insolvent as well as illiquid.<sup>45</sup>

Prominent financiers, like Eugene Meyer, who were involved in the receivership of the United States Motor Company also participated in its re-birth in a new form: they organized the Maxwell Motor Company which bought the United States Motor's assets

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<sup>42</sup> Rae, 1959, p. 94; *Horseless Age*, vol. 29; no. 25, June 19, 1912, p. 1052.

<sup>43</sup> *Horseless Age*, vol. 25, no. 5, Feb 2, 1910, p. 182.

<sup>44</sup> Seltzer, 1928, p. 38.

<sup>45</sup> *Horseless Age*, vol. 30, no. 12, September 18, 1912, p. 411; *Wall Street Journal*, October 29, 1912, p. 6.

in January 1913.<sup>46</sup> The new company exchanged the outstanding claims on these assets for its own common and preferred stock and, crucially, raised \$3 million in fresh money for working capital so it could operate.<sup>47</sup> It also hired Walter Flanders to replace Briscoe as the head of the company and paid him generously and acquired his company, the Flanders Motors Company, to get him.<sup>48</sup>

Compared to GM and the United States Motor Company, the Studebaker Company was a less ambitious consolidation being formed in February 1911 through a merger of only two companies, the Studebaker Brothers Manufacturing Company, a manufacturer of carriages and wagons that was founded in 1868, and the Everitt-Metzger-Flanders Company, an automobile company established in 1908.<sup>49</sup> Nevertheless, the new company started life with net tangible assets of more than \$15 million making it one of the most important players in the industry at the time. In a pattern that is now familiar, the consolidated business soon found itself pressed for working capital. A few months after its formation, therefore, it sold seven per cent preferred stock with a par value of \$13.5 million from which it realized \$8.3 million in cash which it used for working capital purposes.<sup>50</sup>

The banking syndicate who sold its stock consisted of Goldman Sachs and Lehman Brothers, both of New York, and Kleinwort Sons & Company of London. Henry Goldman, Arthur Lehman and H. H. Lehman became members of its board of directors. *The New York Times* noted that “the new corporation will remain in the hands of the Studebaker people through the ownership of the common stock, though it is expected that the bankers will have a strong voice in the management”.<sup>51</sup> Despite the cash infusion, the company continued to depend on substantial bank loans to fund its heavy working capital requirements. By the end of its first year of operation, its debts had mounted to \$10.1 million.<sup>52</sup> In February, 1912, it entered the securities markets again to raise \$8 million to refinance its bank loans through the sale of five per cent ten-year serial gold notes.<sup>53</sup>

The final consolidation that is worthy of note is the Willys-Overland Company even if the full scale of its ambitions only became clear somewhat later than the others. It was

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<sup>46</sup> It was incorporated in December 1912 as the Standard Motor Company but changed its name in January 1913 (*Automobile Trade Journal*, vol. 17, no. 6, December 1912, p. 80; *Horseless Age*, vol. 31, no. 3, January 15, 1913, p. 112).

<sup>47</sup> Seltzer, 1928, p. 38.

<sup>48</sup> Rae, 1959, p. 96.

<sup>49</sup> The Studebaker Manufacturing Company had acquired one third of the stock of the EMF Company in 1909 and the remainder in 1910 (*New York Times*, March 1, 1911, p. 13; *Horseless Age*, vol. 25, no. 11, March 16, 1910, p. 412).

<sup>50</sup> Albert R. Erskine, *History of the Studebaker Corporation*, Chicago, The Studebaker Corporation, 1924, p. 37.

<sup>51</sup> “Bankers in Studebaker Company,” *New York Times*, February 2, 1911, p. 13.

<sup>52</sup> Moody’s, 1916, p. 1132.

<sup>53</sup> Seltzer, 1928, p. 236.

founded in 1908 by John Willys as the Toledo Motor Car Company. It was the successor of the Pope Motor Car Company which was formed in 1903 but went into receivership in 1908. In July 1910, the Toledo Motor Car Company increased its capital stock from \$2 million to \$6 million to absorb the Overland Automobile Company of Indianapolis which was established in 1906.<sup>54</sup> In January 1912, Willys reportedly still held 100 per cent of the company's stock.<sup>55</sup>

In November 1912, the company was merged with several other automobile and motor truck companies and re-incorporated under the same name. In the same month, it sold \$5 million of its cumulative preferred stock for unspecified purposes, to facilitate the consolidation,<sup>56</sup> and its stock began trading on the New York Curb. By this time, Willys-Overland was already a substantial company with annual sales running at \$23 million and total assets amounting to \$24 million.<sup>57</sup>

Besides the securities issues of these consolidations, medium-sized companies in the industry were responsible for several transactions to raise funds from the securities markets in the early teens. Packard Motor, Mitchell Lewis and Peerless Motor each issued securities to raise \$5 million, \$4.3 million and \$3.75 million respectively. Chalmers Motor also sold stock to generate proceeds of \$2 million. To a striking degree, the motivations for these issues were similar to those for the securities issues undertaken by the consolidations. Specifically, their purpose was the repayment of bank debt accumulated to meet working capital requirements or the generation of new monies to fund these requirements.<sup>58</sup>

My research also uncovered eight securities issues conducted by smaller companies.<sup>59</sup> Very little information was available on the purposes of their issues. Only for Pope Manufacturing could I determine what happened and, here again, we observe a pattern in which securities issues were used to raise working capital. The company failed in any case but it was not alone in its demise; as one observer of automobile failures at the time noted: "One of the peculiar features of the situation is that the failures have not been due to lack of business, but to a scarcity of working cash".<sup>60</sup>

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<sup>54</sup> *Wall Street Journal*, July 26, 1910.

<sup>55</sup> *New York Times*, January 14, 1912, p. XX2

<sup>56</sup> *New York Times*, November 24, 1912, p. XX7

<sup>57</sup> *Wall Street Journal*, November 26, 1912, p. 5.

<sup>58</sup> Add sources.

<sup>59</sup> Regal, 1 issue, proceeds of \$1.6m; Pope Manufacturing, 1 issue, \$1m; Canada Cycle & Motor, 1 issue, \$0.8m; White Co, 1 issue, \$0.5m; Knox Automobile, 1 issue, \$0.5m; Whipple Car, 1 issue, \$0.28; Hupp Motor, 1 issue, \$0.25m; Stearns (F. B.), 1 issue \$0.2m.

<sup>60</sup> "Automobile Failures have been Plentiful this Fall," *Wall Street Journal*, October 7, 1912, p. 8."

## 4.2 The Inaugural Motor Stock Boom, 1915-1916

During the industry's first boom in stock prices, the theme of consolidation continued to attract great interest in the automobile business. An ambitious plan, masterminded by Willy Durant, led to a major consolidation of the automobile parts and accessory business with the creation of United Motors in May 1916. Two months later, at the height of the motor stock boom, Durant sought to repeat the pattern in the automobile industry, this time in alliance with John Willys.

They planned to bring together some of the leading automobile manufacturers in the country, notably the Willys-Overland Company, the Hudson Motor Company and the Chalmers Motor Company, in a giant company. These car companies were to be merged with a number of automobile parts makers, including the Auto-Lite Corporation (in which Willys had an interest) and the United Motors Company (Durant's pet project), and, possibly, with a tire company as well.<sup>61</sup> The consolidation, which was to be run by John Willys, would result in the second largest car company in the United States with a capitalization to rival that of the United States Steel Corporation. Wall Street reportedly "caught its breath at the size of the proposed merger which may mean an offering of \$200,000,000 in stock".<sup>62</sup> However, in the end, the deal fell apart, apparently on the insistence by John Willys that he receive mostly cash for his holdings of Willys-Overland and Auto-Lite stock. This demand was at odds with the pattern in previous Durant consolidations in which the promoters took stock in the consolidation and kept it off the market for some time to support the price of the stock.<sup>63</sup>

Durant found other ways to stay busy. Shortly after his leadership of GM was usurped, he founded the Chevrolet Motor Company in 1911. It manufactured and sold a cheap car, to compete with Ford, and Durant built it up through acquisition. In 1915 Durant and a number of new associates, including Pierre du Pont of E. I. Du Pont de Nemours & Company, began buying GM stock with a view to regaining control of company when its voting trust expired. Durant planned to use Chevrolet to help him in this effort and in late 1915 he reorganised it to that end. In the process, he increased its capitalisation to \$20 million of which \$13.2 million was issued in exchange for the securities of the two existing components of the Chevrolet operations and a number of other enterprises. The remaining \$6.8 million was sold through a private placement to raise cash to fuel the expansion of Chevrolet's output. Shortly afterwards, Durant offered to acquire GM securities by exchanging them for Chevrolet stock and, despite resistance from the incumbent management of GM and some of its shareholders, he was successful in his effort to take over his former company.<sup>64</sup>

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<sup>61</sup> *Los Angeles Times*, June 6, 1916.

<sup>62</sup> *Los Angeles Times*, June 3, 1916, p. 16.

<sup>63</sup> *Wall Street Journal*, June 17, 1916, p. 8.

<sup>64</sup> Seltzer, 1928, pp. 174-6.

