Urban Investment versus Local Enterprise: Railroad Financing in Pennsylvania and Virginia, 1830-1860

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Scholars have long recognized the important differences between the northern and southern rail networks. Business historians focusing on northern enterprises have documented an impressive list of accomplishments: railroads pioneered modern accounting methods; railroads introduced new management techniques and organizational structures; and railroads helped transform national and international capital markets [3, pp. 79-121]. While historians have credited northern roads with nothing less than a transformation of the economy, they have castigated southern roads in the antebellum era as "colonial-style" ventures [10, p. 50; 24, pp. 22-24]. Southern roads generally had less traffic, fewer stations, fewer employees, and less rolling stock than their northern counterparts [21, pp. 13-14; 13, p. 13]. Even more important was the lack of integration in the southern system. By the 1850s, northern leviathans such as the Pennsylvania Railroad had begun integrating entire systems built around great trunk lines. The southern roads, lacking central trunk lines, did not complete a single intersectional connection. Even Robert William Fogel, who has depicted a growing and prosperous southern economy, contrasts "the great railroad trunk lines connecting the cities of the Midwest and the East" with the conspicuous absence of "railroad links between the Midwest and the South" [9, p. 304].

A comparison of the railroads in Albemarle county, Virginia and Cumberland county, Pennsylvania, suggests why each region developed different railroad systems. More than 30 years ago Lance E. Davis argued a "shortage of finance" hindered the growth of the antebellum southern textile industry [5, p. 293]. The same might be said of southern railroads. Lacking a major urban center which could supply needed funds, the Virginia Central (eventually running from Richmond to Charlottesville and then to Staunton) relied on local investors and the state government for its capital. Connecting Chambersburg with Harrisburg via Carlisle, the Cumberland Valley Railroad, on the other hand, raised its capital from Philadelphia financiers. When the company sold new preferred stock in the early 1850s, a few well-connected families purchased the

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entire issue. In 1859 the Pennsylvania Railroad brought controlling interest in the company, cementing the influence of outside investment.

The differing sources of capital had important economic impacts on the two roads. The Philadelphia capitalists who controlled the CVRR purchased the best equipment, streamlined the road's administration, and expanded its connections. In sharp contrast, the Virginia Central's dependence on local capital and government subsidies led to constant frustration. The Virginia Central's directors, determined to make their railroad Old Dominion's highway to the West, pushed to expanded the road into a trunk line. But dependence upon state subsidies put the enterprise's fate into the hands of bickering legislators who authorized funds only after years of debate. In 1853, the legislature finally decided to build the state-owned Covington and Ohio Railroad to connect with the Virginia Central, thereby providing Richmond with a connection to the West. Inadequate appropriations, however, prevented the completion of the Covington and Ohio before the outbreak of the Civil War. As a result, the Virginia Central was stranded in the mountains, a fitting symbol of Virginia's rail network.

The comparison of Cumberland Valley Railroad and the Virginia Central suggests the crucial importance of urban capital in centralizing regional rail systems. Large cities could provide a steady supply of passengers and cargo that would make costly trunk lines profitable. Investors from large cities could then provide the financing for the trunk road and subsequent branch lines, integrating them into a coherent system. In this sense the description "colonial-style"--if the term is taken to mean a system built by outsiders unconcerned with local development--is more apt for Cumberland than Albemarle. It was "foreign" investors from Philadelphia, after all, that provided the Cumberland Valley Railroad with the bulk of its capital and many of its managers. The Virginia Central, on the other hand, was financed by resident landowners steadfastly concerned with local development. For a state concerned about dependency on outsiders, Virginia railroad development offers delicious historical irony. It was precisely the South's reliance on its own resources--local capital and state subsidies--that led the region to develop its awkward, unintegrated railroad network.

Initial Development of the Roads

First known as the Louisa Railroad, the Virginia Central was initially a branch line of the Richmond, Fredericksburg, and Potomac Railroad.[2] The Louisa ran from Junction (about 25 miles east of Richmond) 48 miles west to Gordonsville, located in the central piedmont county of Louisa. Completed in 1840, the road would remain in Gordonsville until it extended into Albemarle a decade later. The road eventually separated all ties with its parent road and was rechristened the Virginia Central Railroad, signifying that it was to become the principal commerce artery of the state. It not only expanded westward, but also built its own line from Junction to Richmond. Important parts of the road would

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[2]The road carried the name Louisa Railroad until 1850. For the sake of clarity, however, I use the name Virginia Central throughout the text.

be built entirely by the state government, including an 18-mile stretch over the Blue Ridge Mountains, as well as the Covington and Ohio connection. That Virginia's main trunk line began as a branch line testified to the haphazard nature of the state's rail network.

