

THE GREAT WHEAT/INVESTMENT BOOM:
THE WINNIPEG CONSTRUCTION INDUSTRY, 1896-1914

by

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A Thesis Submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements
for the Degree of

MASTER OF ARTS

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ABSTRACT

The 18 years preceding World War I were years of tremendous growth for Canada, and are often referred to as "the wheat boom." In accordance with the staple theory, the boom was attributed to the production and export of wheat, but a number of authors have examined the matter and concluded that the boom was actually due to a high rate of investment.

The purpose of this thesis is to examine the role of the construction industry in Winnipeg in the context of the boom, and to trace the connections between the staple (wheat), investment, and the construction industry. The development of Winnipeg as a regional centre and the role of the construction industry in that development, as well as the development of the construction industry itself, are also of interest.

The growth of Winnipeg is described, as well as some of the implications of the growth of the staple, especially for Winnipeg in its role as the regional centre. Also described are some of the spin-off effects of capital formation for the construction industry, in particular for the output, employment, and industrial structure of the

industry. Estimates of the employment in the industry, and of the weekly and annual wage bills, are included.

Finally, the conclusion is that the available evidence supports the view that the boom was an investment boom, that the construction industry in Winnipeg made a significant contribution to the boom, and that the industry was greatly changed by the time the boom ended.

INTRODUCTION

The last few years of the 19th century and the first few years of the 20th century were years of considerable change for Canada. Two provinces were added to the country, making a total of nine, and others were enlarged. The population of the country increased by more than 50% in the 18 years from 1896 to 1914, and at the same time, the shift of population from rural to urban areas, begun years earlier, continued, until by the beginning of World War I almost half of the population lived in urban areas.

With respect to Canada, the years leading up to World War I have often been referred to as "the wheat boom." In accordance with the staple theory, the boom was attributed to the production, and especially the export, of wheat, but a number of authors have examined the matter and concluded that the boom was actually due to a high rate of investment in anticipation of the production and export of wheat.

The investment which fuelled the boom took various forms, but a considerable portion of it went to building railroads, especially in the West. Another large part of the investment of those years went to providing the newly

settled North West Territories (after 1905, the provinces of Saskatchewan and Alberta) with the necessary basic houses, schools, roads, stores, barns, etc.

Some other Western cities, little more than villages in 1901, had higher rates of growth during the following decade than Winnipeg did, but among the established cities in Canada, Winnipeg's growth was considered remarkable. In order to provide the additional people with houses, schools, hospitals, stores, offices, factories, warehouses, roads, bridges, water mains, etc., a great deal of construction was necessary.

The purpose of this thesis is to investigate the construction industry in Winnipeg in the context of the wheat boom, and to trace the connections between the staple, in this case wheat, investment, and the construction industry. The development of Winnipeg as a regional centre and the role of the construction industry in that development, as well as the development of the construction industry itself, are the points of particular interest.

Chapter One provides an historical introduction, tracing the story of Winnipeg during the 19th century, from the arrival of the first settlers at a fur trade post through its initial stages of development as a prairie metropolis. Particular attention is paid to the

construction of some of the more significant, i.e. larger and longer-lasting, buildings and other structures that were associated with the early evolution of the construction industry in Winnipeg.

Chapter Two reviews the literature concerning the relationship between the staple and economic growth, and, in turn, the reaction to the "staple boom" which occurred in Canada after 1896. In Chapter Three, I describe the boom and some of the implications of the growth of the staple, in particular the implications for Winnipeg in its role as the regional centre. Chapter Four outlines the development of the general contracting system, and describes some of the spin-off effects of capital formation for the construction industry, especially for the output, employment, and industrial structure of the industry. Estimates of the employment in the construction industry, and of the weekly and annual wage bills, are included. Finally, in Chapter Five I conclude that the available evidence supports the view that the boom was an investment boom, that the construction industry in Winnipeg made a significant contribution to the boom, and that the industry was itself greatly changed by the time the boom ended.

CHAPTER ONE

THE GROWTH OF WINNIPEG THROUGH THE 19TH CENTURY

Indians were visiting and camping at the forks of the Red and Assiniboine Rivers for thousands of years before white men came to the area. The first "permanent" structure erected there, however, was Fort Rouge, built by some of La Verendrye's men in 1738. It was on the north bank of the Assiniboine, but its exact location is now unknown. It was occupied for only about a year, and Morton refers to it as a "depot" (1967, p. 31), so it was likely not a large or well-built structure.

In a paper written in 1927, Bell says that various fur trade records indicate that there were at least two other instances, later in the 18th century, when temporary structures were built near the forks and occupied for about a year. Permanent occupation of the area did not occur, however, until the North West Company built Fort Gibraltar in 1810, although there were apparently a few metis settled along the river nearby. Two years later the first contingent of the Selkirk settlers arrived.

In the early 19th century the Earl of Selkirk became a shareholder of considerable significance in the Hudson's Bay Company (HBC). In order to help some of the poor Scottish crofters who had been forced off the land when their landlords decided to raise the more profitable sheep, Selkirk persuaded the HBC to grant him some land at the forks of the Red and Assiniboine Rivers. The HBC hoped that a settlement at the Forks would be beneficial to the company by providing a source of labour and of food, thus easing some of the Company's problems in keeping its business going.

There was already evidence that farming was possible in the region. As early as 1760 the French had farmed at the trading posts along the Saskatchewan, and at many posts, both HBC and North West Company (NWC), various cereals and vegetables were grown. There were even cattle at some posts, the foundation stock having apparently been brought in via Hudson Bay as calves (Morton, 1967, p. 42). There was already a small settlement at the Forks; some men who had spent their lives in the western fur trade, especially those who had married Indian women, did not want to leave the West when they retired, so they had settled at the Forks and begun farming.

In the late summer of 1812 the first group of settlers sponsored by Lord Selkirk, numbering approximately 100

(Bellan, 1978, p. 3), arrived, and was joined by another 80 or so before the winter (Friesen, 1984, p. 74). The Selkirk settlers initially settled an area they called Point Douglas (Douglas being the family name of the Earls of Selkirk), where the Red River formed a loop a few miles downstream from the Forks. The first years were hard. They survived the first winter on buffalo meat and HBC provisions, and the second winter was little better. The first harvest was "disappointing" (Friesen's word), and provided little more than a supplement to the buffalo meat. Another 85 settlers arrived in July, 1814, (Friesen, p. 74), but the winter of 1814-15 was no better than the first two.

The North West Company, the HBC's competitor in the fur trade in what is now Canada, objected strongly to the establishment of the Red River settlement. The trade war between the two companies was already occasionally erupting into violence, and now the HBC had established a settlement in the way of the North West Company's critical provisioning route between Canada and its posts in the north-west. The Nor'Westers encouraged the local metis to harass the settlers by trampling crops, stealing implements and livestock, and even burning houses.

In the spring of 1815, 140 of the settlers gave up and, at the invitation of the North West Company, headed

for Canada (Friesen, 1984, p. 74). After further harassment by the Nor'Westers the remaining 60 settlers headed for Hudson Bay, but at the north end of Lake Winnipeg the HBC agent overtook them and persuaded them to return. (Friesen indicates that some 275 settlers had left Scotland in the three groups (1984, p. 73-74); even allowing for some deaths along the way, 60 or so settlers seem to have vanished into thin air, or perhaps gone to work for the HBC.)

On June 19, 1816, there occurred the incident often referred to as "the Seven Oaks massacre," although it was not actually a massacre. Governor Semple and 19 of his men were killed by supporters of the NWC in what was later recognized as an accidental encounter. This was the low point in the relations between the settlement and the NWC; from then on, the battle between the two fur trade companies took place in the far reaches of the fur trade regions, along the trade routes, and in the courts.

In 1817 Lord Selkirk visited the settlement, coming via Canada and bringing with him about 90 Swiss and German soldiers of the De Meuron regiment to help keep order and protect the settlement from further depredation. Friesen mentions that there were also some "reinforcements" for the settlers (1984, p. 80), but Morton does not mention any additional settlers.

The first clergymen, Fathers Provencher and Dumoulin, arrived in 1818, bringing with them some French Canadian families, and St. Boniface Church was founded, as was a school. A combination chapel, residence and school was built that year, and the next year a church, measuring 80 feet by 35 feet and built of oak, was begun, although it was not finished until 1825 (Paroisse de la Cathedrale, 1993, p. 3). In 1819 the first Protestant clergyman, the Rev. John West, was sent to Red River by the Church Missionary Society. In that same year, seed wheat had to be obtained from the closest settlement in the U. S., Prairie du Chien, Wisconsin, since the harvest of 1818 had been so poor that the settlers had not managed to even save enough wheat for seed. Wheat of this strain was to supply the settlement for the next 35 or so years.

In 1821, the HBC and the NWC were amalgamated under the name of the Hudson's Bay Company. The years of conflict had weakened both companies and bankrupted Selkirk, who died in 1820 in France. The amalgamation ended the annual brigades from Montreal; for the next 20 or so years, the settlement's few contacts with "civilization" would be largely via Hudson Bay. The conflict between the two companies, which had made life for the settlers so difficult, was ended.

Nicholas Garry, a member of the HBC Committee, visited

the settlement in 1821. He met a party of Swiss immigrants, saw St. Boniface Church, Fort Douglas, and the dismantled Fort Gibraltar, and noted that the settlement had 419 people (221 Scottish settlers, 65 de Meurons, and 133 Canadians), of whom 154 were female (Morton, 1967, p. 61). By 1821 the buffalo hunts which were an important feature of the life of the settlement, particularly to the Metis, had become an organized seasonal activity.

St. John's Church, the first church building west of the Red River, was built in 1823, and a burying ground laid out, on land designated by Lord Selkirk for the purpose. It was a simple log building, but had a steeple. In 1824 it became apparent that the growth of the settlement necessitated the construction of a second Anglican church, and St. Paul's, located 9 kilometres north of St. John's, opened in January 1825. St. Andrew's Church was founded at Grand Rapids in 1827, and St. Paul's was thereafter frequently called Middlechurch.

In 1826 there occurred one of the great Red River floods, the first with which the settlers had to contend. The new HBC fort at the forks had been started in 1822, but after the setback of the flood the Governor, George Simpson, decided to build on a higher site, and Lower Fort Garry, the Stone Fort, was constructed between 1831 and 1839. Construction continued at the Forks as well,

however, and the Upper Fort was finished in 1850.

The flood was the last straw for some of the settlers, and some, particularly the De Meuron soldiers and the Swiss, left later that year for the upper Mississippi valley. Ten years later, however, the population was further supplemented by the arrival of 13 families, farmers from Lincolnshire, who came out to work the HBC experimental farm (Morton, 1967, p. 65).