John Willys had grand ambitions of his own and he turned to the securities markets for funds to power the expansion of his company. In November 1915, the company retired its original preferred stock, of which \$4.5 million was outstanding, using part of the proceeds of a new issue of convertible 7 per cent preferred stock which raised \$15 million. Less than a year later, the company raised a further \$15 million, this time through the sale of common stock.<sup>65</sup> These issues, together with the company's retained earnings, facilitated a breathtaking expansion in the company's size. Its total assets increased by 138 per cent from \$43 million in 1914 to \$103 million in 1916 with most of the expansion, 60 per cent of the total, represented by an accumulation of larger inventories. In the process, the company increased its output of cars from 48,000 in 1914 to 142,441 in 1916, making it the second largest producer in the United States, behind Ford but ahead of GM.<sup>66</sup>

Among the leaders of the automobile industry, Packard was the only other issuer of securities for cash during the motor stock boom. Still struggling to get working capital under control, it raised \$3 million through a preferred stock issue to repay bank debt it had accumulated to finance its growing inventories. A further issue of \$2 million in debenture notes followed in November 1916 largely for the same purpose.<sup>67</sup>

Notwithstanding these examples, most of the securities issues by automobile companies during the boom were undertaken by medium and small companies. For medium-sized companies,<sup>68</sup> securities issues were tied up with the refunding and/ or reorganization of existing operations although the specific purposes of these transactions differed from case to case. For Peerless, Premier and Cole and National, for example, the primary intent was to carry out a merger. In other cases, such as Mitchell, Chalmers, National and Enger, the goal was to reform the financial structure or, as for Nash<sup>69</sup> and Stutz, to effect a change in management. In many of these cases, companies also took the opportunity to raise some fresh money at the same time. To the extent that information is available, the purpose of these issues seems to have varied from case to case with Hupp, Mitchell and Chalmers raising working capital and Stutz, Haynes and National generating funds for fixed capital investment. There was also a group of new entrants to the industry which, if we include Chevrolet, amounted to seven in total,<sup>70</sup> which raised funds from the securities markets during the boom. Established five years or fewer before they completed these issues, these companies, with the exception of Chevrolet, raised relatively small amounts of money, less than \$1 million in most cases.

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<sup>65</sup> *Wall Street Journal*, August 23, 1916, p. 1.

<sup>66</sup> Moody's Industrials, 1916, p. 1171; 1920, p. 932.

<sup>67</sup> "Packard Motor Sells Stock," *Wall Street Journal*, Moody's, 1920, pp. 269-270.

<sup>68</sup> These companies were significant entities with sales of \$10 million or more.

<sup>69</sup> Charles Nash was the man that Willy Durant replaced as head of GM in 1916. When Nash left the company, he acquired the Jeffery Motor company, with the support of Lee, Higginson and eventually turned it into the highly successful Nash Motor Company.

<sup>70</sup> Sun, Allen, Grant, Harroun, Elgin, Emerson.

### 4.3 From Post-War Boom to Bust, 1919-1921

After the war automobile companies raised very large amounts of money through securities issues. The most important factor in accounting for this development was a number of huge financing operations undertaken by some of the leading players in the industry. GM and Willys-Overland were particularly important issuers, together accounting for 72 per cent of the total proceeds raised by automobile companies in 1919 and 1920.<sup>71</sup> Initially, their prominence as issuers reflected their reliance on the securities markets to fund huge investments made in pursuit of aggressive expansion strategies. However, the situation changed at a dizzying pace with these same companies returning to the securities markets to make panicked appeals for funds for working capital that they required simply to stay afloat.

Soon after Durant's return to the helm of GM, he once again propelled the company through several years of rapid expansion. A number of acquisitions ensued, of which the most important were the purchases of Chevrolet Motor Company and United Motors Corporation in 1918, both companies in which Durant already had significant interests.<sup>72</sup> These acquisitions were concluded through the issue of GM stock -- \$28 million for Chevrolet and \$40 million for United Motors - resulting in a 70 per cent increase in GM's stock outstanding at the end of 1917.<sup>73</sup> Shortly after these deals were completed, GM announced that it would also issue common stock to raise cash of more than \$28 million with the funds reportedly earmarked for working capital purposes.

The *Wall Street Journal* observed that the "[a]nnouncement of the need at this time for additional cash probably caused surprise in some quarters," noting that the company's "plant expansion program is modest".<sup>74</sup> However, the newspaper explained, that "in taking over Chevrolet and United Motors, the General Motors Corporation secured but little cash. In fact, so far as the Chevrolet company itself was concerned, no cash at all was received. This meant that if the same expansion in selling methods were to be followed as were pursued by other companies controlled by General Motors additional working capital would be necessary."<sup>75</sup> This stock issue was sold privately to the E. I. du Pont Company and, as a result, the chemical company became a major shareholder in GM with 27.6 per cent of its stock.<sup>76</sup>

In 1919, GM announced ambitious plans to increase its investment in fixed capital by expending more than \$37 million on plant construction and expansion. Its growth

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<sup>71</sup> GM raised a total of \$228 million and Willys-Overland raised \$41 million.

<sup>72</sup> Seltzer, 1928, p. 186. And \$11m in common stock? Price reduced to 30 and 10 by using stocks of UM held by Chevrolet?

<sup>73</sup> Moody's, 1918.

<sup>74</sup> *Wall Street Journal*, January 14, 1919, p. 3.

<sup>75</sup> *Wall Street Journal*, January 4, 1919, p. 8. In contrast to the company's working capital requirements,

<sup>76</sup> Since this issue was neither a public issue nor a private placement with financial institutions, it is not included in the data underlying Figure 1.

strategy also necessitated additional funds for working capital purposes with inventories alone increasing by nearly \$40 million in 1919. Although the company reported hugely increased profits in 1919,<sup>77</sup> they were not sufficient to fund GM's expansion. Notwithstanding reports that "there has been the usual wagging of banking heads over the steady and daring increases in General Motors [sic] activities, operating and financial",<sup>78</sup> in May 1919, GM announced the issue of \$50 million in 6 per cent debenture stock. However, unfavourable market conditions led to substantial discounting of the offering to the underwriters and the company decided to withdraw \$20 million of the total issue.<sup>79</sup>

Undeterred by this setback, GM announced another major acquisition in October 1919 when it reported that it would buy 60 per cent of Fisher Body, America's largest producer of automobile bodies at the time, for nearly \$28 million in cash and notes.<sup>80</sup> It also accumulated large investments in unconsolidated companies.<sup>81</sup> The company financed the shortfall in its finances by accumulating short-term debt to the banks which rose to \$22 million by the end of 1919 but it needed more to fund its expansion plans. At the beginning of 1920 the company returned to the securities markets in an effort to raise a huge amount of \$85 million in new money. This time, to increase the appeal of its securities, GM authorised the issue of a new debenture stock with the higher return of 7 per cent, compared to the 6 per cent it had offered in its earlier attempted issue. Nevertheless, the new issue was an outright flop with the company raising only \$7 million in cash (Seltzer, 1928, p. 195).

The company plunged into a veritable financing crisis. It was exacerbated by the continued growth in its inventories; in the four months to April 1920, they had risen by nearly \$40 million.<sup>82</sup> Desperate for funds, the company turned to J. P. Morgan for help and, in June 1920, together with the Explosives Trades, Ltd, a British and Canadian company with connections to Du Pont, the bank organized a deal that raised \$64 million for GM through the sale of common stock.<sup>83</sup> In a letter to GM shareholders, President Durant declared that the proceeds of the new issue would provide \$64 million in cash for the working capital requirements of the Corporation.<sup>84</sup>

J. P. Morgan did very well from the transaction, negotiating very lucrative terms for itself, and appointed six new representatives, including E. R. Stettinius from the bank, to

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<sup>77</sup> To \$60m, or 11.8 per cent of sales, compared with \$14.8m, 5.5 per cent of sales, in 1918

<sup>78</sup> "General Motors Plans Output of 400,000 Cars," *Wall Street Journal*, February 7, 1919, p. 11.

<sup>79</sup> Seltzer, 1928, p. 193.

<sup>80</sup> Seltzer, 1928, p. 191.

<sup>81</sup> *Barron's*, February 27, 1928, p. 8.

<sup>82</sup> General Motors, *Annual Report*, 1922, p. 9.

<sup>83</sup> The former purchased \$36 million of the stock and J. P. Morgan underwrote the remainder of the issue but also reportedly acquired a substantial interest in the company on its own behalf (*Wall Street Journal*, "General Motors Closed 1920 in Good Condition," January 14, 1921, p. 1).

<sup>84</sup> *Commercial and Financial Chronicle*, vol. 110, p. 2390; vol. 111, p. 299.

GM's board.<sup>85</sup> However, the deal was worth it for GM and in ways that it had not expected when it concluded it. Only a few weeks later, in August 1920, the automobile industry ran into an unexpected and serious slump which generated further financing needs for GM. Its support from J. P. Morgan facilitated its access to as much as \$80 million in short-term debt and allowed it to weather the crisis (Seltzer, 1928, p. 202). GM recorded a large loss in 1921, largely because of the cost of huge writeoffs of its inventories and the cancellation of contracts.<sup>86</sup> However, by the middle of 1922, the company had managed to pay off all of its bank debt and to restore its profitability (GM, Annual Report, 1922).

Durant was not as lucky as the company he had founded. In a hopeless attempt to maintain the price of GM stock during the company's crisis he had bought up as many shares as he could afford and borrowed to buy others that he could not. His attempts seem to have been motivated by his desire to protect the value of the investments made by stockholders who had been loyal to him. By the end of 1920, he could no longer sustain the effort and financial difficulties forced him to sell his stock in GM to Du Pont.<sup>87</sup> In November 1920, he resigned as president of the company and was replaced by Pierre Du Pont.