The Virginia Central's extension into Albemarle was born amid the fires of intense town competition. Initially, the Virginia Central proposed by-passing Charlottesville altogether, and head for the northern valley town of Harrisonburg instead. For many years it appeared that Harrisonburg had a lock on the proposed extension. In 1845 the directors enthusiastically endorsed a reported entitled "the extension of said road from Gordonsville to Harrisonburg, with a view to its ultimate extension to the Ohio River." [2, 1854, p. 67] For Charlottesville, the northern route spelled disaster, for there would be little chance of securing another line.

Almost miraculously, Charlottesville prevailed in 1847. How the company reached that decision became a subject of great public debate, for the furious Harrisonburg interests launched a firestorm of criticism. In the lengthy newspaper controversies that followed, Virginia Central president Edmund Fountaine argued that surveys had shown that the two routes were more or less equal. What pushed the scales in favor of Charlottesville was the enthusiastic purchase of stock on part of its residents. Indeed, Fountaine had warned supporters of the northern route that "the probable facility of getting the necessary stock must exert its due weight. I learn that there is great spirit, zeal and activity in Albemarle." [19, p. 2]. The company seemed to have been guilty of only setting one region against another to raise additional capital, hardly a great crime for a railroad. The courts eventually ruled in the company's favor, forcing the Board of Public Works to reluctantly release the authorized subsidies. Charlottesville would have its railroad.

The Cumberland Valley Railroad had a less dramatic beginning than the intense competition over the Virginia Central. The well-developed urban structure of the Valley all but dictated that the basic route of the road would be Harrisburg to Carlisle to Chambersburg. The rolling landscape between these towns was ideal terrain, and the lack of a parallel river or canal made a railroad even more appealing. Indeed, Carlisle newspapers seemed infatuated with the possibilities of the railroad almost as soon as the technology appeared [1, p. 3]. Not surprisingly, in 1831 enthusiastic residents petitioned the legislature granted a charter to build a short road from Carlisle to the Susquehanna River near Harrisburg. Although the proposed venture failed to attract a sufficient number of investors, a more ambitious 55-mile road from Harrisburg to Chambersburg proposed less than four years later succeeded in getting enough capital to fulfill the requirements of the company's charter. The Cumberland Valley Railroad was finally completed in 1837.

Differing Sources of Capital

In terms of raising its capital, the Virginia Central was an example of what may be called the "developmental corporation."[3] The aim of investors was not so much direct profit from dividends -- although that motivation was never entirely absent -- but indirect benefits such as higher property values and increased local commerce. The conflict between Charlottesville and Harrisonburg was so intense because citizens of both localities knew that the indirect benefits were great. The Cumberland Valley Railroad represented a sharp departure from this model, as most of its investors were primarily interested in direct returns as opposed to indirect benefits. The differences between the "developmental" Virginia Central and the "direct-profit" CVRR was apparent in the composition of its investors.

Table 1. The Greater Concentration of Investment in the Cumberland Valley Railroad

Railroad (Year Capital Stock was Issued	Number of Investors	Average Investment Per Person	Median Investment Per Person	Standard Deviation
Cumberland Valley Railroad (Initial Stock Issue of 1835)	400	$1050	$200	$10,000
Cumberland Valley Railroad (Initial Stock Issue, Excluding BUS Holdings)	399	$550	$200	$850
Virginia Central Railroad (Stock Issue of 1847)	501	$200	$100	$170

The distribution of investment, as revealed in the initial shareholder lists, revealed important differences. As Table 1 shows, 400 people purchased stock in the Cumberland Valley Railroad, while about 500 did the same for the Virginia Central's much smaller Albemarle extension. Moreover, the capital stock was much more concentrated for the Pennsylvania railroad. Even if the purchases of the Bank of the United States are excluded, the standard deviation for the Cumberland Valley Railroad was almost five times as large as the Virginia Central's. The remarkably even distribution of investment in the Virginia Central attests to its developmental character, as hundreds of investors participated in the effort to attract the road to Charlottesville with a purchase of

[3] Turnpikes were superb examples of developmental corporations. For an analysis of how they raised capital, see [14, 16].

a share or two. The largest Albemarle stockholders invested only $1,100 apiece, with only ten men invested $1,000 or more. In contrast, 77 investors in the Cumberland Valley owned at least $1,000 in stock.