The economy of the Red River settlement during the 1820's and 1830's was to a considerable degree self-sufficient. The HBC was interested only in exporting furs, so the only market for any surplus agricultural produce was what the company would buy to support its fur trade. There was occasional, very limited, contact with the American settlements to the south, but the HBC largely controlled the transportation and communication routes, and little beyond what was necessary for the fur trade could be imported or exported. For their sustenance the metis relied to a greater degree than the white settlers on the buffalo hunt and on freighting for the HBC, whether by canoe, York boat, or Red River cart; in general, the Scottish settlers concentrated more on farming. In the final analysis however, most of what the settlement wanted or needed had to be supplied from its own resources.

During the 1830s, the two forts were not the only

major construction projects underway. In 1832, construction began on a new church at St. Boniface. This one was built of stone, and was the famous "twin-towered cathedral" celebrated by Whittier in 1859. A new St. John's Church, built of stone, was constructed in 1833.

In 1837 a young stonemason, Duncan McRae, arrived in the settlement. He was hired by the HBC to work for the company for 5 years, but in the end spent the rest of his fairly long life in the region. During the term of his contract with the HBC he did much of the stonework at both the Upper and Lower Forts. Later he built, among other buildings, St. Andrew's Church (1849) and its rectory (1851-54), St. Peter's Church (1853-54), Kildonan Presbyterian Church (completed 1854), Twin Oaks House (1857-58), St. John's Church (1862), Dynevor (the rectory for St. Peter's Church, but located across the river from the church - 1865), Captain Kennedy's house (1866), and Little Britain Church (1874).

By about 1840 the quiet self-sufficiency of the Red River settlement had begun to change. According to the census conducted in 1840, the population was 4704, but the local economy could not absorb this number. With only the HBC as a possible customer, there was no incentive for the farmers to produce increased crops, and no reason for young men to start farming. Given the assumption that farming

was not possible on the open prairies, and that only the land along the rivers could be settled, most of the suitable land was already occupied anyway. The HBC could not absorb the surplus labour, so the only remaining alternatives were emigration and independent trade. The northwest frontier of settlement in the United States was moving ever closer, and for years there was a slow but steady drain of population to the south. Also, alternative trade outlets were coming within the reach of those who were ready to make the effort.

For some years the HBC tolerated a number of small-scale "free traders," but by 1849, the free trading had reached a scale the HBC could no longer tolerate. Guillaume Sayer was tried, at the instigation of the HBC, for trading for furs with the Indians. He was found guilty, but was not sentenced, due in large part to the lack of any effective law enforcement agency. Many of the people of Red River thought that he had been acquitted, and took the "acquittal" to mean that the HBC monopoly was no longer in force. Since the HBC did not try again to enforce its monopoly, trade was indeed effectively free.

In 1848 and 1850 two groups of retired soldiers arrived, in another effort by the HBC to maintain its control over Rupert's Land. With their families, the soldiers added about 200 people to the population of Red

River, but seem to have had little influence over the developing free trade and the relations with the United States (Morton, 1967, p.65).

Several buildings which were significant due to size and/or longevity, were constructed during the 1840s. A court-house was built near, or perhaps in, Upper Fort Garry, in 1843. The first Grey Nuns arrived in 1844, and a convent was built for them in 1846. (This building, now occupied by the St. Boniface Museum, is recognized as the largest oak log construction in North America.) St. Andrew's Church, near Lockport, was completed in 1849, and is still in use.

Through the 1850s, contacts with the outside world, especially the United States, increased. Minnesota became a territory of the Union in 1849 (the population was 6000 by the time the census was taken in 1850 (U. S. Bureau of the Census (1975))). Regular mail service via Pembina began in 1853, and more settlers and traders found their way to the settlement. There were also missionaries, gentlemen adventurers such as the Earl of Southesk and Viscount Milton, collectors for museums, and gold-seekers trying the overland route to reach the gold fields of the Fraser River. Towards the end of the decade, with the HBC charter to trade in the regions west and north of Rupert's Land about to expire, the British and Canadian governments each

sent an expedition to explore the Prairies, and in particular to make recommendations regarding the fitness of the region for settlement. The British expedition, led by Capt. John Palliser, and the Canadian expedition, led by S. J. Dawson and H. Y. Hind, both made significant contributions to the knowledge of the Prairies. All of these visitors were a symptom of the increasing interest which the outside world had in the Prairies, and in turn their reports fuelled even greater interest.

Among the buildings constructed during the 1850s was Seven Oaks House, built by John Inkster in 1852-53 for himself and his family, of oak logs cut at Baie St. Paul and floated down the Assiniboine. Other buildings dating from this period include the first Presbyterian church, Kildonan Church, in 1854, and St. James Anglican Church, (also built of oak logs from Baie St. Paul), completed in 1855.

Another symptom of the changing times was the fact that in 1859, the HBC found that the general trade of its store at Upper Fort Garry was of greater value than the fur trade at that post (Artibise, 1975, p. 8). It was also in 1859 that the first steamboat appeared on the Red River, marking a considerable reduction in the time and effort required to travel or ship goods between the Red River settlement and "the outside." By the following year,

traders from Red River were spending over \$100,000 per year in St. Paul (Artibise, 1975, p. 7).

In 1860 fire destroyed St. Boniface Cathedral and the bishop's residence. The fourth church on the site, measuring 150 feet by 60 feet, was built in 1862/1863 (Paroisse de la Cathedrale, 1993, p. 3), and the bishop's house was completed in 1864. Also, St. John's Church had been badly damaged in the 1852 flood, and was replaced by a new stone building, built by Duncan McRae and his associate, John Clouston, in 1862.

By 1862 there were at least twelve independent businesses clustered around Upper Fort Garry (Artibise, 1975, p. 9). In that year, the owner of one of those businesses, Henry McKenney, decided to build a general store where the trail paralleling the Assiniboine River intersected the trail along the Red River, now the corner of Portage Avenue and Main Street in downtown Winnipeg. A few others soon joined him there, and in 1866 the name "Winnipeg" was first used (by the newspaper "Nor'Wester") to distinguish this cluster of buildings from Upper Fort Garry, Point Douglas, and the rest of the settlement. By late 1870 the community had about 30 buildings and a population of approximately 100 people (Artibise, 1975, pp. 10, 12).

A necessary condition for the development of a modern

economy is the use of money in the exchange of goods and services. It is not clear when and how the replacement of barter by money came about in the history of Winnipeg. Some of the visitors who passed through during the 1850s and 1860s may have made some of their payments for goods and services in cash, but it is also possible that when the surviving records of such travellers indicate the payment of a wage or the purchase of goods, what was being transferred from buyer to seller was a credit at the Hudson's Bay store, rather than cash. Spry (1968) indicates that Indian treaty payments and payments made on government contracts, both of which began in the 1870s, were probably the initial occurrences which brought money into the settlement in sufficient quantity that a cash economy could begin replacing the barter economy.

The 1860s were a period of uncertainty about the future of the settlement. It was apparent that the fur trade was waning and the future of the region lay in agriculture. It had been obvious since the Sayer trial in 1849 that the HBC had minimal power to act as a government, but what would replace it? The people of Minnesota were interested in expansion northward, but received little support from the rest of the United States. Great Britain at this time regarded colonies as burdens, and was not interested in another one. Only the people of Canada were

interested, but in the negotiations between Great Britain and Canada about the terms of the transfer, there seems to have been little awareness that this was anything more than a land transfer, that there were people involved. The people of the Red River settlement were not consulted, or even informed, about the terms or the progress of the negotiations. They were left to worry, in particular about the security of their title to the land they occupied. In addition, the French-speaking, Catholic people were concerned about losing their language rights and their freedom to practice their religion. In the fall of 1869, before any agreement on the land transfer had been reached, a Canadian surveying party arrived and began to survey the land. A group of young, unarmed Metis confronted them and stopped them, then occupied Upper Fort Garry and set up a provisional government under the leadership of Louis Riel. Representatives were sent to Ottawa to negotiate the terms of the settlement's new relationship with Canada; the result was the Manitoba Act of 1870, which gave Manitoba provincial status and confirmed political rights, existing land titles, the use of the French language, and separate state-supported Catholic and Protestant schools.

The province of Manitoba came into being with the proclamation of the Manitoba Act in July, 1870, and Upper Fort Garry became the seat of government. The government

agencies established in and around the Fort, and especially the garrison stationed at the Fort, provided Winnipeg with its initial impetus to growth. By the time that Winnipeg was incorporated as a city, in 1874, it was impossible to distinguish the settlement which had begun at Portage and Main from that which had begun around the fort, and Winnipeg had more than 900 buildings (Artibise, 1975, p. 12) and a population estimated at anywhere from 2000 to 3700 (Bellan, 1978, p. 9).

The settlement of the Prairies required a large amount of lumber, and the lumber industry was the first, and for some years the largest, of Winnipeg's industries. The wood initially came from Minnesota, being floated down the rivers flowing west to the Red, and from there downstream to Winnipeg. By 1872, there were several saw mills in operation in Winnipeg, among them those of Macaulay, Sprague, and Co., and of Dick and Banning. Brown and Rutherford, later to be one of the largest suppliers of building materials in the city, opened in 1872 as a cabinet and carpentry shop. Once the CPR was built, lumber was obtained from along the Winnipeg River. By 1892, however, mills were operating closer to their supplies of raw materials, and only one saw mill remained in Winnipeg (Morton, 1967, p. 264).

After the flurry of growth between 1870 and 1873 the

pace slowed, but there were still a number of signs over the next few years that economic development was continuing. The Fort Osborne Barracks were completed in 1872, and the troops moved out of Upper Fort Garry. The St. Boniface woollen mills were started by George MacVicar in 1873, and the Vulcan Iron Works was built in 1874. Also in 1874, one of the first acts of the new city council was to approve a bond issue for \$250,000, to finance the construction of a new city hall and a wooden sewer system. In 1876 the Chambers biscuit factory opened, and in the same year the province for the first time produced a surplus of grain and the first commercial export of wheat was made, 857 bushels being shipped to Toronto via steamboat to Moorhead, Minnesota, and by rail from there (Morton, 1967, p. 182). Manitoba finally obtained rail service in 1878, when the "Pembina branch" line reached St. Boniface from the U.S. border, and in 1880 the first grain elevator in the province was built, also in St. Boniface.

One significant development of 1881, which was not at first glance an economic development, was the extension of the borders of the province. The southern boundary remained at the U.S. border, but the new western boundary was set at the 29th range of townships (where it has remained), and the northern at the 53rd degree of latitude. The new eastern boundary would be the western border of

Ontario, which in 1884 was settled as being a line running north from the North West Angle. This change increased the area of the province to 73,956 square miles, and added some 16,000 people to the population (Morton, 1967, p. 197).