John Willys had better luck than Durant in retaining control of the company he had built but, like his counterpart and in remarkably similar style, his aggressive strategy for expansion also brought his company to the brink of disaster. Willys diversified his activities during the war, issuing preferred stock to purchase a controlling interest in the country's leading aeroplane manufacturer, Curtiss Aeroplane and Motor Corp, in 1917, and Moline Plow, a manufacturer of agricultural implements, in 1918.<sup>88</sup> The company's car business, having expanded at breakneck speed until 1916, slowed down in 1917, and especially in 1918, with the entry of the US into the war. Nevertheless, inventories remained high; they were \$38.7 million in 1919, when output was only 80,000 cars, compared with \$38.6 million in 1916 when the company had produced 140,000 cars.<sup>89</sup> In both years, investment in inventories was higher than the book value of the company's property, plant and equipment.<sup>90</sup>

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<sup>85</sup> Seltzer, 1928, pp. 195-6.

<sup>86</sup> Moody's Industrial, 1925, p. 1112. The company wrote off \$16.6 million in inventories in 1921 on top of another writeoff of \$18.5 million the previous year.

<sup>87</sup> *Automotive Industries*, vol. 43, no. 22, November 25, 1920, p. 1097; *Commercial and Financial Chronicle*, vol. 111, p. 2233, p. 2143. The transaction involved the establishment of a new company, the Du Pont Securities Corporation, by Pierre du Pont, and its issue of short-term collateral trust bonds to fund the purchase (E. I. Du Pont de Nemours, *Annual Report*, 1920, p. X?).

<sup>88</sup> "\$3,475,000 was issued privately in August, 1917, in connection with the acquisition of the Curtiss Aeroplane stock; an additional \$6,376,000 was reported involved in the acquisition of a majority of Moline Plow Co. stock (Moody's, 1920, p. 932). See also *Automotive Industries*, vol. 44, no. 6, February 1921, p. 288; vol. 73, no. 9, August 31, 1935, p. 251, 272.

<sup>89</sup> The company carried Curtiss Aeroplane and Motor Corp as well as Moline Plow on its balance sheet as unconsolidated investments. Their inventories, therefore, are not included in these figures.

<sup>90</sup> Moody's Industrials, 1920, pp. 931-2.

The company ran into major funding difficulties after a long strike in 1919 reduced sales and profits. To fund its high inventories, even as its profits fell, the company accumulated bank debt, with notes payable amounting to more than \$30 million by the end of 1919.<sup>91</sup> In February 1920, John Willys called a special meeting of the company's shareholders to vote on an increase in capitalization. He noted that there was no plan to make additional plant investments<sup>92</sup> but that the company had to be "fully prepared to raise additional working capital" to expand production. A few months later, the company announced a stock issue to raise \$20 million which was used to reduce the company's floating debt.<sup>93</sup>

Ironically, this issue exacerbated the financial problems of another of Willys' ventures, the Willys Corporation, which needed capital to maintain its share of Willys-Overland stock. It was the holding company of Willys-Overland; at its formation in July 1917, Willys transferred his roughly one-third share of Willys Overland voting stock, as well as substantial stockholdings that he held in other companies, to the new entity. When the war ended, Willys Corporation had embarked on its own programme of expansion. It absorbed the businesses of two automobile parts companies, Auto-Lite Corporation which made lighting systems and New Process Gear Corporation which manufactured gears and transmissions. It also purchased the former Duesenberg Motors plant in New Jersey which was to be greatly expanded to house an enormous assembly plant for the production of a new light car.<sup>94</sup>

These ambitious plans for expansion needed to be funded and, to that end, in 1919, Willys Corporation completed a couple of large stock issues. However, the company did not even manage to complete its new plant, never mind begin production, before the slump in the automobile industry hit in late 1920. Its need for further capital to participate in Willys-Overland's stock issue made a bad situation even worse. By November 1920 it was clear that something was seriously amiss when Willys announced that it would pay the last dividend of the year on its preferred stock in scrip. As the *Wall Street Journal* reported: "This action was deemed advisable owing to the acute stringency in the money market, the necessity of carrying inventories and in order to conserve cash assets and credit resources".<sup>95</sup> By then the company had racked up more than \$11 million in bank loans, it needed more money to complete its automobile assembly plant and it also required working capital if it was to actually produce automobiles.<sup>96</sup>

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<sup>91</sup> Merchandise credit was much lower with accounts payable amounting to only \$9.2 million at the time. (Moody's Industrials, 1923, p. 2243)

<sup>92</sup> Although the book value of PPE rose that year, from \$37.3 million to \$50.6 million because of a revaluation of the company's properties (Moody's Industrials, 1923, p. 2243).

<sup>93</sup> *Wall Street Journal*, July 2, 1920, p. 2.

<sup>94</sup> *Motor Age*, vol. 36, no. 7, August 14, 1919, p. 17.

<sup>95</sup> *Wall Street Journal*, November 27, 1920, p. 7.

<sup>96</sup> *Barron's*, December 5, 1921, p. 10.

By then, with Willys-Overland and the Willys Corporation indebted to banks to the order of nearly \$50 million, the bankers stepped in. They put together reorganization committees to handle the affairs of the Willys car companies and brought in Walter Chrysler to help them staunch their bleeding. The bankers wanted to deal with the affairs of the two companies in an integrated way but John Willys refused since he knew the bankers would force him out that way.<sup>97</sup> In the end, Willys Corporation was placed in receivership in late 1921 and its affairs were wound up.<sup>98</sup> Willys-Overland survived but only after serious measures had been taken to slash inventories from \$35.3 million in 1920 to \$17.7 million in 1921. In part, this was accomplished through writedowns, which were also undertaken on the fixed asset account and to reduce goodwill.<sup>99</sup> The result was a collapse in earnings with even larger deficits recorded in 1921 and 1922 than in 1920.<sup>100</sup>

Further financing was also needed to keep Willys-Overland going. The company's bank obligations fell due in the middle of 1922. Willys himself went out West to drum up business and instructed four of his allies to fight for time from the bankers. As he described it, "They finally gave us eighteen months. We paid 7 ½ per cent in about a 3 per cent market. They took our notes at ninety-seven and a half or thereabouts, in the manner of such financial doctors when they come to help the sick". The company managed to pay off these notes in only fifteen months and with money to spare from the proceeds of the sale of some of its assets as well as surplus earnings.<sup>101</sup> Nevertheless, it returned to the financial markets in 1923, to raise a further \$10 million. The transaction was described by John Willys, who by then had resumed control of the company, as necessary for "increasing the company's working capital, consistent with the largely expanded volume of the business".<sup>102</sup> Inventories, by then, were back up to \$33.4 million although sales had also increased in that year to 196,000 cars.<sup>103</sup>

The financing problems that General Motors and Willys encountered were particularly dramatic given the scale of the companies involved and the flamboyance of their leaders. However, other prominent automobile companies, including Studebaker, Maxwell and Packard, as well as smaller players like Hupp and Stutz, also turned to the securities markets in the early postwar years to fund their working capital requirements.<sup>104</sup> Studebaker's problems in this regard began with America's entry into

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<sup>97</sup> Boyden Sparks, "Down and Up," *Saturday Evening Post*, March 25, 1933, vol. 205, no. 39, p. 73.

<sup>98</sup> *Automotive Industries*, vol 45, no. 22, December 1, 1921, p. 1094.

<sup>99</sup> Moody's, 1923, p. 2243; "Willys-Overland," *Barron's*, April 2, 1923, p. 11.

<sup>100</sup> Moody's Industrials, 1923, p. 2243.

<sup>101</sup> Boyden Sparks, "Down and Up," *Saturday Evening Post*, March 25, 1933, vol. 205, no. 39, p. 73.

<sup>102</sup> *New York Times*, September 11, 1923, p. 22.

<sup>103</sup> Moody's Industrials, 1925, p. 2169.

<sup>104</sup> Hudson Motor Car was also reorganised in 1921 but primarily to effect the merger of Hudson and Essex. A new company was incorporated and most of its stock was issued in exchange for the securities of the predecessor company. However, one third of the stock was sold on the public markets in the first public issue of Hudson stock (Long, *Chapin*, pp. 92-93).

the war. As the *Wall Street Journal* put it, the drop in automobile sales that ensued “necessitated large borrowing from the banks to carry investments in inventories” and induced the company to slash its dividend”.<sup>105</sup> On the financing front, Studebaker initially issued \$15 million in notes to pay down this debt and in November 1919 it issued \$15 million in stock to refinance these obligations.<sup>106</sup>

Warning signs at Maxwell appeared in the middle of 1917 when it passed some of its dividends as a precautionary measure to conserve cash. Initially, press coverage suggested that its position was not as serious as that of Studebaker, since it had neither built up an inventory of unsold cars nor accumulated substantial bank debt.<sup>107</sup> However, Maxwell had substantial inventories of raw materials and parts, not least to facilitate the large amount of work it took on for the US government during the war. As hostilities drew to a close it became clear that the company was going to need time to draw its inventories down in the return to normal business conditions.<sup>108</sup>

It continued to pass its dividends to conserve cash but its financing requirements increased more rapidly than its internal capacity to meet them, largely because its inventories continued to rise. By June 1919, they reached \$26.3 million compared with \$16.4 million a year earlier. It was clear that the company would have to raise additional money – estimates at the time suggested an amount of about \$10 million -- to cover its investment in working capital.<sup>109</sup>

The company’s complicated and lengthy negotiations to merge with Chalmers, whose plants it had been operating under lease since 1917, slowed down its plans to raise finance from the securities markets so it turned to bank finance to tide it over. By late 1920, when the merger plans were eventually finalized and approved by Maxwell’s shareholders, the company had accumulated more bank debt than originally envisaged.<sup>110</sup> By then, the merger was spoken of as a financial reorganization with “the principal need [being] for sufficient cash to place its large and unbalanced inventory in better condition”.<sup>111</sup> The reorganization plan provided for the sale of Maxwell-Chalmers stock to raise \$15 million which was seen as sufficient to place the company on a sound financial footing.<sup>112</sup>

There was one other notable appearance in the financial markets at this time by a leader of the industry. The Ford Motor Company, in contrast to GM, Willys, Packard and Studebaker, had never turned to the securities markets for money to finance his

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<sup>105</sup> *Wall Street Journal*, January 12, 1918, p. 1.