Even more telling is the location of the investors. For the stockholders financing the Virginia Central's extension into Albemarle, almost 200 investors could be matched to Albemarle tax lists.[4] Most investors lived very close to the railroad, ready to reap the anticipated indirect benefits. For each piece of property the property tax lists recorded the direction and distance from the Albemarle county courthouse. These coordinates, although imprecise, allow one to determine whether investors lived within the general vicinity of the road, which ran from the county's northeast corner before intersecting Charlottesville in an east and west direction. Seventy five percent of the Albemarle's investors and 78 percent of the Albemarle's capital came from areas close to the road. Especially impressive were the efforts of those living within or near Charlottesville, who provided almost half of Albemarle's total investment. Such investment speaks volumes about the importance of indirect benefits in the minds of stockholders. While the expectation of dividends undoubtedly attracted some investors, one would have expected to see investment from other parts of the county if large direct returns had been the primary motivation. The Virginia Central depended upon the same interest in indirect benefits to raise capital for its other extensions.[5] In sharp contrast, most of the large investors in the CVRR did not reside near the line. A relatively small group of Philadelphians accounted for almost two-thirds of the privately subscribed capital, including $200,000 invested by the Bank of the United States. The influence of the Philadelphia capitalists, moreover, grew over time. In 1849, the need for new tracks forced the company to seek a new infusion of capital. Philadelphia financiers proved more than willing to provide the needed funds, buying more than $700,000 of preferred stock that replaced the company's mortgaged debt. By 1851, 42 investors held the entire preferred stock, owning an average of $16,607 in the stock. The real degree of centralization was much greater, as nine representatives of the Biddle family collectively invested $191,500 in the enterprise.[6] Any similarities of the CVRR to the earlier developmental corporations was now lost in a flood of Philadelphia capital, for these investors were much more interested in the guaranteed eight percent dividend of the preferred stock than in any indirect benefits.

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[4]While no attempt has been made to match the other names to tax lists from surrounding counties, fragmentary evidence suggests that most of the other investors came from Staunton and its hinterland. Staunton had as much to gain as Charlottesville in attracting the road away from Harrisonburg, its natural rival for the trade of the central Shenendoah Valley.

[5]For most of the road's other extensions, the distribution of the shares was not as even as Albemarle's. This probably reflected the greater investment of Richmond merchants, who began to see the road as their avenue to the West. But even with Richmond capital, shares in the Virginia Central were more evenly distributed than those of the CVRR.

[6]This was calculated from Balance Sheet and List of Subscribers, found [4].

Philadelphia capital had not only replaced local investors, but it had also supplanted government subsidies. In its early years the CVRR relied heavily on government stock purchases, receiving $100,000 in state funds in 1836. This aid was crucial. The capital starved company, desperately trying to complete the road, would surely have failed in 1836 or 1837 without government assistance. After the Panic of 1837, however, the disastrous financial performance of the state's canal system forced the dangerously over-extended Pennsylvania government to curtail subsidies to all transportation projects. In 1843, the state government tried to unload many of its transportation investments at special auctions [12, pp. 161-80]. Unable to sell most of its CVRR shares, the state simply gave 85 percent of its holdings back to the company. Implicit in the transaction was the understanding that capital for future improvements would have to come from other sources. The CVRR was an example of what Lance E. Davis and Douglass C. North have called the transition from "private-government partnership" of the 1830s to "private capital markets" of the 1840s and 1850s [5, pp. 45-46].

The transition never happened in Virginia. The state funded 60 percent of the Albemarle extension ($120,000 of total capital stock of $220,00) and provided similar support to fund other sections. By 1860, the Virginia state government had provided $1.96 million of a total capital stock of $3.29 million. This figure greatly underestimates the impact of government subsidies because it does not include the Blue Ridge Railroad. Completely financed by the state, the Blue Ridge Railroad consisted of an 18-mile stretch over the mountains that was vital to the Virginia Central's plan to reach the Ohio River. The state government also promised to build the Covington and Ohio, which, if it had been completed, would have connected the Virginia Central to the West.

The Economic Impact of the Capital Sources

While the developmental corporation successfully mobilized local capital, it proved much less successful in funding the Virginia Central's westward march. The main problem was that those living along the line usually did not have enough capital to fund the road. Even rich and fertile Albemarle could barely shoulder its share of a $100,000 subscription when hundreds of investors stepped forward. The situation was worse when the Virginia Central tried to cross the mountains, as large segments of the road would be built over unpopulated areas with high construction costs. Northern trunk lines solved the problem by connecting large urban centers--New York to Buffalo, Philadelphia to Pittsburgh, Baltimore to Wheeling--that could generate enough traffic to make trunk lines profitable. But Richmond, with a total population of less than 40,000 in 1860, was no New York or Philadelphia. Indeed, the aggregate 1860 population (both slave and free) of the counties between Covington and Richmond was just over 237,000, or less than half of Philadelphia's population! Unable to generate enough traffic to make a trunk line profitable, Richmond and the Virginia Central would have to rely on state largess rather than private capital markets.