For many years the citizens of Winnipeg, led by the merchants, had been struggling and negotiating to bring rail service to the west side of the Red River, in particular to persuade the CPR to build its main line through the city. In the summer of 1881 the city offered the CPR a bonus of \$200,000, free use of the Louise Bridge (constructed the previous year for \$300,000), and exemption from local taxes in perpetuity, and the railway accepted the offer (Artibise, 1975, p. 73).

The CPR main line was already under construction in eastern Manitoba, and the activity had touched off a boom in Winnipeg. Word that the main line would definitely go through Winnipeg simply increased the frenzy. In 1880, there were 400 buildings erected in the city, for a total cost of approximately \$1,000,000; in 1881 the figures were 700 buildings, and \$2,000,000; in 1882, there was more than \$3,000,000 worth of construction. The local property assessment went from \$4,000,000 in 1880, to \$8,000,000 in 1881, to \$30,000,000 in 1882. In the fall of 1881 there were almost 1000 houses under construction, while the CPR spent \$1,000,000 on a passenger station, freight sheds,

etc. During the boom local lumber mills employed about 700 people; metal works, and carriage and wagon-making employed about 300; and the clothing industry, producing mostly work clothes, employed about 200. In 1881 the city spent \$125,000 on street improvements, and in addition built a new city hall, several fire stations, and other buildings, as well as the first bridge across the Assiniboine River (at Main Street). In 1882, the city spent \$116,000 to build new schools, while gas lighting was introduced, two miles of street railway were built, and over \$65,000 was spent to build new churches. By this time, most businesses had had telephones installed (Bellan, 1978, pp. 28-30).

When Winnipeg was incorporated in 1874, it had an area of 3.1 square miles, the boundaries being the Red River on the east, the Assiniboine River on the south, Maryland Street, Notre Dame Avenue, and McPhillips Street on the west, and Selkirk Avenue on the north, with an extension north to Inkster Boulevard between Main Street and the Red River. Only a small part of this area, however, was built up. The excitement of the boom of 1881/82 resulted in the annexation of large areas to the north, west, and south, bringing the official limits to, on the south, Parker and Wilkes Avenues, on the west, Kenaston Boulevard and St. James and Keewatin Streets, and on the north, Inkster Boulevard. Some relatively small annexations in 1906,

1907, and 1914 brought the area of the city to 23.6 square miles (Artibise, 1975, pp. 133-136), so the area after the annexations of 1882 was probably about 20 square miles.

The boom collapsed, as booms do, in the spring of 1882. Among the factors contributing to the collapse were the completion of CPR construction in the area, and the significant flooding along the Red River that spring. Construction continued at a slower pace, however, and the buildings completed during the next few years included Holy Trinity Church and the Cauchon Block (the first apartment block built in the city, later to be the Empire Hotel) in 1884, Government House and the new city hall in 1885, and the post office in 1886. Two more bridges were built as well, both in 1883--the Broadway Bridge, across the Red River, and the Osborne Street Bridge across the Assiniboine. The Broadway Bridge was washed away in the spring flood of 1884, and had to be replaced only a year after it was first built.

Economic growth continued at a much reduced level from the mid-1880s to the mid-1890s. Relatively few settlers arrived to take up land on the Prairies during those years, and as a result the period was generally one of consolidation. The world-wide economic depression, which began about 1873 and lasted until 1896, was mitigated in Canada during the early 1880s by the intense activity

accompanying the construction of the CPR main line, but once that line was completed, the activity slowed, and the depression was felt again. The price of wheat in 1887 fell to the lowest level in a century (Morton, 1967, p. 210), and the Prairies had below-average rainfall during the growing seasons, and therefore below-average crops, from 1889 to 1897 (Morton, p. 254). Railway construction continued with improvements along the main line and the construction of some branch lines--a line built north from the main line reached Yorkton in 1890, and another reached Prince Albert via Saskatoon the same year, while the Calgary-Edmonton line was completed in 1891. However, other lines were proposed or planned, but not built until later, due to the lack of funds and the lack of prospective traffic.

Economic activity in Winnipeg has always been directly related to economic activity on the Prairies, and when settlement and railway construction on the Prairies slowed, so did the activity in Winnipeg. Even so, a number of significant buildings were constructed--Fire Hall no. 1 in 1890, Norquay School in 1892, the Stovel Building in 1893, St. George's Church in 1894, and the Davis Building and the Court House in 1895. Also, a third bridge across the Assiniboine River, the Maryland Bridge, was built in 1894.

Thus, by 1896, Winnipeg was an established city with

31,649 permanent residents, according to the federal census figures, while the City Assessment Office figures, which included the transient population, gave a population figure of 37,983 (Artibise, 1975, p. 130). It was linked to the rest of Canada, both east and west, by the main line of the CPR, and to the U.S. by the original "Pembina branch" railway, while several other branch lines led south, west, and north-west to the rest of Manitoba and into the North-West Territories (NWT).

Manitoba in 1896 had a population of approximately 190,000 people, and most of the land available for homesteading in the province had been occupied, although much unoccupied land was still available for purchase from the HBC, the railroads, or speculators. Little settlement had yet occurred in the NWT--in 1901, the population of the area which would become the provinces of Alberta and Saskatchewan was only 164,000 (Census, 1916). Almost all of the people who would settle the NWT, and almost all of the farm implements, household furnishings, lumber, tools, hardware, livestock, business equipment, store inventories, food and clothing which they would need to establish new farms, homes and businesses, would have to pass through Winnipeg. Most of the grain and livestock being produced on Manitoba farms had to be shipped to market via Winnipeg, as would those to be produced on the future farms of the

Territories.

Winnipeg was the metropolis of western Canada, the repository of skills and talents, as well as capital and equipment, which were scarce or non-existent in the rest of the region. Winnipeg banks provided capital for buildings and other construction projects across the west, and Winnipeg contractors and construction companies built them. Retailers throughout the west were supplied by wholesalers whose offices and warehouses were in Winnipeg, and until 1906 the University of Manitoba was the only university in western Canada. The city had substantial brick and stone buildings, paved streets, two bridges across the Red River and three across the Assiniboine River, electric lighting, an electric street railway, telephones, and running water, as well as hospitals, factories, luxurious hotels, and theatres and other recreational facilities. Winnipeg in 1896 was already the "Chicago" of western Canada, although on a much smaller scale than the real thing, in the sense that it was the "gateway" to the west, and the transportation, financial, and commercial centre--indeed the only centre--of a largely undeveloped region. All the necessary ingredients were present, and it needed only the impetus of large numbers of people moving in to settle the west within a short time, to make Winnipeg known to the rest of Canada, and beyond the borders, as "the Chicago of

the North."

CHAPTER TWO

THEORETICAL BACKGROUND

In a 1963 paper, M. H. Watkins examined the staple theory as an instance of a theory which is applicable to the particular case of a new country. New countries are distinguished from other countries by having a favourable person/land ratio, and an absence of inhibiting traditions.

(Watkins does not specify what would be inhibited, but since the topic of the article is economic growth, it seems safe to assume that that is what would be inhibited.)

Harold Innis, the original proponent of the staple theory, first described staples in 1930 (in connection with the trade between a colony and its mother country) as "goods which could be carried over long distances by small and expensive sailboats and which were in such demand in the home country as to yield the largest profit" (Innis, 1967, p. 17). Since then, the term "staple" has come to mean a natural-resource intensive product or commodity, generally unprocessed or with minimal processing, and produced chiefly for export.

The fundamental assumption of the staple theory is that staple exports are the leading sector of the economy and set the pace of economic development. The central concept is the impact of export activity on the domestic economy, i.e. the spread effects of the export sector.

If the resource base of the new country is given, and the rest-of-the-world environment--the international demand for the supply of goods and factors, the international transportation and communication systems, the international power structure--is also given, the sole remaining determinant of the spread effects is what Innis called the character of the staple. The character of the staple is now generally understood to mean the technology of the industry, or the production function.

With the production function and the necessary ceteris paribus assumptions--e.g. the demand for goods, the supply of factors, the institutional framework--specified, some other things follow: the demand for factors, the demand for intermediate inputs, the possibilities for further processing, and the distribution of income. These determine the range of investment opportunities which are available in the domestic markets, that is, the extent of possible diversification around the export base. The possibilities of such investment can be separated into three linkage effects: backward linkages, forward linkages,

and final demand linkages. In this way, the staple theory becomes a theory of capital formation.

The final demand linkage, or the measure of the inducement to invest in domestic industries producing consumer goods for the domestic market, will tend to be higher, the higher the average level of income and the more equal its distribution.

The expansion of the export creates investment opportunities which may or may not be realized, depending on the supply of entrepreneurship and complementary inputs. An adequate supply of domestic entrepreneurship is crucial, and its effectiveness depends on the availability of labour and capital.

In order to be historically relevant, a theory of economic growth must allow for the differing characters of various staples and also for the impact of the resource base of the new country and for the impact of the international environment. Sustained growth requires the ability to shift resources at the dictates of the market, to not concentrate resources in the export sector to the detriment of domestic development.

In 1896, when the Liberals under Wilfrid Laurier won the general election and took over the government of Canada, the country, and the world, were just beginning to recover from over twenty years of generally poor economic

conditions. Canada had seven provinces, a population of 5,074,000, and a GNP (in constant 1900 dollars) of \$680,700,000. Eighteen years later, by the time the first World War began in 1914, there were nine provinces, 7,869,000 people, and a GNP (also in constant 1900 dollars) of \$1,835,600,000. (Urquhart, 1993, Table 1.6).

The shares of some sectors of the economy in the total GNP also changed appreciably over the period. Agriculture's share fell from 24.6% in 1896, to 19.5% in 1913. Manufacturing's share also fell slightly, from 21.7% in 1896 to 19.5% in 1913. Transportation and construction rose considerably, from 6.8% to 9.3% for the former, and from 3.1% to 8.3% for the latter. The shares of most other sectors remained relatively unchanged. (See Tables 2.2 and 2.3).

For many years it was accepted as "given" among economic historians that there was a "Great Depression" in Canada between Confederation and the end of the 19th century, and a "wheat boom" in the early years of the 20th century. The wheat boom was regarded as strong evidence of the positive effects of staple exports.

There is little room for doubt that there was a boom in the Canadian economy in the first decade of this century. The Concise McGraw-Hill Dictionary of Modern Economics defines a "boom year" as a year "in which the

physical volume of goods and services and industrial production rises sharply (more than 4.5%)". The real GNP for the years 1896 to 1914 is given in Table 2.1. If one applies the figure of 4.5% to the figures for the growth of the Canadian GNP, then the years from 1897 to 1912 inclusive, except for 1898, 1903, 1904, and 1908, were boom years, and 1898, 1903, and 1913, were close to being boom years.