<sup>106</sup> *Ibid.*

<sup>107</sup> *Wall Street Journal*, July 20, 1917, p. 1.

<sup>108</sup> *Wall Street Journal*, November 21, 1918, p. 17; November 23, 1918, p. 9.

<sup>109</sup> See, for example, *New York Times*, June 6, 1919, p. 18

<sup>110</sup> *New York Times*, August 11, 1920, p. 23.

<sup>111</sup> *Wall Street Journal*, September 1, 1920, p. 9.

<sup>112</sup> *Wall Street Journal*, September 25, 1920, p. 9.

business because it had never needed it. Commenting on the company's financial situation after only three or four years in operation, Henry Ford described an enviable situation: "We had plenty of money. Since the first year we have practically always had plenty of money. We sold for cash, we did not borrow money, and we sold directly to the purchaser".<sup>113</sup>

Ford relied exclusively on retained earnings to fund the rapid expansion of his business and the company remained entirely autonomous of the securities markets for most of its early life. Ironically, the concerns of some of the company's minority stockholders that Ford was building the company at their expense ultimately induced him to use the financial markets to buy them out. When Ford announced the enormous River Rouge expansion in 1916 and declared that the company would fund it entirely from retentions, John F. and Horace E. Dodge, who owned 10 per cent of Ford Motor Company stock, took the company to court to compel it to restrain its expansion and distribute the accumulated earnings to them and other stockholders. The case dragged on for several years until, in 1919, the Supreme Court mandated the Ford Motor Company to pay a special dividend of \$19 million, plus 5 per cent interest from the decision date, to its shareholders.<sup>114</sup>

Since Ford himself owned most of the shares, the majority of that money was destined for his pockets. As Sorensen, a former executive at the company, noted: "Financially, this was not much of a setback, if any. The Dodges owned only 100 of the 1,000 shares of Ford stock; hence they could be paid \$1,900,000. Henry Ford owned 585 shares; he would get \$11,000,000 of the enforced dividend, and that covered the initial development at the Rouge authorized by the company directors".<sup>115</sup> Nevertheless, the court's ruling that Ford's withholding of dividends from shareholders had been unlawful prompted him to get rid of what he regarded as the nuisance of his minority shareholders.<sup>116</sup>

He decided to take the company private and, to do that, he temporarily turned to outside investors to raise the more than \$100 million necessary to fund a buyout. Although minority shareholders initially expressed reluctance to sell, Ford "encouraged" them to take the plunge by resigning as president of the company and spreading a rumour that Henry Ford & Co would launch a rival to the Model T. In the end they sold out for a consideration of \$105 million and the Ford family secured complete control of the Ford Motor Company.<sup>117</sup>

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<sup>113</sup> Quoted in Seltzer, 1928, p. 93

<sup>114</sup> Charles E. Sorensen, with Samuel T. Williamson, *My Forty Years with Ford*, New York: W. W. Norton & Co, 1956, p. 165.

<sup>115</sup> *Ibid.*

<sup>116</sup> *Ibid.*

<sup>117</sup> *Ibid.*, p. 166.

To fund his purchase, Henry Ford borrowed \$75 million in July 1919 through the issue of short-term notes although he apparently used only \$60 million of it. In 1920, there were rumours that he would not be able to pay the money back when it fell due, largely because of the same problem of mounting inventories that bedevilled his rivals. Ford's inventories had risen from \$46 million in 1918 to \$77 million in 1919 and then to a further \$97 million in 1920. The treasurer of the Ford Motor Company, Klingensmith, entered negotiations with some New York bankers to arrange for a line of credit for the company. Henry Ford, however, was wholly against any such arrangement. Sorensen recounted that, as an alternative, he "asked Mr. Ford why we did not slow down and liquidate the large inventory we had if the company really needed money. I told him that I felt we could even squeeze out enough to pay off the loans we had at the very moment. Certainly we did not need the very large inventory we had; it was wise to get that down anyway".<sup>118</sup>

Like GM, Willys-Overland, Maxwell and others, Ford faced the challenge of financing these mounting inventories. Ford's solution was novel in that it did not require recourse to bankers or the securities markets. The company stopped buying materials and parts but continued producing at its normal rate thus running down accumulated inventories. As soon as the cars were finished, they were shipped to dealers who had the option of paying for them in cash or losing Ford's business. As Sorensen put it: "We got a clean slate on inventory, and as a result we had more than enough money to wipe out our loans. Klingensmith resigned in 1921, and we never had more squeezes on finance".<sup>119</sup> Of course, parts makers and dealers were less jubilant since it was they who bore the brunt of the financial rescue of the Ford Motor Company.<sup>120</sup>

Besides these securities issues, which were undertaken by the leaders of the industry, a significant number of small automobile companies, with assets of less than \$5 million each, turned to the securities markets at this time. Twelve of them were well-established, having been around for close to or more than a decade, or been formed through the reorganization of companies that had persisted for that long.<sup>121</sup> A further eighteen of them were new companies, established five or fewer years prior to their issues.<sup>122</sup> There were also a small number of issues by the newly-established American subsidiaries of British car companies.<sup>123</sup>

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<sup>118</sup> *Idem.*, p. 168.

<sup>119</sup> *Idem.*, p. 169. The notes were renewable three times and \$50 million was renewed in October 1919, \$42.5 million was renewed in January 1920 and \$35 million was renewed in April, 1920. This balance was paid off in July 1920 (*Commercial and Financial Chronicle*, vol. 109, p. 275).

<sup>120</sup> Rae, 1959, p. 136.

<sup>121</sup> Cole Motor, Earl Motors, Haynes Automobile, Jackson Motors, Mercer Motors, Paige-Detroit Motor, National Motor Car & Vehicle, Nordyke & Marmon, Stevens Duryea, Velie Motors.

<sup>122</sup> Adria Motor, Columbia Motors, Commonwealth Motors, Daniels Motor (2 issues), Dort Motor (2 issues), Durant Motor & associated companies (3 issues), Gardner Motor, Garland Automobile (?), Grant Motor, Herschell-Spillman Motor (new?), Lexington Motor, Lincoln Motor (2 issues), Maibohm Motors, Noma Motor, Revere Motor, Richelieu Motor, Summit Auto (new?).

<sup>123</sup> Hillman Motor (?) & Rolls Royce of America (3 issues).

#### 4.4 Waning Activity with Spectacular Exceptions, 1922-1930

Once the crisis was over, securities issues by automobile companies for cash, both the numbers undertaken and the proceeds they raised, declined. The largest players in the industry raised very little cash in the securities markets for the rest of the decade. The major exceptions to this rule were a 1927 issue by GM and a 1926 issue by Willys Overland. Most of the automobile companies that raised new funds through securities issues were medium-sized players -- Auburn Automobile, Hupp Motor, Marmon Motor, Paige-Detroit Motor Car, Pierce-Arrow Motor Car and Stutz Motor Car – as well as a few very small companies like Daniels Motor and Kissel Motor Car. In all but one case,<sup>124</sup> the purpose of these issues was to raise funds to repay current debt or to raise new funds for working capital.

The exception to this pattern was Durant Motors, another venture in the car industry by the irrepressible Durant. It was formed in 1921, shortly after Durant was bought out of GM, and the company completed several securities issues during the 1920s. Durant used these monies to fund his characteristic strategy of expansion through acquisition. He bought up several existing automobile plants, including the Willys Corporation's Duesenberg plant, as well the Locomobile Company. Durant was rumoured to have more ambitious plans for consolidation of the industry, with talk of a huge merger that would draw in Hupp, Chandler, Peerless, Moon, Gardner, and Jordan to Durant's circle, but it never transpired. Moreover, Durant Motors itself, which as Rae put it "was predominantly an assortment of makeshift and castoffs" ran into serious trouble in the late 1920s, even before the stock market crash, and went bankrupt in 1933.<sup>125</sup>

There were many other rumours of consolidations in the industry during the 1920s. Some of these were baseless such as the news in 1928 that Hudson, Nash and Packard would merge.<sup>126</sup> Others, like the report that Winton Motor Car, Haynes Automobile and the Dorris Motor Car Company would merge in 1923<sup>127</sup> or that Studebaker would buy Maxwell in 1923<sup>128</sup> were well-founded but eventually did not happen. But there were a number of deals that were successful including the acquisition of F. B. Stearns Motor Car by Willys-Overland in 1925, the merger of Chandler and Cleveland in 1926, and three large transactions in 1928: the acquisition of Chandler-Cleveland by Hupp,<sup>129</sup> of Pierce

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<sup>124</sup> Auburn Automobile but this needs to be confirmed. *Automotive Industries*, vol. 58, no. 8, February 28, 1928, p. 326 is ambiguous on the purpose of the two issues conducted in 1925 and, in fact, the balance sheet shows the only corresponding increase in assets to be in inventories.

<sup>125</sup> Rae, 1959, pp. 166-168.

<sup>126</sup> Rae, 1959, p. 175.