Government subsidies led the Virginia Central to make substantial progress, but it was clearly a second-best solution. Perhaps the most pernicious problem associated with state financing was the inability to provide adequate funds quickly. It took the Virginia Central a full decade (1840 to 1850) to build the 17-mile extension from Gordonsville to Charlottesville. The delay is puzzling. No great geographic barrier separated the two towns, and the tobacco and grain of Albemarle would have improved the road's prospects whether the extension was built in 1840 or in 1850. There seemed to have been much early interest in expansion. In March of 1837, the Staunton businessman William Kinney wrote to the Albemarle planter Thomas Jefferson Randolph that the Virginia Central "will in a year or two be extended to Charlottesville" and noted that "many of our citizens are anxious for its extension on to this place" [18].

The bitter urban rivalries that consumed Virginia politics would come to cloud Kinney's crystal ball. State funding was not based upon economic efficiency, but shifting and uncertain political alliances. Every time capital was needed, friends would have to mobilized, allies would have to be found, and enemies would have to be neutralized. The legislative wrangling between Harrisonburg and Charlottesville demonstrated how competing factions could produce delays lasting years. Richmond's eventual support greatly aided the Virginia Central's fortunes, but engendered much opposition from other cities and projects. Richmond's many rivals--Norfolk, Lynchburg and Alexandria--bitterly opposed the project while championing enterprises of their own. The legislative battles over railroad funding became so intense that in 1849 one Norfolk resident declared "I go in for hitchin' teams with the Old North State, for it has long been my notion that Virginia cares little for Norfolk. Huzza for North Carolina and annexation!" [11, p. 205]. Funds were eventually allocated, but only in slow and halting fashion. The slow pace of state investment particularly effected the two state-owned sections, the Blue Ridge Railroad and the Covington and Ohio Railroad. Despite constant complaints from the chief engineer Claudius Crozet, the legislature refused to allocate enough funds to speedily complete the tunnels under the mountains. As a result, the Blue Ridge section was not was completed until 1858, forcing the Virginia Central to build a steep and expensive temporary track. The fate of the Covington and Ohio was even worse. The state did not allocate funds until 1855. As the 1860 annual report of the Virginia Central noted, the initial allocations of $2.3 million spread out over four years were "wholly disproportionate to the estimated cost of the road" [23, p. 109]. Only when the legislature authorized $2.5 million in 1860 could considerable progress be made on the road. When impending Civil War stopped construction in 1861, the Covington and Ohio's chief engineer Charles B. Fisk noted "that there has been ample time since November 1855, when the [initial construction] estimate was made, for the construction of the whole road from Covington to the Kentucky line; but it has not been constructed. As much work, however, has been done on the road as appropriations permitted" [3, 1861, p. xxiii].

In order to circumvent the need for government funds, the Virginia Central often invested its net earnings into further construction. The local interests of the stockholders, however, eventually undermined this policy. As noted above, each extension of the road was financed through a separate stock subscription. Older sections viewed expansion with hostility when it was financed out of the road's current earnings. Using current earnings as capital, the older investors reasoned, led them to forgo dividends in order to underwrite newer investors who had made little sacrifices. To solve this conflict, the company issued dividend bonds that collected interest until they could be redeemed at a later date. The company issued $227,000 in such bonds during the early 1850s, satisfying both newer stockholders, who were happy that current revenues could be used to extend the road, and the older stockholders, who were happy that all investors would share in the costs of expansion.

The issue of dividend bonds, however, underscored the local character of investment that came back to haunt the company's ambitious plans for expansion. An 1858 resolution from the shareholders reported that the railroad had spent "$600,000 in net revenue of the company, derived from working the road east of Staunton" to finish the westward extension of the road. Declaring that this money "rightfully belonged to those stockholders who were incorporated to build the road" only so far as Staunton, the company refused to allocate any additional revenues for further construction [23, pp. 134-36]. Instead, it implored the legislature to allocate additional funds for the road, which was finally done in 1860. In the meantime, the enterprise was stalled in the middle of the mountains, with a terminus "at a point where there is a sparse population, and a very small amount of labor and capital is employed in any of the pursuits of agriculture, with scarcely any of the resources of the country developed" [23, pp. 134-36]. That long-term revenues might be enhanced with the speedy completion of the road had little impact on many stockholders, whose primary motivation for investment was local benefits that depended little upon westward expansion.