However, whether or not the boom was attributable to the production and export of wheat has been questioned. Chambers and Gordon (1966) developed a model attempting to quantify the contribution of staple exports to economic growth, and applied the model to a classic staple period, the "wheat boom" on the Canadian prairies between 1901 and 1911. They concluded that there was no wheat boom; there was a boom, but it was not based on wheat. Dales, McManus and Watkins (1967) did not accept the model; they thought that it was too simple, and that Chambers and Gordon should have looked at what had happened to national income, not per capita income. Caves (1971), Grant (1974), and Lewis (1975) accepted the model, but thought it was not properly specified--it needed to consider additional factors. Bertram (1973) also accepted the model, but thought that Chambers and Gordon had used the wrong figures in their calculations. Caves, Bertram, Grant and Lewis all

concluded that their results tended to support the view that there was indeed a wheat boom in Canada in the first decade of the 20th century.

Later writers did not use the Chambers and Gordon model. Robert E. Ankli examined Canadian economic growth between 1896 and 1920 in a paper published in 1980, which included new estimates of GNP from 1900 to 1920 (p. 270). He concluded that between 1896 and 1900 there was an increase in the export of agricultural and other staple products (forestry products and iron and other metals). Between 1901 and 1911, there was a rapid increase in labour and capital supplies, which increased per capita growth. This supply side growth made possible a rapid increase in exports after 1910, but there was no wheat boom in the first decade of the twentieth century which made any substantial contribution to per capita growth. Ankli cited Kravis' tests for the importance of exports in economic growth, and applied them to the Canadian situation. "The results present a mixed bag if one is restricted to examining 1901-1911 ... the tests do support export-led growth if the time period is expanded to include the years 1896-1920 and if one agrees that the investment boom from 1900 to 1910 was a cause or an anticipation of the growth in exports that was to occur after 1910" (p. 260). Ankli pointed out that real investment as a percentage of real

G.N.P. increased from 20.7% in 1900, to 22.2% in 1901-1905, to 29.6% in 1906-1910, and to 32.6% in 1911-1915, before starting to fall (1980, p. 254). He explained the boom as a result of the wave of immigrants; most of these entered the work force, resulting in an increase in labour force participation rates, which in turn caused an increase in per capita income.

Morris Altman (1987) presented revised estimates of real gross manufacturing output and growth, and of real value added. His estimates refuted the view that the Canadian manufacturing sector grew fairly steadily and vigourously from 1870 to 1910. His work supported the work of earlier economic historians, such as Skelton and Buckley, who thought that Canadian manufacturing had performed poorly in the years following Confederation, not taking off until 1896. The decade of the 1880s was somewhat better than the 1870s or the 1890s, but the decade from 1900 to 1910 was much better than any of the previous three decades.

In a 1985 publication in which he presented new estimates of the Canadian national accounts for the years 1870 to 1926, M. C. Urquhart pointed out that there seems to be some confusion as to whether "economic growth" means growth in total GNP (extensive or aggregate growth), or whether it means growth in GNP per capita (sometimes

referred to as intensive growth). He concluded that those who think that Canada was growing significantly in the last three decades of the 19th century are at least partly right--there was considerable growth in gross national product per capita from 1870 to 1900 even with the relatively slow aggregate growth. During that period, the United States outstripped Canada by a sizeable margin in growth rates of population and aggregate real GNP, but the situation changed in subsequent years. Canadian population growth rates exceeded those of the U. S. from 1900 to 1920, and matched the American rate from 1920 to 1926, while extensive growth of GNP in Canada exceeded the American rate from 1900 to 1910, and also from 1920 to 1926. Urquhart agreed that the boom of the pre-World War I years was an investment boom.

"That a major part of the growth was associated with the settlement of the prairies, and definitely based on the objectives of growing wheat is clear. The stimulus came first through the enormous induced investment of the 1900 to 1915 years and then in the 1920s with the export flow of wheat and concomitant the realization of the gains of international specialization." (p. 22)

Mackintosh also agreed that the boom was an investment boom, although the prospect (not the actuality) of producing wheat was an important component:

"The most fundamental single characteristic of the period was a high rate of investment induced by improved expectations of profit from the

exploitation of natural resources which had been newly discovered, newly tapped by the extending railways, subjected to new productive techniques, or converted into profit possibilities by favourable shifts in costs and prices. Overwhelmingly most important were the wheat lands of the Prairie Provinces. Prospective profitableness in the exploiting industries created markets for other industries and for a time investment fed on itself." (as cited in Urquhart, 1985, p. 11)

The consensus is that, beginning about 1896, there was a boom which was basically fed by wheat. It was not, however, the actual production and sale of wheat that fuelled the boom, but the expectation of doing so. This expectation led to the settlement of the prairies and the construction of the infrastructure necessary to support the production and export of wheat. The investment which was required to create that infrastructure was the immediate cause of the boom.

The construction of the railways, a backward linkage, was a very large item of expenditure in the creation of the infrastructure necessary to support the production of wheat. The construction of houses, roads, schools, public buildings, commercial buildings, etc.--all final demand linkages--made up another large part of the expenditure of the time. Since the construction industry is a major player in an investment boom, the patterns of expansion and contraction in the industry are likely to echo those of the economy as a whole.

CHAPTER THREE

THE BOOM

There were many changes, and they were big changes, in Canada between 1896 and 1914, whatever the actual cause of the "wheat" boom. As was mentioned earlier, the population increased from 5,074,000 to 7,869,000, which is an increase of 2,795,000, or 55%. The population in 1901 was 5,371,000, and in 1911 it was 7,207,000, for an increase over only 10 years of 1,836,000, or 34%, giving an average annual rate of growth of 2.8%. In the 1880s it had been only 1.2%, and in the 1890s it was even less, 1.0%. (Urquhart, 1993, Tables 1.6 and 1.7).

The labour force grew from 1,885,000 in 1901, to 2,799,000 in 1911, for an increase over the decade of 48.5% (figures from Leacy, Table D122; my calculation), considerably greater than the increase in the general population. The participation rates also increased, from 33.2% to 37.8 per cent for Canada as a whole (Ankli, 1980, p. 264). The rates for the Maritimes and Quebec were almost unchanged, but for the rest of the country there

were some significant increases. The rate for Ontario rose by 4.7%, that for the Prairies by 9.3%, and that for British Columbia by 7.0%.

Between 1896 and 1914, over 2 million people immigrated to Canada (Stelter, 1982, p. 24), while between 1901 and 1911, immigration totalled 1,550,000. (However, emigration had also increased significantly, to 739,000, giving a net figure of 811,000. (Canada year book, 1994, p. 113).) Ankli indicated that of all the immigrants who came to Canada between 1901 and 1914, over 65% came between 1907 and 1914, and in spite of the common perception that the Prairies were the destination of most immigrants at that time, in actuality Quebec and Ontario were the most popular destinations. In the years 1901 to 1905, well over half of all immigrants from overseas listed their destination as the Prairies, but between 1911 and 1914, 45.8% gave their destination as either Quebec or Ontario, while only 35.7% were heading for the Prairies (Ankli, 1980, p. 262).

At the same time, Canadian cities were also growing, due to increasing urbanization as well as immigration. In 1891, only 29% of the Canadian population had lived in urban areas; by 1901, the figure had risen to 38%, by 1911 it was 45%, and by 1921 it was 49.5% (Ankli, 1980, p. 263). This was in part due to the annexation by cities of

adjoining suburban areas, but only in part; the mechanization of farming, and the consequent reduction in the size of the agricultural workforce, was also a factor. Toronto, for example, increased its area by four times between 1880 and 1914 (Stelter, 1982, p. 25), and in the first decade or so of this century, its population was growing at a faster rate than that of the country as a whole, which in turn was growing faster than the population of Ontario (Spragge, 1979, p. 247).

The real GNP per capita in 1900 dollars had risen from \$134 in 1896, to \$182 in 1901, to \$246 in 1911, and to \$233 in 1914 (it had actually peaked at \$259 in 1913) (Urquhart, 1993, p. 25). As Ankli pointed out, however, immigrants had a higher rate of participation in the labour force than did the native population, which raised the participation rate of the total population. This tended to raise the per capita income; Ankli's figures indicated that, if participation rates had remained unchanged, the rise in per capita income would have been only half as great (1980, p. 263).

One effect of the increased immigration, together with the internal migration, was that large amounts of population-sensitive investment, especially housing, were required, and this kept the economy growing at a rapid rate. Ankli, using Buckley's estimates, calculated that

housing investment rose from 17.3% of gross domestic capital formation in 1901-1905, to 20.5% of GDCF in 1906-1910 (1980, p. 263). Pickett indicated that the residential stock at the end of the census year 1901 was 1,064,000 units, while at the end of 1911, it was 1,529,000 units, for an increase of almost 50% over the decade (1963, p. 44).

Another form of investment which was significant during this period was in railways. It was in the years immediately before World War I that Canadian railways underwent their greatest expansion, as indicated in the following tables.

Net Additions to Railway Mileage

Years	Miles
1896-1900	1680
1901-5	2830
1906-10	4244
1911-15	10,151

(Source: Buckley, 1974, p. 45)

Net Additions to Rolling Stock

Years	Locomotives	Freight cars	Passenger cars
1896-1900	250	12,557	-514
1901-5	633	21,577	496
1906-10	1,173	28,616	1,190
1911-15	1,407	82,077	2,006

(Source: Buckley, 1974, p. 45)

Improvements were also being made to the existing system, by such means as the reduction of gradients, the improvement of roadbeds and alignments, the replacement of iron with steel rails, and the replacement of smaller locomotives and freight cars with larger ones.

Public investment was also important during this period, as shown in the following table.

Direct Investment by Governments

Years	(\$ millions)
1901-5	94.0
1906-10	247.9
1911-15	439.7

(Source: Buckley, 1974, p. 82).

In the years from 1900 to 1915, the federal government accounted for some 60% of all public investment in Canada, the federal railway program being the major item. Direct expenditures on railway construction averaged \$3 million per year before the construction of the National Transcontinental, but rose to an average of \$20 million per year for the 10 years ending in 1915 (Buckley, 1955, p. 81).

There was a similar increase in municipal expenditures, and an even greater increase in provincial expenditures. From 1906 to 1915, the governments of the

three prairie provinces accounted for 40% of all provincial expenditures, in providing those provinces with the basic infrastructure--legislative and administrative buildings, universities, hospitals, court houses, jails, etc.--already in place in the older provinces. The other major expense for the provinces was roads. From 1901 to 1905, when the responsibility for roads was still mainly a local matter, the provinces spent only \$5 million. From 1911 to 1915, they spent \$38 million. The provinces also invested heavily in public utilities; Buckley estimated that, between 1906 and 1915, the expenditures on provincially owned utilities equalled approximately 60% of the expenditures on direct investment (Buckley, 1955, p. 83).