<sup>127</sup> Rae, 1959, p. 184.

<sup>128</sup> "Big Auto Makers Likely to Merge," *New York Times*, November 25, 1923, p. E11; "Studebaker Negotiates for Maxwell Control," *Wall Street Journal*, November 26, 1923, p. 1.

<sup>129</sup> *Automotive Industries*, vol. 59, no. 22, December 1, 1928, p. 807; no. 25, December 22, 1928, pp. 898-899.

Arrow by Studebaker, and, largest of all, the purchase of Dodge Brothers by Chrysler Corporation.

The latter deal was particularly important because it created the number three player in the industry after Ford and GM. The Chrysler Corporation was established in 1925 by Walter Chrysler to take over the business and assets of the Maxwell Motor Corporation,<sup>130</sup> which he had been recruited to reorganize in 1920. Chrysler discontinued the Maxwell car shortly after he took over the company, placing his bets on the new Chrysler car. He also began scouting around for ways to reduce his dependence on outside suppliers for certain parts and found his opportunity in the acquisition of Dodge Brothers.<sup>131</sup> He bought it through the exchange of \$170 million in the stock of Chrysler Corporation and an agreement to take responsibility for the debts, including \$56 million in bonds, of Dodge Brothers.<sup>132</sup>

These deals harkened back to the earlier drive for consolidation in the industry although, by the 1920s, they typically involved only two companies. The 1920s also witnessed a novel type of transaction that transformed the ownership of some of the leading companies in the industry. The flotation of Dodge Brothers in 1925 is particularly noteworthy since it involved a huge cash-raising exercise in the securities markets and explains the spike in proceeds in 1925 which can be seen in Figure 1.

Dodge Brothers had been closely held from the time of its incorporation in 1914. Both of the brothers died in 1920 and their widows became the new owners and installed a manager to run the company. In 1925, the widows decided to liquidate their holdings and negotiated with some prospective buyers. GM made a bid but, eventually, the business was sold to the investment bank, Dillon, Read & Company for \$146 million in cash.<sup>133</sup>

Shortly afterwards, the bank turned to the securities markets to recapitalize the transaction through the flotation of \$85 million in preferred stock and \$75 million in bonds. One share of Class A nonvoting common stock was given as a bonus with each share of preferred stock. The deal was an overwhelming success with both issues being heavily over-subscribed.<sup>134</sup> Dillon, Read retained some of the Class A stock for itself and, more importantly, all of the Class B voting common stock. As a result, as Smith put it: “the bankers made a profit of \$14,000,000 (less expenses) and retained complete

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<sup>130</sup> *Motor Age*, vol. 48, no. 1, July 2, 1925, p. 33.

<sup>131</sup> Rae, 1959, p. 163.

<sup>132</sup> *Automotive Industries*, vol. 58, no. 23, June 9, 1928; p. 863; *Motor Age*, vol. 53, no. 23, June 7, 1928, p. 32; vol. 54, no. 5, August 2, 1928, p. 9.

<sup>133</sup> GM's bid was \$124.7 million in cash or \$50 million in cash and \$90 million in interest-bearing notes. Smith, 1968, p. 97; *Automotive Industries*, vol. 52, no. 14, April 2, 1925, p. 635.

<sup>134</sup> To Offer \$75,000,000 Dodge 6s Saturday, *Wall Street Journal*, April 10, 1925; The Dodge Transaction, *Wall Street Journal*, May 21, 1925, p. 1.

control of the company”.<sup>135</sup> When they sold out to Chrysler three years later,<sup>136</sup> the bankers exchanged their stock in Dodge, which by then was showing signs of going downhill,<sup>137</sup> for the shares of a company with better prospects.<sup>138</sup>

A concerted effort was made to do something similar for the Ford Motor Company, which would have resulted in an even larger transaction, somewhere in the region of \$1 billion or more. In testimony for a government tax suit against Ford’s minority shareholders, John Prentiss, senior partner in the firm of Hornblower and Weeks, one of the biggest investment houses in New England, said that on four separate occasions he had offered to buy Ford’s holdings with the intention of reselling securities in the company in the public markets.<sup>139</sup> Ford turned him down every time. Even if the Ford deal that Prentiss envisaged never transpired, other smaller transactions were conducted later in the 1920s to raise cash for the selling shareholders of companies including Reo Motor and Elcar Motor.

## 5. UNDERSTANDING THE SECURITIES MARKETS’ ROLE

As I noted in Chapter 5, there are a variety of hypotheses about the role that securities markets play in the corporate economy. Most economists believe that it is in funding capital formation that securities markets make their greatest contribution. My analysis of securities issues for cash by the automobile industry shows that, in total, \$939 million were raised in 159 securities issues by automobile companies in the period from 1908 to 1930. Relative to the book value of \$2,575 million in capital invested in the industry by 1929, this was a relatively large sum of money, accounting for 36 per cent of that total.

However, in contrast to the conventional view, which emphasizes the funding of fixed capital formation by the securities markets, this was the exception not the rule in the early automobile industry. There were cases, of course, in which automobile companies, especially new entrants, raised cash for fixed capital. However, it was more typical for automobile companies to issue securities to fund their working capital requirements.

An analysis of automobile companies’ balance sheets shows that working capital, especially inventories, accounted for a large share of the assets of the leading car makers for much of the period (see Figure 4). In 1911, in fact, the total amount invested in inventory by the major car producers was actually higher than the book value of their property, plant and equipment (PPE). Investment in inventory remained high, relative to fixed assets, through 1920. However, it declined sharply in 1921 and, from then, there was a steady decline in the importance of inventory, and working assets more generally, through the end of the decade.

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<sup>135</sup> Smith, 1968, p. 98.

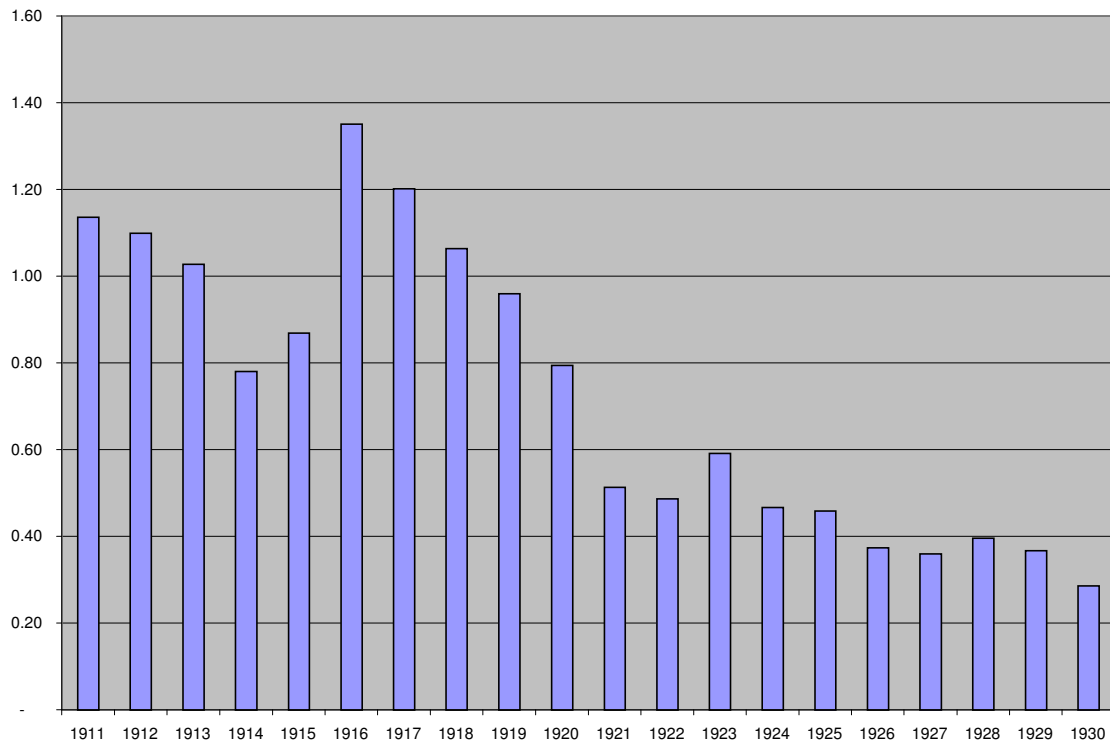
<sup>136</sup> *Automotive Industries*, vol. 58, no. 7, February 18, 1928, p. 226; no. 22, June 2, 1928, p. 853.

<sup>137</sup> *Automotive Industries*, vol. 58, no. 7, February 18, 1928, p. 226; no. 22, June 2, 1928, p. 853.

<sup>138</sup> Smith, 1968, p. 106.

<sup>139</sup> In 1916, 1923, 1924 and 1927, *New York Times*, February 3, 1927, p. 1.

Figure 4 Inventory as a Ratio of PPE for Major Car Producers



Source: author's analysis based on data in Moody's.