The local orientation of stockholders presented other impediments to the road's westward expansion. Richmond stockholders, seeking a trunk line westward, realized that the Richmond to Gordonsville to Charlottesville line was 27 miles longer than a straight Richmond to Charlottesville connection. The added distance and higher grades of the original line would eventually make the road less competitive. In 1855 the railroad's management enthusiastically supported shortening the line, arguing that it would offer "an outlet to our own and the productions of the western states that cannot fail to recommend it to all." But nothing came of the proposal, and the idea quietly disappeared from the company's annual reports. Perhaps the state government refused to supply the needed capital, as the directors had hoped "to procure from the legislature the most favorable aid in its construction" [2, p. 1027]. Another possibility was that the original shareholders in the Gordonsville area objected to being bypassed. In either case, it is clear that Virginia Central's roots as a developmental corporation hindered its efforts to become a true trunk line.

The ultimate result of the Virginia Central's reliance on state funds and local shareholders was a meandering, uncompleted line. The Cumberland Valley Railroad provides important clues as to why the northern systems progressed more quickly. When the company needed new capital, the Philadelphia capitalists responded quickly. When the company wanted to relay the road in 1849, it was able to sell its preferred stock to Philadelphia investors. This decision was somewhat surprising given that he CVRR was in dismal financial straits for most its early stages. By 1843 the financial outlook for the CVRR was so bad that its common stock, with a par value of $50, was selling for a $1.58 per share [12, pp. 323-28]. Yet the Philadelphia investors always felt that careful oversight would eventually bring success. In November of 1850 H. J. Biddle, son of Thomas Biddle, wrote George Cadwalader to attend a meeting concerning "a system of management of the business of our C. Valley Company. I think it is exceedingly important for all our interests that you be present and give us the benefit of your judgement in the decision we shall make" [2].

The rest of Biddle's letter testifies to the hands-on approach of the Philadelphia capitalists. Biddle informed Tyler that Frederick Watts supported Daniel Tyler for the road's superintendent. Biddle considered Tyler an excellent engineer, but thought that he was "a poor accountant and any road under his management would be worked in such a way as to *prevent* the directors *knowing anything about it*." This was an important issue for Biddle, for he wanted an intricate system of accounting that would measure the profitability of every locomotive and car. With such a system in place, Biddle argued, "The Board can compare every department with the best managed roads in the United States and ascertain the causes of any excess of our expenses and how to remedy it. We can act knowingly in all modifications of tolls & fares & see whether the desired effect is or is not produced" Biddle's system was a perfect example of the revolutionary organizational innovations that business historians have associated with northern railroads [2].

Conclusion: The Long-Run Impact

Did the problems of the Virginia Central--its slow progress, its serpentine route, its political intrigues--really have a significant impact on Virginia's economy? Given that Robert Fogel and Albert Fishlow have demonstrated that the railroads made a relatively small impact on the antebellum economy, then the gains from a completed Virginia Central would have been small indeed [7, 8]. Yet the failure of the railroad--and the lack of an integration throughout the Virginia system--made it increasingly difficult for Virginians to diversify their economy. Economic historians have recently correlated technological innovation to access to large markets, so it is not surprising to find that even cities such as Richmond and Alexandria had low patenting rates compared to their northern counterparts [20]. Moreover, the South's antebellum network would slow down its integration into the national economy after the Civil War. Historian Maury Klein has noted that even in the postbellum South, "local interest groups regarded the railroad more as a servant to their region than as a part of some larger coordinated network." The result was that directors tended keep their roads "out of the hands of 'outsiders,' whether northern or southern, whose economic interests were not directly related to the road's territory" [15, pp. 10-11].

While Virginia's railroads would remain relatively underdeveloped, it was clearly not caused by any entrepreneurial deficiencies among Old Dominion's planters and merchants. The rural population of the Virginia piedmont worked exceedingly hard to finance and build the Virginia Central. Unfortunately for Virginians, they had neither the urban population nor the institutional means of supporting integrated trunk lines. The ultimate result was that Virginia was caught in a vicious cycle: its inability to support large cities (largely because of the slavery) hindered the development of its rail network, which in turn hindered urban growth. The failure of enterprises such as the Virginia Central help historians understand why southern railroads, in the stern words of U. B. Phillips, "led to little else but the extension and the intensifying of the plantation system and the increase in staple output" [17, p. 20].

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