Urquhart's figures for total Gross Fixed Capital Formation (see Table 3.1) indicate that not only were the absolute amounts rising until 1913, but the ratio of gross fixed capital formation to gross national product was also rising, from 0.115 in 1896, to a peak of 0.341 in 1912.

The West changed even more than the country as a whole in the 18 years before World War I. In 1896, the province of Manitoba had a population of 193,425 (Census of prairie provinces, 1916, Table 1), and an area of 73,956 square miles. The population does not seem to have been counted in 1896 in the region which in a few years would become the provinces of Saskatchewan and Alberta, but in 1901 this

region had a population of 164,301. In 1905 the eighth and ninth provinces were created; Saskatchewan was given an area of 251,700 square miles, and Alberta was given 255,285 square miles (Canada year book, 1970-71). The populations of the three Prairie provinces in 1901, 1911, and 1916 are shown in the following table.

Population of the Prairie Provinces

	1901	1911	1916
Manitoba	255,211	461,394	553,860
Sask.	91,279	492,432	647,835
Alberta	73,022	374,295	496,525

(Source: Census of prairie provinces, 1916, Table 1)

In 1912 Manitoba's borders were extended once again, and the province reached its present size of 251,000 square miles.

By 1896 most of the land available for homesteading in Manitoba had been occupied; much land was still unoccupied, but it was in the hands of the Hudson's Bay Company, the railroads, or speculators, and had to be purchased. What land was still available for homesteading was too wet or dry, had too many rocks or trees, and/or was too far from a rail line. In 1896 the railway, in the form of the Lake Manitoba Railway and Canal Company, later to be part of the Canadian Northern Railway, reached Dauphin, and opened that

region to settlement. The same rail line reached the Swan River valley in 1899, and by the end of that year the region, and Manitoba, were settled.

In the late 1890's, several factors combined to encourage the settlement of the area which would in 1905 become the provinces of Saskatchewan and Alberta. The world-wide depression of the previous twenty years was ending. The costs of transportation, whether of grain eastward or of people westward, were falling, and the price of grain was rising. The gold discoveries in the Klondike and South Africa increased the world supply of gold and thus eased credit. The American frontier closed, and soil exhaustion in older areas increased the costs of production there. Technological innovations, such as summer-fallowing, barbed-wire fencing, and earlier-maturing strains of wheat, made it possible that dry-land farming would be profitable.

The reductions in the costs of transportation were, in some cases, quite dramatic. The cost of moving a bushel of wheat from Regina to Liverpool in 1886 was 35 cents, but by 1906 it had fallen to only 21 cents, which increased the value of wheat at its point of production in western Canada by about 20 per cent. The cost of passage from Europe to North America had also fallen, and by 1906, the price of steerage accommodation on a ship, plus a special rate for

settlers on the railway, meant that the cost of a ticket from Liverpool to Winnipeg was only 30 dollars. (Bellan, 1978, p. 60, 64)

Many of the settlers came with practically no capital, but many others, especially those from the U.S., brought considerable amounts of capital with them. These American settlers, many of whom were ex-patriate Canadians or the children of ex-patriates who had left Ontario a generation earlier and pioneered on the American plains, could sell their farms for as much as \$75 per acre, and buy land in the North-West Territories for as little as two or three dollars per acre, or homestead for even less (Bellan, 1978, p. 62). Not only were these settlers already familiar with the language, climate, and social institutions, but they also brought considerable experience with dry-land farming. Last but not least, they brought in capital; Bellan cites one source which indicated that American immigrants to Western Canada spent 300 million dollars between 1898 and 1907 buying and developing farm lands and cattle ranches, building grain elevators, and developing mine and timber limits, in addition to the improvements which they carried out on homestead land. (Bellan, 1978, p. 62)

Over 800,000 people immigrated to Canada between 1897 and 1906 (Bellan, 1978, p. 64), but labour shortages were still persistent. Not only was the West being opened up,

with labour needed for farm operations, railroad construction, and the construction in the cities of houses, factories, etc., but the economy across the country was generally active. One problem in the West was that harvest time coincided with the peak of employment in other fields, so the extra labour needed could not be obtained from other occupational groups. The C.P.R. therefore began its famous annual "Harvesters' Excursions" from eastern Canada, bringing men west to help with the harvest. Many of these stayed to homestead, or to augment the general labour force. Extra labour could also come from the U. S., where not only was the population larger, but the harvest occurred at a different time. The Canadian government was successful in recruiting harvest help in the U.S. in 1901, when a bumper crop meant that an extra 15,000 men were needed. (Bellan, 1978, p. 65)

During the decade from 1897 to 1906, homestead entries totalled 174,291, or nearly three times the total recorded in the 22 years from 1874, when homesteading began, to 1896 (Bellan, 1978, p. 65). From 1907 to 1916, homestead entries totalled 306,324 (figures from Leacy, 1983, Series K 34,36,38,40--my calculations).

Over 600 new towns with populations of at least 100 people mushroomed on the prairies between 1900 and 1916, with hundreds of smaller villages growing up between. The

railway companies founded most of the towns; the C.P.R. alone built hundreds of villages (it claimed to have established nearly 800, and that sales of urban real estate totalled some \$16 million) (Voisey, 1975, p. 83).

A great deal of railway construction took place during the years before World War I, not all of it with the intention of providing rail services to the areas through which the lines passed. Extensive construction by both the C.P.R. and the Canadian Northern was providing the West with a more or less adequate system of branch lines, but the single C.P.R. trunk line between Winnipeg and North Bay was unable to carry the volume of western produce to the east. In 1902 the Canadian Northern completed a line from Winnipeg to the Lakehead via Rainy River, and announced its intention to build a transcontinental line, just a day after the Grand Trunk Railway had announced a similar intention. In 1905 the C.P.R. began double tracking its line from Winnipeg to Fort William. Both of the new transcontinental lines were built over the next decade or so, and both, like the C.P.R. transcontinental line, passed through Winnipeg.

A considerable portion of the Canadian economic activity of the first decade of the 20th century was the building of the railways, not just the two transcontinental lines, but also the various branches and feeder lines. In

just one year, 1904, the Canadian Northern graded 550 miles and laid 413 miles of track, while the C.P.R. opened 197 miles of track, graded 75 miles, and carried out improvements to existing lines, such as reducing grades and straightening tracks. In 1906 there were 4600 miles of railroad in operation between Winnipeg and the Rocky Mountains, an increase of 1085 miles over the previous year. (Bellan, 1978, p. 68)

Labour was in chronically short supply, in spite of the heavy immigration of those years, and steel plants were working at top capacity. Even during the recession of 1907-08, one estimate indicated that there were 60,000 men working on railway construction in the North-West (Bellan, 1978, p. 88). In 1910, the manager of the Grand Trunk Pacific complained that his company required 8000 men for construction through the Rocky Mountains, and had only 4500 (Bellan, 1978, p. 99). At times, progress slowed due to the shortage of labour and/or materials. Particularly heavy construction activity occurred in 1912, and steel and cement supplies failed to meet the demand, causing numerous delays (Bellan, p. 99). Some bridges on the new rail lines, which should have been made of steel, had to be made of wood, due to the shortage of steel. They were later replaced with steel.

Some settlement had taken place in the North-West

Territories before 1896, but not much. The total population of the North-West Territories in 1901 was 164,000, while by 1911 it was 867,000 (Voisey, 1975, p. 85). Approximately 500,000 people entered the region during the decade, and almost every one of them passed through Winnipeg. Almost all of the farm implements, household furnishings, livestock, business equipment, store inventories, food and clothing which they needed to establish new farms, businesses, and homes also passed through Winnipeg, as did the grain and livestock which they produced.

In 1896, the city of Winnipeg had some 38,000 people (Table 3.2), according to the City Assessment Office figures, which counted everyone in the city at the time the census was taken. Federal census figures indicated that the population was 31,649, but this census counted only permanent residents (Artibise, 1975, p. 130). The built-up area extended from the Forks downstream along the west side of the Red River to Point Douglas, and upstream along the Assiniboine River to Armstrong's Point. Away from the rivers, it extended in the west to approximately Maryland and McGregor Streets, and in the north to Selkirk Avenue. South of the Assiniboine River, it extended from the Forks south and west to the vicinity of Corydon Avenue and Nassau Street. There were two bridges across the Red River, and

three across the Assiniboine. The city was served by an electric street railway system, and telephones, electric lights, and running water were available.

Winnipeg in 1896 had an area of approximately 20 square miles. The built-up area, however, was only a small part of the official area; it just about coincided with the area of the city as it had been in 1874, i.e. 3.1 square miles. In 1906, 1907, and 1914, a few relatively small annexations increased the area to 23.6 square miles. By 1914, the population had quintupled, reaching 203,255 (according to the City Assessment Office; federal census figures gave a population of 163,000 in 1916) (Artibise, 1975, p. 130), and the built-up area came close to covering the whole of the official area, with growth spilling over into the suburbs.

Over the years from 1900 to 1914, 37,042 building permits were issued by the City of Winnipeg, representing 44,151 buildings, at a total cost of \$149,134,470 (see Table 3.3). The \$9,651,750 of building permits issued in 1904 was a greater value of permits than was issued in any other city in Canada that year; Toronto was second with \$5.9 million. The next year, 30 apartment blocks were constructed, and three million dollars were spent on new hotels and new commercial and industrial buildings. The volume of construction in 1905 was greater than in any

other city in North America of comparable size. (Bellan, 1978, p. 79). By 1915, the total value of building assessments in Winnipeg (in constant dollars) was \$95,640,096, or almost 7 times what it had been in 1900 (see Table 3.4).

The Labour Gazette for July, 1905, indicates that "A census of Winnipeg taken by a directory company showed a present population of 78,367, the number of habitations being 11,935." (p. 15). Artibise indicates that 5227 dwellings were built between 1900 and 1912 (1975, p. 156), and cites a reporter who "in 1909 observed that homes north of Portage ranged from 'scores of shacks which have cost \$150 to \$200' to 'new cottages and houses averaging \$3000 apiece', while in the area south of Portage homes 'usually cost from \$3000 to \$5000.' ...it was further reported that in the 'middle-class areas of central and southern Fort Rouge' homes ranged in cost 'from \$2000 to \$15000.'" (p. 168).

There was also considerable non-residential construction in Winnipeg between 1896 and 1914. The number of pupils in the schools operated by the Winnipeg School Board went from 6374 in 1896, to 25,814 in 1914. As a result, the school board had 31 new schools built, and additions put on 11 others, for a total cost of \$3,202,264 (see Table 3.5; Bugailiskis, 1990, p. 156-7). Facilities

for higher education were also expanded; Wesley College was built in 1906, while in the same year, the Manitoba Agricultural College opened on a campus in Tuxedo, and the Normal School and the Medical College were built. Between 1912 and 1914, several new buildings were erected on a new Manitoba Agricultural College campus in Fort Garry.