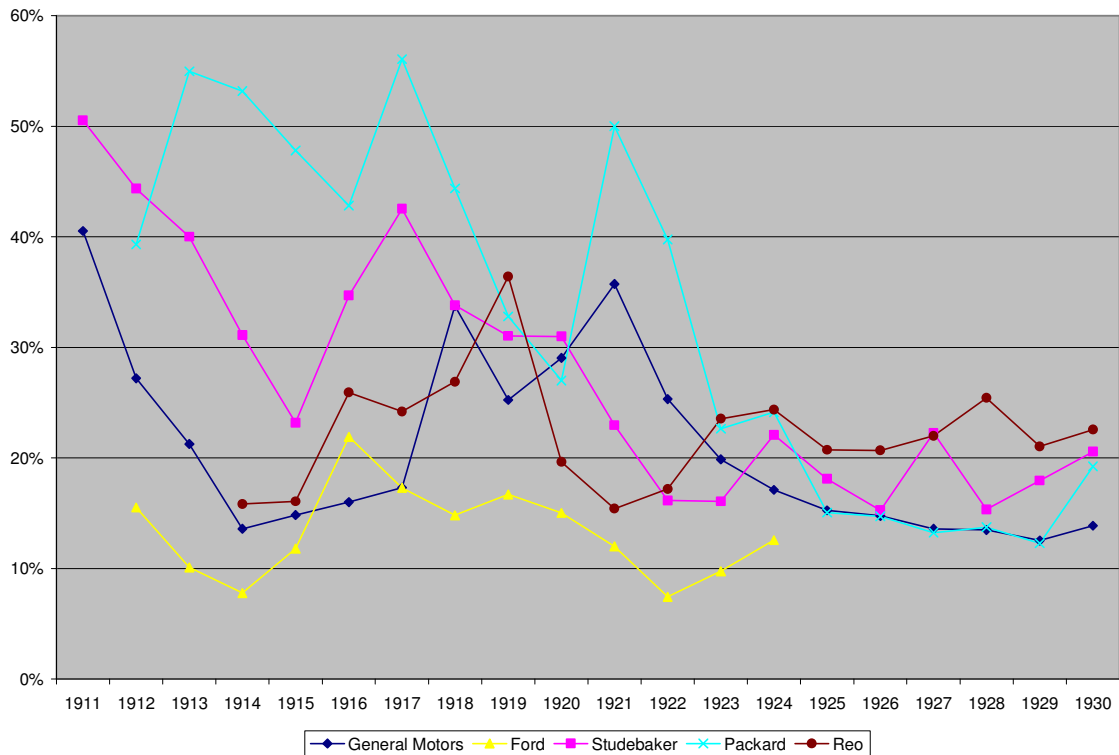
It is not that surprising, therefore, that so many of the securities issues undertaken in the early development of this industry were used to fund working capital and that securities issues diminished as the 1920s unfolded. Understanding the connection between working capital requirements and securities issues, moreover, sheds light on why some firms were major issuers of securities while others were not. For this purpose, it is helpful to look at levels of investment in inventories relative to sales to understand differences in automobile companies' working capital needs.

As Figure 5 shows, among the leading companies for which we have data, Ford Motor Company was by far the most efficient in its use of inventories. Even at their peak in 1916, Ford's inventories amounted to just over 20 per cent of sales, and were usually lower than that, even in the teens. Reo, although it certainly did not match Ford's performance, came closer than anyone else with only one year, 1919, when its working capital rose higher than 30 per cent of sales. Although they are not shown in Figure 5 for lack of sufficient data, Nash and Dodge also seem to have been highly efficient in their use of working capital.

In contrast, General Motors, Studebaker and Packard had a much harder time gaining systematic control over their inventory levels. And, although comparable statistics

cannot be generated for Willys-Overland and Maxwell, since they did not publish sales data, an analysis of their ratios of working to fixed assets suggests that they were in the same boat. To a large extent, it was these companies' high and variable inventory levels that drove them to the securities markets, sometimes by way of the banks, to raise money to finance their heavy, and often unplanned, working capital requirements. In contrast, for companies that remained largely autonomous of the securities markets for funding, the control they maintained over working capital and, in the case of Ford, the extraordinary steps it took to maintain it, was a crucial contributing factor.

Figure 5 Inventory as a Share of Sales for Selected Leading Car Companies



A second important role of the securities markets in the development of the automobile industry was in facilitating consolidation. Merger and acquisition activity in this industry was clustered. There was an initial spurt in the years after the 1907 crisis which gave rise to some of the industry's most important players. Then at the end of World War 1 there was another flurry of activity with the most striking deals masterminded by Durant and Willys. And, finally, in the late 1920s, there was a consolidation among some of the larger companies in the industry as they tried to keep up with Ford and GM.

The data on securities issues that I used as the primary basis for my analysis above understates the importance of consolidation since it includes only the issues undertaken to raise cash by the entities that emerged in the process. In addition, of course, we need to consider the securities issues undertaken in exchange for the outstanding securities of the target companies. Estimates of their importance in various sources show that

they often rivalled and sometimes surpassed securities issued for cash. For GM, for example, Seltzer estimated the relative importance of securities issues for cash and in exchange for properties during the company's most rapid periods of external growth. From 1908 to 1910 the company issued stock with a par value of \$8.8 million in exchange for the assets of other companies; in contrast, it issued \$5.7 million for cash. In the period from 1918 to 1920, the amount realized from the sale of securities for cash was, at \$132 million, greater than the \$115 million issued in exchange for properties but the latter was clearly still very large.<sup>140</sup>

A final role that the securities markets played in this industry was in facilitating the transfer of financial claims over existing assets. This occurred in a number of different ways. In some instances, securities issues were undertaken to refund and refinance existing assets as was the case for those completed by a number of medium-sized companies during the inaugural motor stock boom. Generally, these transactions involved the transformation of debt into equity claims on automobile assets. There were also a number of securities issues undertaken in the 1920s to transfer ownership from founders and their families to portfolio investors. The Dodge Brothers deal of 1925 was the most dramatic example of this type of transaction. Overall, however, the role of the securities markets in facilitating the transfer of financial claims was less important, in terms of the numbers and scale of the securities issues it involved, than their role in funding capital formation and facilitating consolidation.

## **6. CONCLUSION**

In this chapter I have taken a close look at how automobile companies used the securities markets in the early development of the automobile industry. I showed that securities issues were of minor importance in this industry until the beginning of the teens. They initially increased both in number and value during a motor stock boom in 1915 and 1916. Then in the post-war period and through the 1920 crisis securities issues by automakers reached unprecedented levels of importance. For the remainder of the 1920s, however, they exhibited a marked tendency to decline in significance with the exception of a number of major transactions.

Established players, including leading companies like General Motors and Willys Overland, dominated among issuers of securities. Issues by smaller companies, including new entrants, did occur but they tended to cluster in periods of booming stock prices. Securities issues served two primary roles in this industry. First, when they were used to raise cash, it tended to be committed to investments in working assets, especially inventory, rather than fixed capital. Second, securities issues were undertaken to facilitate the merger and acquisition of competing and related firms. Although some securities issues were undertaken to transfer financial claims over existing assets, they were of limited importance in this industry.

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<sup>140</sup> Seltzer, 1928, p. 160, p. 227.

My analysis in this chapter has important implications for how we evaluate the impact of the securities markets on the early automobile industry. Specifically, it tells us that, in assessing their effect, we must look to the implications of the support they provided for investments in working capital and acquisitions of competing and related firms. I deal with these implications in some detail in Chapter 12, where I provide an integrated treatment of the findings of all of my industry case studies.

# **BONDING AND SHARING CORPORATE AMERICA: THE US SECURITIES MARKETS, INDUSTRIAL DYNAMICS AND CORPORATE DEVELOPMENT, 1885-1930**

**Mary A. O'Sullivan**

**OCTOBER 2009**

## **I. BOOK SUMMARY**

This book is about the development of securities markets in the United States. It focuses on the period from 1885 to 1930 when these markets became integral to the institutional system that forms the bedrock of industrial capitalism in America. It addresses two related questions. First, how did the markets for stocks and bonds in the United States evolve during this period? Second, what role did these markets play in the dramatic changes in the structure of enterprise and industry, changes that business and economic historians have described as revolutions, which took place in the American economy at this time?

Today, the US securities markets are seen as inextricable to the functioning of American capitalism. In comparative perspective, they are among the most distinctive elements of the U.S. financial system and their important relationship to the corporate sector is seen as a defining feature of the country's system of corporate governance. Notwithstanding their contemporary prominence, the US securities markets have not always been at the heart of American industrial capitalism.

In the late 19<sup>th</sup> century, these markets were small and conservative in comparison to their counterparts in other countries. Dominated by railroad securities, they largely eschewed not only the new industries and new firms of the day but most of the industrial economy. In 1885, for example, there were only 13 industrial stocks, other than coal and mining shares, listed on the New York Stock Exchange and several of these were closely related to the railroad business. By 1930, however, an enormous transformation had occurred. The New York Stock Exchange alone traded more than 1,000 industrial stocks and bonds and other trading markets, such as the New York Curb Market, the Chicago Stock Exchange, and the nation's over-the-counter markets traded thousands more. It was during this time that many of America's leading corporations made their debuts on the securities markets. In sharing their securities with portfolio investors, they also bonded themselves to a future in which the securities markets would influence their destinies.

This book, *BONDING AND SHARING CORPORATE AMERICA*, begins by telling the story of this remarkable transformation of the US securities markets during the period from 1885 to 1930. It confirms, as other histories suggest, that an important step in the

direction of broader and deeper markets was taken at the turn of the century. However, it also shows that it was during the years after World War 1, and even as late as the 1920s, that the country's markets for corporate securities grew broad and deep.

Unlike most existing accounts, which focus primarily on the evolution of the New York Stock Exchange, this book also pays close attention to the development of the New York Curb Market, the regional exchanges, as well as America's burgeoning over-the-counter market for bonds and stocks. While the Big Board focused on the nation's leading industrial enterprises, the book shows how, especially during crucial growth phases, other trading markets attracted the securities of new firms and new industries. In this regard, they served in large part as substitutes for, and precursors to, the NASDAQ market of today. The book reveals that the ways in which these various markets interacted, as competitors and complements, had important implications for the norms and rules through which they operated and, ultimately, for the overall character of the American securities markets.