Besides laying track across the country, the railroads were also building supporting facilities in Winnipeg. Among these were the C.P.R. depot and the Union Station within Winnipeg itself, the Canadian Northern sorting yard in St. Boniface, and the Canadian Pacific yard in Transcona. The Fort Garry Hotel and the Royal Alexandra Hotel were also built by the railroads during these years.

The Grain Exchange Building, the Bank of Montreal at Portage and Main, the Bank of Nova Scotia building on Portage Avenue, the Alloway and Champion Bank on south Main Street, the Bank of Commerce building on Main Street, and the Dominion Bank building at Main and McDermot all date from this period. The Union Bank moved its headquarters to Winnipeg and built Winnipeg's first skyscraper, all of 12 storeys, at Main and William in 1903. The Eaton's store on Portage Avenue was opened in 1905, with five floors and 5 1/2 acres of floor space; by 1910, three additions had added three floors and more than doubled the floor space. (Bellan, 1978, pp. 78 and 104).

Many other commercial and industrial facilities were erected during this period. Capital invested in manufacturing establishments in Winnipeg multiplied almost four times, from just under 7 million dollars in 1901 to just over 27 million dollars in 1911 (in constant dollars; see Table 3.6). One of the largest projects was the Canada Cement Company's \$3,000,000 plant at Fort Whyte, opened in 1912 (Bellan, 1978, p. 105).

Other buildings served some of the city's social needs. Hospital construction included the Misericordia Hospital (1898), an addition for the General Hospital (1900), the Grace Hospital (1906), the Victoria (1911), the Children's (1912), the King Edward (1912), and the King George (1914). The Salvation Army Citadel opened in 1900, and the YWCA in 1908. The YMCA built a building on Portage Avenue in 1901, and in 1913 replaced it with a building on Vaughan Street. Many churches were built, including a new St. Boniface Cathedral in 1908. Buildings erected for entertainment included the Amphitheatre (1909), the Granite Curling Club (1913), and several theatres, among them the Dominion (1904), the Bijou (1906), the Walker (1907), and the Pantages (1914).

The three levels of government were also busy with public works during these years. The federal government built a new immigration hall in 1905, and a new post office

in 1908. The provincial government built a Land Titles Office in 1905, the above-mentioned buildings for the Normal School, the Medical College, and the Agricultural College in 1906, and in 1912 began the new Law Courts Building.

The municipal government was also very busy with public works. With the city's built-up area increasing by almost seven times in 18 years, just building streets was a major effort.

"Expenditure on public improvements rose from \$66,717 in the 1894-95 season to \$907,893 in the 1904-05 season. By 1905 the city boasted 17 1/2 miles of asphalt pavement, 33 miles of macadam, 16 miles of cedar block pavement, 23 miles of stone sidewalk, 190 miles of plank sidewalk, 84 miles of sewers, 95 miles of water main, 30 miles of street railway, and 138 miles of graded streets." (Bellan, 1978, p. 81)

By 1915 there were 112 miles of asphalt pavement, 6.25 miles of concrete pavement, 33 miles of macadam, 26 miles of cedar block pavement, 128 miles of stone sidewalk, 392 miles of plank sidewalk, 249 miles of sewers, 284 miles of water mains, 108 miles of street railway, and 295 miles of graded streets (Municipal manual, 1915). A new Main Street bridge was built in 1897, the Salter Overpass in 1898, a subway under the C.P.R. tracks on Main Street in 1905, a new Louise Bridge in 1911, and the new Osborne Street bridge and the Arlington Bridge over the C.P.R. tracks in 1912.

The utilities were also expanding rapidly during these years. Telephone service was supplied by the Bell Telephone Company, which treated the whole of the Prairies as one unit. In April, 1905, there were 7760 instruments in use in the North West, or 10.3% of all the telephones in use by Bell subscribers in Canada (i.e. in Quebec, Ontario, and the prairies). By December 1907, just before the provincial governments of Manitoba, Saskatchewan, and Alberta bought Bell's prairie system, the number of telephones in use had risen to 19,943, or 16.8% of the Canadian total. The increase over those 32 months was 12,183, or 157% (Armstrong, 1986, p. 176). In addition, there were several local, independent or municipal systems in operation in the region.

The Winnipeg Electric Railway Company had 30 miles of track in 1905, and kept laying track and expanding its system through this period. It also built a three-million dollar hydro-electric plant at Pinawa, on the Winnipeg River, and a 70-mile transmission line to Winnipeg, which were completed in 1906 (Bellan, 1978, p. 81). In 1911, a dam and power plant at Pointe du Bois, also on the Winnipeg River, were completed; these were owned by the City of Winnipeg (Bellan, p. 106).

Two other major construction projects were begun, at least on paper, in the heady times just before World War I.

In 1912, the provincial government accepted the plan for a new Legislative Building; the building was finally completed in 1919. Also, the water supply had been a cause for concern for a number of years, and construction of the Shoal Lake Aqueduct was approved by city ratepayers in 1913. This project was also completed in 1919. (Bellan, pp. 107, 137).

Winnipeg was by far the largest city in the region--indeed, by 1911 it was the third-largest city in the country. As such, it was the repository of many skills and talents, as well as capital and equipment, which were scarce or non-existent in the rest of the prairies. Winnipeg contractors and construction companies worked not just in Winnipeg, but across western Canada. According to Bellan, "In 1906, Mr. J. D. McArthur, one of the city's leading contractors, alone held contracts for 645 miles of railroad construction throughout the West, and had ten thousand men in his employment." (1978, p. 77). Lyall and Company, who bid unsuccessfully on the Manitoba Legislative Building contract, built the Saskatchewan Legislative Building. J. McDiarmid Co., which was awarded the contract for finishing the Manitoba Legislative Building after the first contractor had to leave the work unfinished, had built several buildings in Winnipeg, and also the Revillon Building in Edmonton and the Georgia-Harris Viaduct in

Vancouver (at that time the largest reinforced concrete bridge in Canada) (Baker, 1986, p.78). Winnipeg contractors built the \$400,000 King George Hotel in Saskatoon, and also the high-level bridge in Edmonton. (Bellan, p. 103).

In the previous chapter it was stated that Canada was undergoing an investment boom between 1896 and 1914, and we have seen in the present chapter additional details about how the boom affected the country, the West, and especially Winnipeg. At a time when the country as a whole, and the West in particular, were growing rapidly, the growth of Winnipeg was regarded as something quite remarkable.

CHAPTER FOUR

THE CONSTRUCTION INDUSTRY IN WINNIPEG

The construction industry is an important part of any investment boom, and Canada in the years just before World War I was no exception. Table 4.1 shows construction as a percentage of GNP for the years 1896 to 1915. Other than three slight decreases in 1899, 1900, and 1909, construction as a proportion of GNP rose steadily from 1896 to 1912. From 1910 through 1912, construction was the third-largest sector of the economy, while in the other years between 1896 and 1915, it was the fourth-largest, following closely behind transportation (see Table 4.2). Even during the recession of 1907-08, construction remained a significant contributor to the Canadian economy.

Winnipeg's rapid growth in the years leading up to World War I would have been impossible without a construction industry of considerable size and sophistication. Like the city itself, the Winnipeg construction industry grew rapidly in the years before World War I.

The census of 1886 gave the population of Winnipeg as 20,238, and the number of people in the various building trades as 783, or 3.9% of the total. In 1911, the population was 136,035, and the number in the building trades was 10,715, or 7.9% of the total. (There are no figures concerning the numbers of people in various occupations in Winnipeg available for the intervening years.) During that period, the population of the city increased 6.7 times, while the number of people in the building trades increased 13.7 times. The disproportional increase in the number of people earning their livings from the building trades is one of several indicators of the high level of activity in the construction industry.

The value of building assessments and the number and value of building permits issued are other indicators of the level of construction activity. As was mentioned in chapter 3, from 1900 to 1914 inclusive, 37,042 permits were issued, with a total value of \$149,134,470 (see Table 3.3). The value of the building permits issued in 1904 was a greater value of permits than was issued in any other city in Canada that year, and in 1905, the volume of construction was greater than in any other city in North America of comparable size. (Bellan, 1978, p. 79). The value of permits issued in 1912 was over \$20.5 million (current dollars); the value of permits issued in Winnipeg

in one year would not surpass \$20 million again until the mid-1950s (Newman, 1974, p. 157). From 1900 to 1915, the total value of building assessments in Winnipeg (in constant dollars) increased almost 7 times (see Table 3.4).

The following table shows the value of building permits in current and constant dollars, the number of workers in the construction industry for selected years, and the average weekly income of workers in the industry. The aggregate weekly wage bill was calculated using the last two figures and is an indication of the level of activity at full employment; it does not take into account any periods of unemployment, nor indeed any "over-employment" such as over-time worked.

Aggregate Wages in the Winnipeg Construction Industry
(Selected Years)

	1901	1906	1911
Price index	.802	.881	1.00
Value of bldg permits (current \$)	\$1,708,557	\$12,625,950	\$17,550,400
Value of bldg permits (constant \$)	\$2,130,370	\$14,331,385	\$17,550,400
No. of workers	1301	8750	10,715
Average weekly income	\$18.72	\$20.98	\$23.93
Aggregate weekly wage bill	\$24,355	\$183,575	\$256,410
Aggregate annual wage bill	\$1,071,620	\$8,077,300	\$11,282,040
Wages as % of construction in Canada	2.6	8.9	6.3
Wages as % of GNP	0.11	0.53	0.51

(See Appendix 4.A for further details.)

The aggregate weekly wage bill for 1906 is some 7.5 times that for 1901, and the figure for 1911 is 1.4 times that for 1906. The value of building permits in constant dollars increased 6.7 times from 1901 to 1906, and 1.3 times from 1906 to 1911. The number of workers increased

6.7 times in the first five-year period, and 1.2 times in the second period. The years 1904 to 1906 inclusive were years of considerable growth in Winnipeg--indeed, 1906 was the year in which the population growth rate, which had been rising for five years, peaked at 26.4% (see Table 3.2). It was also the year in which the value of building permits, which had risen sharply in 1903 and 1904, then risen again in 1905, reached its highest level before 1910 (see Table 3.3). In other words, 1906 was the peak year of a boom period. The next boom period peaked in 1912; in 1911 then, the economy was still approaching the peak. The rate of growth of the population that year was 14.5%, far short of the growth rate in the 1904-1906 period. Also, the rate of population growth in the preceding three years was under 10% per year. The value of building permits per capita in 1906 was \$152, while in 1912 it was \$128. In 1906 the wages paid in the construction industry in Winnipeg were 8.9% of the value of all construction in Canada, while in 1911 they were a somewhat lower proportion, 6.3%. In both years those wages amounted to slightly more than .5% of the total GNP. In spite of the highest rate of population growth since 1906, in spite of the highest value of building permits issued before 1912, and in spite of the relatively high number of construction companies incorporated in the years 1911 to 1914 (as will

be discussed later), the construction boom of 1911-1912 seems to have been less spectacular than the boom of 1904-1906.

The Labour Gazette began reporting on the state of employment in Canada in November, 1903. The reports covered 40 or more cities and towns across the country, each listed separately, with separate reports on several different groups of trades and industries. A six-point scale was used, ranging from the lowest level of unemployment to the highest: very busy, busy, active, quiet, dull, very dull. (See Table 4.3 and graph).

From November 1903 to December 1906 there were 38 months, in only two of which, January 1904 and February 1905, did the employment level for the building trades in Winnipeg dip below "active." During this period, unemployment appears to have been a relatively rare phenomenon for that group of workers.

From January 1907 to November 1907, employment in the building trades in Winnipeg was either "active" or "busy." In December of that year it fell to "quiet" and remained either "quiet" or "dull" through September 1908. In October it became "active" for two months, then "quiet" again for four months, until in April 1909 it began to recover from the slump.

In August 1909, the Labour Gazette began using a four-

point scale--very active, active, quiet, very quiet--for its "State of employment" reports. In the 29 months from August 1909 to December 1911 inclusive, the level of employment for the Winnipeg building trades never fell below "active," and for 14 of those months it was "very active." The year 1911 was equally divided between "active" and "very active," with six months at each level. In October 1911 the scale was changed to a five-point scale by inserting the designation "fair" into the middle--very active, active, fair, quiet, very quiet--and in January 1912 separate reports on indoor and outdoor work were begun. Even though the value of building permits issued in 1912 was over \$20 million (a record which would stand for more than 40 years (Newman, 1974, p. 157)), the level of indoor employment was only "active" for all 12 months, and the level of outdoor employment was "quiet" for January through March, "active" from April to November, and fell to "fair" in December. In spite of the high level of building permits issued, the level of employment never reached the "very active" level in 1912, yet another indication that the construction boom of 1911-1912 was less spectacular than the one which had ended five years earlier.

The construction industry in Winnipeg at the beginning of the 20th century operated under the general contracting system, which had been introduced in England about 100

years earlier. Thomas Cubitt is generally credited with being the first to use the system when in 1815 he expanded his wallpaper business and began constructing buildings in London. Previously, anyone--church, state, business, or individual--who wished to have a structure built, contracted with individual craftsmen for particular parts of the job, contracted with a partnership of craftsmen, or perhaps appointed one craftsman as a supervisor. However, "it was customary for craftsmen to employ men in their own skill alone" (Price, 1980, p.23); other parts of the work would be sub-contracted out to appropriate skilled men. "The industry was dominated by the small masters who only infrequently initiated building projects and even where they did there is no evidence of the gathering together of all the crafts under one enterprise which is the distinguishing mark of the general contractor" (Price, p. 23).

Cubitt "introduced an innovation regarded at the time as very daring ... Instead of arranging with craftsmen to carry out particular jobs, he started to employ them under craft foremen ... to work on whatever job he had for them" (Price, 1980, p. 23). As a result of using this system, Cubitt almost immediately also began speculative building, in order to keep his men busy.

The general contracting system had become common in

the construction industry in British North America by the mid-19th century, and was brought to Winnipeg by the entrepreneurs and craftsmen who arrived in the 1870s and 1880s.

In the late 19th century and early 20th century the construction industry in Winnipeg was, as was typical of North America and Britain, numerically dominated by the small producers. Little capital was required to establish oneself as a contractor, and as a result many men did so. It is probable that many so-called contractors wore several identities, if not simultaneously, then in rapid succession. Those who were craftsmen would at times hire a few journeymen and engage in speculative building, while at other times they would take sub-contracts on larger projects or contract with property owners for buildings. Other contractors began as sidelines of existing building materials supply businesses, or as additional services offered by architects or real estate agents.

Another characteristic of the construction industry at the beginning of the 20th century was that, relative to other industries, mechanization had had little influence. Cranes and steam shovels were coming into use on larger projects, but the industry was still almost as labour intensive as it had ever been. Other recent technological innovations included the introduction in the late 19th

century of balloon framing in wooden buildings, and of steel framing (one of the innovations which made skyscrapers possible). Concrete blocks were also beginning to be used in place of brick or stone, and poured concrete foundations were beginning to replace stone foundations.

The number of building contractors in a city is also an indicator of construction activity. The number of such businesses in Winnipeg increased a great deal in the early 20th century, (see Table 4.4), by a minimum of 423% between 1901 and 1911 according to Berkowski's figures, and by even more according to Saunders' figures (which covered the years 1900 to 1910). The figures obtained from Henderson's Winnipeg Directory show the greatest increase, 637%, between 1901 and 1911, but they also indicate that the number of contractors reached an even higher number, 261, in 1906. At any rate, the number of individuals and companies in the construction business in Winnipeg increased at a much faster rate than the population of the city during the boom years.

Of the 526 builders and contractors listed by Saunders et al., 422 (80.2%) appeared only once in the seven issues of Henderson's Winnipeg Directory (selected issues, 1885-1917) which were examined.

Builders and Contractors in Henderson's Winnipeg Directory

No. of appearances	No. of listings	Percent of all listings
0 •	1	
1	422	80.2
2	66	12.6
3	28	5.3
4	7	1.3
5	2	.38

* The name of one contractor was listed with no indication that it had appeared in any of the issues examined.
(Source: Saunders, 1974, p. 108-125)

This suggests that not only was the business easy to enter, it was also easy to leave.

The contracting business was geographically mobile as well. Some of the larger contractors built structures in other locations throughout western Canada. Even if they worked only in Winnipeg, their work would be at one construction site until the structure was completed, then would move to another site. The individual craftsmen were also mobile, not only in the sense of moving from one work site to another within the city, but also in that some, at least, would leave the city during slack periods to seek work in other locations where weather or economic conditions made the prospects look better.

The fact that the industry was made up of many small businesses and few large ones meant that decision-making, money, and power were decentralized. One hundred nine

construction companies were incorporated in Manitoba from 1903 to 1914 inclusive, with a mean capitalization of \$107,844. Only 26 firms (23.8%) were capitalized at more than the mean amount, while 24 (22.0%) were capitalized at exactly \$100,000, and 31 (28.4%) at \$20,000 or less. The following table shows a more detailed distribution (see also Table 4.7):

Construction Firms Incorporated in Manitoba, 1903-1914

Amount of capital	No. of firms
\$1,000,000	2
160,000-750,000	11
150,000	12
125,000	1
100,000	24
60,000-75,000	6
50,000	11
25,000-40,000	11
20,000	23
<20,000	8

(Source: Manitoba Gazette, 1903-1914)

In general, the larger contractors took on the larger projects, and the smaller firms took the smaller projects, or did sub-contracting. There seem to have been some efforts among the larger firms to collude and keep wages or the prices of materials down, or to corner the market when supplies of materials were short, but such efforts seem to have been successful only in the short term.

Berkowski's figures on the types of contracting

companies in Winnipeg in 1901 and 1911, reproduced below, indicate that the number of incorporated firms increased from none to 11, and the number of independent contractors increased by almost 500%. The other types of companies--partnerships, family firms, and unincorporated companies--increased by noticeably less than the overall increase of 423%. According to Berkowski's figures, out of a total of 209 construction companies in Winnipeg in 1911, 11, or 5.3%, were incorporated.

Types of Contracting Companies in Winnipeg, 1901-1911

	1901	1911	% Increase
Independent	26	152	485
Partnership	4	15	275
Co.	5	12	140
Ltd.	-	11	
Family	5	19	280
TOTALS	40	209	423

(Source: Berkowski, 1986, Table 6.)

From 1895 through 1910, there were 39 construction firms incorporated in Manitoba. Saunders indicates that there were 199 construction firms in Winnipeg in 1910, while Berkowski indicates that there were 209 in 1911, and Henderson's Winnipeg Directory lists 241 firms in 1911. Some of the incorporated firms carried on their businesses outside of Winnipeg, but the maximum proportion of incorporated firms compared to all firms is 39 out of 199, or 19.6%.

The figures mentioned in the last two paragraphs are further indications that only a relatively small number of construction firms were incorporated. As a very general rule, albeit one with numerous exceptions, the incorporated firms tended to be the larger ones, and the smaller firms were more likely to not be incorporated. However, one of the largest (i.e., one of those which took on the largest projects), Thomas Kelly and Sons, seems to be one of the exceptions; I found no indication that it was ever incorporated.

Another of the larger construction firms in Winnipeg prior to World War I was the J. McDiarmid Co. Ltd., and brief case studies of it and of the businesses with which Thomas Kelly was associated are included in Appendix 4.B. Thomas Kelly's various changes of associates and of the names of his firms provide a good illustration of the fluidity which was typical of the industry.

It is interesting to note, in Table 4.5, the changes in the numbers of listings for some businesses in the construction industry. The changes in the numbers of architects and lumber dealers reflects the increase in the amount of construction being done. The drop in the number of carvers and gilders may reflect a change in fashion or technology, but the initial number is too small for the change to have much importance. The rise in the number of

railway contractors reflects the large amount of railway construction being done, especially in western Canada, but there is no apparent reason for the abrupt drop in 1912. (The number of miles of track in operation was increasing each year, and from 1910 to 1913 the percentage increase each year was greater than the previous year, which indicates that the amount of railway construction being done was increasing, and increasing by a sizable amount, not decreasing. See Table 4.6.) The increases in the numbers of electricians and suppliers of electrical goods reflects the change in technology with the introduction of electricity, although the reason for the drop in the number of suppliers of electrical goods in 1906 is unknown. The increase in the number of plumbers is to some degree due to the increasing awareness of the importance to public health of a supply of clean water and the proper disposal of sewage. The greater number of concrete contractors reflects the change in technology in which concrete foundations began to replace stone foundations, and concrete was tried as a road surface.

Thus we can see that the number of people working in the building trades increased during this period, and therefore so did the aggregate wage bill. By 1911, the construction industry was paying weekly wages of more than 1/4 million dollars, and in that way fuelling additional

economic activity. It is a matter of some note that the wages paid in one industry, in one city, should have amounted to more than .5% of the GNP. In addition, the industry's local purchases of materials, and of services such as those of architects and engineers, would have had considerable indirect impact.

The construction industry also increased in size with respect to the number of firms involved in the industry. From 40 or fewer firms in 1900/1901, there was an increase of several hundred per cent over the following decade (the numbers vary according to the source, but are agreed that the increase was at least 400%). It is interesting to note, however, that the average size of a firm does not seem to have increased, at least in the case of the incorporated firms, based on the amount of capital at incorporation (see Table 4.7).