My analysis raises questions about some of the influential theories that have been advanced in contemporary debates on the causes of the development of securities markets. In particular, the idea that legal protection for minority investors is crucial for the expansion of securities markets cannot be sustained for this important case. This is so whether that legal protection is rooted in a country's legal family or its politics (La Porta, Lopez-de-Silanes, Shleifer, Vishny, 1997, 1998; Roe, 2000; 2006; Gourevitch and Shinn, 2005). Similarly the claim that the development of securities markets was facilitated by private rules generated by prime movers such as stock exchanges and investment bankers is found wanting in this case. Instead, the book points to alternative causal processes as crucial for the development of America's securities markets. On the demand side, major changes in the attitudes of investors to different classes of corporate securities played an important role in facilitating the development of an active and diversified market for corporate securities. And, even more importantly, there were significant changes in the supply of securities which were driven not just by changes in the structural characteristics of industries, but also by enterprises' shifting attitudes to business success, which influenced their strategies and the financing they needed to pursue them.

The story of the transformation of America's securities markets is a fascinating one in its own right but the telling of it can hardly fail to generate a further, and related, question which *BONDING AND SHARING CORPORATE AMERICA* also addresses: how did the securities markets matter to the development of the US corporate economy during this period? Why did so many of America's industrial enterprises choose to issue their bonds and shares on the US securities markets at this time? How did their newly-established relationships with these securities markets affect their own dynamics and the evolution of the industries in which they competed?

We know from the work of business and economic historians that the nation's industrial economy was caught up in its own great ferment at this time. Many of the established industries were fundamentally reorganized as enterprises grappled with the demands generated by new markets and technologies. Entirely new industries also emerged, including automobiles, aviation, radio and film, which were to have a profound effect on production and consumption in the United States. And in other industries, like retailing, old and new ways of doing business battled it out with each other for customers. In describing this period, American business and economic historians speak of revolutions in the strategies and structures of enterprises as well as the dynamics of industries.

Since the rise of large and liquid securities markets, the question of their impact on the corporate economy has been wracked by controversy. Some scholars see securities markets as crucial to facilitating the productive expansion and creative transformation that drives innovation and economic development. Others argue that the securities markets' appetite for novelty is a lure to the speculative excess that can cause bubbles and crashes. And, finally, there are those who argue that the real significance of the securities markets for the corporate economy is their impact on the distribution of corporate ownership and control.

BONDING AND SHARING CORPORATE AMERICA takes the position that we can only speak to the question of the securities markets' impact on the corporate economy from an understanding of the purposes for which securities issues were undertaken. To this end, I emphasize the benefits of an approach that focuses on the industries, and the firms within them, that issued securities. In a set of detailed case studies, I analyze historical patterns in securities issuance in five important industries of the period: steel and electrical equipment, automobiles and aviation, as well as retailing. I developed lists of securities issues undertaken by firms in these industries from a new dataset that I compiled on securities issues in the United States from 1885 to 1930. Based on further investigation of the characteristics and strategies of the firms that issued securities in these industries, based largely on information from trade and financial journals, annual reports, and industry reports and investigations, I identify the purposes their securities issues were intended to serve.

The historical case studies of particular industries reveal significant differences across industries, and within industries among firms, in the importance and purpose of securities issues. Nevertheless, a number of general statements can be made about the role of securities markets during this period. First, to the extent that securities issues funded capital formation, they often funded the formation of working, rather than fixed, capital. Second, in most of these industries, the securities markets also played an important role in facilitating consolidation through mergers and acquisitions. Finally, in some instances, securities issues fostered significant changes in financial claims over existing assets but, in general, this was less important than the other two roles.

This analysis provides a rich empirical basis on which to consider the question of the impact of the securities markets on the development of the corporate economy. I argue that straightforward associations between securities issuance and economic development are problematic in light of my evidence. I show that many of the companies which required assistance from the securities markets in funding their working capital requirements were laggards, rather than leaders, in their industry. Moreover, I show that it is difficult to argue, at least in general, that the consolidations that securities markets facilitated were necessary to promote economic improvement.

With regard to the thesis that securities markets served as a vehicle for speculative excess, I did find some evidence of the speculative impact of the securities markets on the corporate economy. However, to a greater extent, companies seem to have marched to their own drum in issuing securities. Sometimes they did so despite a lack of enthusiasm in the financial community. And, in more exuberant periods, the crucial players in promoting speculative excess were just as much industrial, as financial, entrepreneurs, most of them owner-managers, who devised their expansive strategies and used the securities markets to implement them.

Finally, in several of the industries I studied, bankers and other capitalists did attain influence, and even control, over important firms, usually at some difficult or transitional stage in their development. However, in all but one case, “finance capitalism” proved to be a transitional stage. Nevertheless, managerial capitalism was far from being firmly in place in all of the industries I studied by the onset of the Depression with a marked persistence of family ownership in several important industries through the 1920s.

## **II. INTELLECTUAL CONTEXT AND CONTRIBUTION**

This book is an interdisciplinary one in its origins and its ambitions. Based on the original and extensive collection of historical data, it should be of considerable interest to business and economic historians. Evolutionary economists and management scholars who analyze industrial and enterprise dynamics, and want to understand how they might be linked to financial dynamics, can also find much to engage them in its pages. In addition, *BONDING AND SHARING CORPORATE AMERICA* is written to appeal to social theorists, be they legal scholars or economists, sociologists or political scientists, who are involved in the ongoing debate about the causes and consequences of the development of securities markets. Finally, it is a book that speaks to students of the political economy of capitalism, especially those who want to better understand the changing role of the securities markets in the institutional system that forms the bedrock for America’s corporate economy.

The case of the US securities markets’ transformation in the period from 1885 to 1930 has already been recognized as an important one in the ongoing debate among economists, sociologists and legal scholars about the causes of the development of

securities markets (see, for example, Coffee, 2001; Rajan and Zingales, 2003). However, it has been used in problematic and even conflicting ways by advocates of different positions in this debate and some financial historians have intervened to protest an abuse of historical evidence (see, for example, Sylla, 2006). Yet, it seems fair to admit, that historians have not made the task of theorists very easy since the extant body of evidence on the rise of an industrial securities market in the United States is both patchy and ambiguous.

Most detailed historical research on the development of the US securities markets focuses on the initial emergence of the industrial securities market around the turn of the last century (Navin and Sears, 1955; Davis, 1966; Nelson, 1959; Doyle, 1991). In contrast, there is little to go on to get a comprehensive and systematic understanding of what happened to the securities markets from the beginning of the 20<sup>th</sup> century through 1930. Moreover, histories of specific trading markets from the late 19<sup>th</sup> century until the 1930s are dominated by accounts of the New York Stock Exchange (see, for example, Sobel, 1965; Michie, 1987). We know frustratingly little about the details of the development of other trading markets. Our knowledge of the New York Curb is limited to the very useful, but largely qualitative, histories by Robert Sobel (Sobel, 1970; 1972). With the exception of a number of older works and one recent book, most of which focus on the early to mid-19<sup>th</sup> century, the historical scholarship on the leading regional exchanges also remains thin on the ground (Martin, 1886; Rice, 1928; Wright, 2005).

BONDING AND SHARING CORPORATE AMERICA draws extensively on the work of these financial historians but the book is intended to return the favor by making its own contribution to financial history. The most important reason for the gaps and ambiguities in the existing historical evidence is a lack of comprehensive and systematic data on the scale and scope of US securities markets in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. As a consequence, this book could not have been written without the collection of significant amounts of new firm-level data on securities listings and issues. Data for stocks and bonds traded on all of the major trading markets were compiled for 5-year intervals from 1885 to 1930 from a number of stock exchange handbooks and financial annuals, including the *Manual of Statistics*, *The Annalist* and the *Bank & Quotation Record*, a supplement to the *Commercial and Financial Chronicle*. The even larger task of compiling a dataset of all known securities issues in the United States over the entire period, nearly 15,000 transactions in total, was undertaken by copying issue data from monthly summaries reported in the *Journal of Commerce* and the *Commercial and Financial Chronicle*. These data were subsequently matched with information on the characteristics of issuing firms which was drawn largely from the industrial manuals produced by Moody's and Poor's.

These datasets on securities listings and issues alone represent important new resources for financial historians. For the purposes of this book, however, further research was required to understand the context in which securities were bought and sold. For its analysis of the development of the trading markets, the book relies on

primary research in the archives of the New York Stock Exchange, various histories of the trading markets, and on a systematic analysis of contemporaneous accounts of the operation and development of different trading markets in newspapers and magazines. Of particular importance were articles in the specialized financial and business press including the *Commercial and Financial Chronicle*, *Barron's* and the *Magazine of Wall Street*.

However, the book also seeks to branch out from what is purely financial history in its efforts to engage the controversial question of the role of America's securities markets in the development of the nation's corporate economy. In the last quarter of the 20<sup>th</sup> century, there was a striking tendency to celebrate securities markets as a boon, through capital formation and innovation, to economic prosperity (see, for example, Demirgüç-Kunt and Levine, 1996; Allen & Gale, 2000). However, in the early 21<sup>st</sup> century, as has long been true of periods marked by financial volatility, greater credence was given to the idea that securities markets are inherently speculative and have a potentially negative impact on the corporate economy when it relies on them to fund investment (Keynes, 1936). Yet, for all of the passion associated with these positive and negative extremes, perhaps the most prevalent attitude towards the securities markets over the last century portrays them as playing a neutral, and even unimportant role, in the process of economic development (Robinson, 1952; Lucas, 1988).

Similar lines were drawn by contemporaries in debates about the role of America's securities markets during the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. However, our capacity to identify which perspective makes most sense is again frustrated by limits to the existing evidence. The standard approach to evaluating the historical role of the securities markets in the US economy is to rely on aggregate data on the importance of securities issues relative to other sources of corporate funds (see, for example, Goldsmith, 1958; Taggart, 1985). However, as Simon Kuznets long ago observed, these measures are poor guides for the purpose because they obscure the heterogeneous, and sometimes offsetting, relationships of different industries and firms with the securities markets (Kuznets, 1961, pp. 223-4).

What we need instead are studies that analyze the interactions between these markets and particular industries and firms. Scholars have recently recognized the potential value of focusing on the microeconomic units that use securities markets to understand how they influence the economy (see, for example, Rajan and Zingales, 1998). This book takes that lesson seriously but it departs from contemporary research in insisting on historical studies of the industries and firms. Only in this way can we take account of the ways in which the changing circumstances of their development influence the motivations for, and impact of, their securities issues.

Studies that get at the interaction between securities markets and the dynamics of industry and enterprise are currently few and far between. Notwithstanding some notable exceptions (for a recent example, see Hausman and Neufeld, 2002), business

historians have had relatively little to say on the topic. There is a small body of work by economic historians that draws insights about the role of the securities markets from studies of their historical role in the development of industries. However, these studies cover only brief periods of time and, even then, they suggest somewhat conflicting findings (see, for example, Davis, 1966; Kennedy, 1987; Neal, 1988; Eichengreen, 1988; Doyle, 1991).

BONDING AND SHARING CORPORATE AMERICA, therefore, makes a significant contribution in analyzing the historical role of the securities markets in the development of particular industries and the firms that competed within them. It does so at the aggregate level with a comprehensive analysis of the evolving importance of different industries in securities issuance in the United States from 1885 to 1930. It also generates detailed case studies of the securities markets' changing role in a variety of industries that, together, capture much of the dynamics and variety of America's corporate economy in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. These historical case studies of the steel, electrical equipment, automobile, aviation and retail industries present a richer picture than we have ever had before of how industries and firms used securities markets in America from 1885 to 1930.

The datasets described above were used extensively for the book's research on industries and firms and their patterns of securities issuance. In addition, I draw on articles generated by a careful reading of the trade journals for these industries as well as other relevant articles identified through consultation of the *Engineering Index*, the *Industrial Arts Index* and the *Readers' Guide to Periodical Literature*. The historical case studies also rely on business and industrial histories generated by academics and various branches of the US government. In addition, they use various reports that analyzed the structural characteristics of different industries such as the NBER volumes on capital formation and financing undertaken in the postwar period.

For all of its commitment to historical research and analysis, the book has another purpose which is to engage with contemporary theoretical debates on the causes and consequences of securities markets. To date, historical research on the development of securities markets has been used in a rather minimal way to augment the statistical variation available in cross-sectional studies for the purposes of testing extant theories. However, as scholars in a variety of disciplines have observed, historical research can also be used in a more ambitious way in the development of theories of institutional change by taking advantage of its unique characteristic, its temporality, to explore the mechanisms and sequences that characterize causal processes.

This book uses history in just this way, to highlight problems with existing theories of the development of securities markets, and to suggest alternatives to them. It also goes further in the use of historical research, harking back to an earlier tradition in social theory that regarded historical context as essential, although not contrary, to theoretical explanation. Specifically, it uses historical research to reveal the evolving

habits and rules that informed the behavior of individuals and organizations in different contexts, thus challenging the merits of universalist approaches to subjects such as financial valuation and corporate strategy for understanding the past.

In suggesting historically-grounded explanations of the causes and consequences of the development of the US securities markets during the period from 1885 to 1930, the book serves as a source of ideas for new theoretical hypotheses about securities markets in other times and places. For their validity to resonate further than this case, of course, these ideas need to be tested in further empirical research. Yet, in showing the value of a methodological approach which is distinguished by its emphasis on the dynamics of enterprises and industries and its commitment to historical research, this study serves as a model for the further empirical work on the causes and consequences of the development of securities markets that is required.

### **III. THE STRUCTURE OF THE BOOK**

BONDING AND SHARING CORPORATE AMERICA has twelve major chapters as well as a brief introduction and conclusion. The first part of the book, from Chapter 1 through Chapter 4, analyses the development of the US stock and bond markets from 1885 to 1930 and draws out the implications of its historical evidence for theoretical debates about the causes of the development of securities markets. The second part of the book, from Chapter 5 through Chapter 12, analyses patterns of securities issuance by industry in the United States from 1885 to 1930. It also investigates how particular industries used securities issues in five detailed historical studies of the steel, electrical equipment, automobile, aviation, and retail industries. It draws implications from that historical evidence for debates about the role of securities markets in economic development. An outline of the book's chapters is included below:

#### **Introduction**

#### **Chapter 1 The Development of Securities Markets**

1. Introduction
2. What Causes the Development of Securities Markets?
  - a. Legal Rights of Minority Investors
    - i. Legal Families & Investor Protection
    - ii. The Politics of Investor Protection
  - b. Private Ordering by Prime Movers
    - i. The Microstructure of Exchanges

ii. The Money Trust

c. The Shifting Demand for, and Supply of, Corporate Securities

3. The Theoretical Possibilities of Historical Research
4. The Development of the US Securities Markets, 1885-1930
5. Empirical Methodology and Data Sources

**Chapter 2 The Development of the US Stock Market, 1885-1930**

1. The US Stock Market in 1885
2. The New York Stock Exchange, 1885-1930
3. The New York Curb Market, 1885-1930
4. The Development of the Regional Stock Exchanges, 1885-1930
5. The Evolution of the Over-the-Counter Market for Stock, 1885-1930
6. The Overall Expansion of the US Stock Market, 1885-1930

**Chapter 3 The Development of the US Bond Market, 1885-1930**

1. The US Bond Market in 1885
2. Bonds on the New York Stock Exchange, 1885-1930
3. Bonds on the New York Curb Market, 1885-1930
4. The Over-the-Counter Market for Bonds, 1885-1930
5. The Overall Expansion of the US Bond Market, 1885-1930
6. The Relationship between the US Stock & Bond Markets

**Chapter 4 Explaining the Development of the US Securities Markets, 1885-1930**

1. Legal Rights of Minority Investors in the US, 1885-1930
2. Private Ordering by Prime Movers
  - a. The Changing Microstructure of Trading Markets
  - b. The Rules and Norms of Investment Bankers
3. Other Changes in the Demand for Securities, 1885-1930
  - a. The Growing Financial Wealth of the United States
  - b. Retail & Institutional Demand for Securities

- c. The Evolution of Conventional Attitudes towards Securities
  - d. The European Liquidation of American Securities
  - e. The Nationalization of American Railroads
4. Changes in the Supply of Securities, 1885-1930
    - a. Owners Moving On
    - b. Enterprises Seeking Investment Capital
    - c. Industries Consolidating

### **Chapter 5 The Impact of Securities Markets on the Corporate Economy**

1. Introduction
2. Debates about the Impact of Securities Markets
  - a. Securities Markets and Economic Development
  - b. Securities Markets and Speculative Excess
  - c. Securities Markets and Governance Change
3. Understanding the Role of the Securities Markets
  - a. A Focus on Industries and Firms
  - b. The Importance of a Historical Approach
4. U.S. Securities Markets' Roles in the Development of Industries and Firms, 1885-1930
5. Empirical Methodology and Data Sources

### **Chapter 6 Steel on the US Securities Markets**

1. Introduction
2. The Development of the US Steel Industry
3. Securities Issues by the US Steel Industry
4. Characteristics and Strategies of Steel Issuers
5. Understanding the Securities Markets' Role

### **Chapter 7 Electrical Equipment and the US Securities Markets**

1. Introduction
2. The Development of the US Electrical Equipment Industry

3. Securities Issues by the US Electrical Equipment Industry
4. Characteristics and Strategies of Electrical Equipment Issuers
5. Understanding the Securities Markets' Role

#### **Chapter 8 Motors on the US Securities Markets**

1. Introduction
2. The Development of the US Automobile Industry
3. Securities Issues by the US Automobile Industry
4. Characteristics and Strategies of Automobile Issuers
5. Understanding the Securities Markets' Role

#### **Chapter 9 Flying Machines on the US Securities Markets**

1. Introduction
2. The Development of the US Aviation Industry
3. Securities Issues by the US Aviation Industry
4. Characteristics and Strategies of Aviation Issuers
5. Understanding the Securities Markets' Role

#### **Chapter 10 Merchants on the US Securities Markets, 1895-1930**

1. Introduction
2. The Development of the US Retail Industry
3. Securities Issues by the US Retail Industry
4. Characteristics and Strategies of Retail Issuers
5. Understanding the Securities Markets' Role

#### **Chapter 11 Explaining the Role of the US Securities Markets in the Corporate Economy, 1885-1930**

1. Introduction
2. A Summary of the Evidence
  - a. The Characteristics of Issuing Firms
  - b. The Motivations for Securities Issues
  - c. The Fates of Securities Issuers

3. A Broader Perspective on the Evidence
4. An Assessment of the Evidence's Implications
  - a. Economic Development and Securities Issuance
  - b. Speculative Excess and Securities Issuance
  - c. Governance Change and Securities Issuance

## **Conclusion**

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