Finally, the complexity of the industry increased during this period, judging by the additional classifications given in the census of 1911. In that census there were classifications for concrete builders, electricians, metal workers and roofers, office employees, and structural iron workers, which had not been separately listed before. These additional classifications, and the additional classifications appearing in Henderson's Winnipeg Directory through this period, are indications of

increasing specialization within the construction industry, and its increasing ability to handle larger and more complex projects.

Thus the construction industry in Winnipeg increased with respect to the number of people and firms involved, the wages paid, the value of its products, and the degree of specialization within the industry, but not with respect to the average size of each firm. The increasing size of the industry was not reflected in the size of the firms, but there was a rising tendency for construction firms to be incorporated. By the time the "wheat boom" ended, the Winnipeg construction industry had become a major industry, and had made a major contribution to the growth of Winnipeg and of western Canada.

CHAPTER FIVE

CONCLUSION

The purpose of this thesis has been to examine the particular case of the construction industry in Winnipeg in the early years of the 20th century, in order to shed further light on the cause and context of the so-called "wheat boom" of those years. Various authors have examined the accuracy of ascribing the boom to wheat, and have concluded that the boom was actually an investment boom. It was the prospect of exporting wheat, with the investment involved in the settlement of the prairies and the construction of railways which necessarily preceded it, which provided the impetus.

The investment boom was particularly evident in Winnipeg. The population of the city increased from 38,000 in 1896 to over 200,000 in 1914. From 1900 to 1914, 37,042 building permits were issued by the City of Winnipeg, representing 44,151 buildings, with a total value of \$149,134,470. Building assessments in 1914 amounted to \$81,708,450, or, in real terms, 6.76 times the

corresponding amount in 1896. The number of miles of streets, sidewalks, water mains, etc., had increased in a similar fashion.

Since construction is a major part of an investment boom, the Winnipeg construction industry grew as well. The number of contractors increased from 20 in 1895 to 228 in 1914, having reached a high of 261 in 1906. There is no indication that there were any incorporated construction firms in Winnipeg before 1903, but by 1914, 109 construction firms had been incorporated in Manitoba. The number of large incorporated firms compared to the total number of incorporated firms does not seem to have changed to any extent during the period; the number of incorporated firms with capital of \$100,000 or more remained at approximately one-half of all incorporated firms. It is evident, however, from looking at Henderson's Winnipeg Directory, and from comparing the number of incorporated firms with the numbers that Saunders and Berkowski give, that there were many firms in addition to those which were incorporated.

The number of people in the building trades in Winnipeg increased from 783 (3.9% of the total population) in 1886, to 10,715 (7.9% of the population) in 1911. Not only had the absolute number increased by 13.7 times, the proportion in the total population had doubled. The

aggregate weekly wage bill in 1911 was 10.5 times that in 1901.

The changes in the size of the industry, as illustrated in the graph of the state of employment (following Table 4.3), reflect the state of the national economy, being "very busy" or "very active" when the economy was booming, and "quiet" when the economy was quiet. This close relationship between the state of the construction industry, especially of the construction industry in Winnipeg, and the national economy, is yet another indication that the so-called "wheat boom" was in truth an investment boom.

The tremendous growth in Winnipeg during the boom years--population, number and value of building permits, building assessments, number of construction companies, number of people involved in the building trades, aggregate weekly wage bill--all are evidence which supports the thesis that the boom before World War I was a construction/investment boom.

Unfortunately, all booms end sooner or later, and this boom was no exception. Even though exports of wheat increased sharply after 1910, and remained relatively high at least through 1920, the "wheat boom" came to an end late in 1912. It was, after all, not a boom based on wheat, but one based on investment. The collapse of investment

inevitably led to the contraction of the construction industry in Winnipeg as elsewhere, as plans for construction were shelved to wait for better economic conditions.

TABLES AND APPENDICES

Table 2.1 - Gross national product, Canada, 1896-1914

YEAR	GNP in constant (1900) prices (\$ millions)	CHANGE IN GNP from previous year	% CHANGE from previous year
1896	678.2		
1897	754.0	75.8	11.2
1898	782.7	28.7	3.8
1899	853.2	70.5	9.0
1900	902.1	48.9	5.7
1901	978.6	76.5	8.5
1902	1068.2	89.6	9.2
1903	1108.3	40.1	3.8
1904	1126.9	18.6	1.7
1905	1244.0	117.1	10.4
1906	1377.1	133.1	10.7
1907	1453.0	75.9	5.6
1908	1381.0	-72.0	-5.0
1909	1519.8	138.8	10.1
1910	1654.6	134.8	8.9
1911	1769.9	115.3	7.0
1912	1904.2	134.3	7.6
1913	1978.4	74.2	3.9
1914	1834.8	-143.6	-7.3

Source: Urquhart, 1993, Table 1.6

Table 3.1 - Gross Fixed Capital Formation, Canada, 1896-1914

YEAR	GFCF (millions of current dollars)	Capital Formation/ GNP
1896	73.8	0.116
1897	90.1	0.126
1898	18.5	0.155
1899	126.4	0.154
1900	140.2	0.155
1901	180.2	0.183
1902	208.6	0.187
1903	255.2	0.218
1904	277.1	0.231
1905	312.0	0.230
1906	359.7	0.236
1907	447.7	0.260
1908	438.0	0.265
1909	477.0	0.260
1910	596.9	0.295
1911	694.2	0.311
1912	850.1	0.341
1913	870.5	0.329
1914	660.3	0.270

Source: Urquhart, 1993, Tables 1.2 and 1.8.

TABLE 3.2 - Population of Winnipeg, 1894-1916

Year	Fed. census figures	City Ass't Off. figures	Pop'n Change	% Change
1894	34,954			
1895		37,124	2170	6.2
1896	31,649	37,983	859	2.3
1897		38,733	750	1.98
1898		39,384	651	1.7
1899		40,112	728	1.8
1900		42,534	2422	6.0
1901	42,340	44,778	2244	5.3
1902		48,411	3633	8.1
1903		56,741	8330	17.2
1904		67,265	10,524	18.5
1905		79,975	12,710	18.9
1906	90,153	101,057	21,082	26.4
1907		111,729	10,672	10.6
1908		118,252	6523	5.8
1909		122,390	4138	3.5
1910		132,720	10,330	8.4
1911	136,035	151,958	19,238	14.5
1912		166,553	14,495	9.6
1913		184,730	18,177	10.9
1914		203,255	18,525	10.0
1915		212,889	9634	4.7
1916	163,000	201,981	-10,908	-5.1

Source: Artibise, 1975, p. 130-131 (last two columns are my calculations)

Table 3.3 - Value of Construction in Winnipeg, 1900-1914

YEAR	PERMITS	BUILDINGS	COST	CONSTANT \$
1900	530	638	1,411,863	2,099,425
1901	630	820	1,708,557	2,539,472
1902	822	973	2,408,125	3,423,550
1903	1227	1593	5,689,400	7,531,639
1904	1768	2268	9,651,750	12,551,040
1905	3349	4099	10,840,150	13,826,722
1906	3487	4204	12,625,950	15,322,755
1907	2433	2827	6,309,950	7,367,994
1908	1544	1769	5,513,700	6,101,926
1909	2498	2942	9,226,325	10,249,195
1910	3291	3916	15,116,450	16,803,524
1911	3671	4342	17,550,400	18,505,272
1912	4489	5339	20,563,750	21,239,155
1913	4173	4807	18,357,150	18,357,150
1914	3130	3614	12,160,950	12,620,330
TOTAL	37,042	44,151	149,134,470	

Source: Sutcliffe, 1972, pp. 11 and 23.

Note: Deflator used was Construction cost index (1913=100)

Table 3.4 - Winnipeg Assessments, 1895-1915

YEAR	ASS'T (CURRENT DOLLARS)	ASS'T (CONSTANT DOLLARS)	CHANGE	% CHANGE
Land -				
1895	11,716,010	18,869,399		
1896	11,689,560	18,772,378	-97,021	-0.5
1897	11,622,630	19,662,714	890,336	4.7
1898	11,571,230	19,214,929	-447,785	-2.3
1899	11,614,340	18,705,653	-509,276	-2.7
1900	11,971,720	17,801,814	-903,839	-4.8
1901	12,259,730	18,221,953	420,139	2.4
1902	12,662,550	18,001,919	-220,034	-1.2
1903	17,920,600	23,723,325	5,721,406	31.8
1904	25,186,160	32,751,834	9,028,509	38.1
1905	33,293,110	42,465,701	9,713,867	29.7
1906	42,253,060	51,277,985	8,812,284	20.8
1907	59,504,110	69,481,679	18,203,694	35.5
1908	62,745,070	69,438,988	-42,691	-0.1
1909	65,449,220	72,705,199	3,266,211	4.7
1910	108,674,070	120,802,657	48,097,458	66.2
1911	118,407,650	124,849,905	4,047,248	3.4
1912	151,795,740	156,781,388	31,931,483	25.6
1913	187,351,170	187,351,170	30,569,782	19.5
1914	199,082,890	206,603,248	19,252,078	10.3
1915	198,884,390	212,369,877	5,766,629	2.8

(cont.)

Table 3.4 - Winnipeg Assessments, 1895-1915 (cont.)

YEAR	ASS'T (CURRENT DOLLARS)	ASS'T (CONSTANT DOLLARS)	CHANGE	% CHANGE
Buildings -				
1895	7,409,500	11,933,484		
1896	7,809,100	12,540,710	607,226	5.1
1897	8,123,300	13,742,683	1,201,973	9.6
1898	8,099,450	13,449,768	-292,915	-2.1
1899	8,435,550	13,586,004	136,236	1.0
1900	9,344,280	13,894,840	308,836	2.3
1901	10,095,870	15,005,752	1,110,912	8.0
1902	11,276,310	16,031,149	1,025,397	6.8
1903	12,953,310	17,147,617	1,116,468	7.0
1904	15,920,710	20,703,134	3,555,517	20.7
1905	20,492,960	26,138,980	5,435,846	26.3
1906	26,546,960	32,217,184	6,078,204	23.3
1907	34,321,850	40,076,892	7,859,708	24.4
1908	40,040,100	44,311,753	4,234,861	10.6
1909	42,548,100	47,265,163	2,953,410	6.7
1910	48,934,150	54,395,454	7,130,291	15.1
1911	54,269,600	57,222,269	2,826,815	5.2
1912	62,564,700	64,619,603	7,397,334	12.9
1913	72,068,350	72,068,350	7,448,747	11.5
1914	81,708,450	84,794,988	12,726,638	17.7
1915	89,566,950	95,640,096	10,845,108	12.8

Source: Winnipeg. City Comptroller. Annual report, year ending Apr. 30, 1915

Note: Deflator used was Construction cost index (1913=100).

Table 3.5 - Winnipeg School Board Construction, 1896-1914

YEAR	AMOUNT SPENT	CONSTANT DOLLARS
1896-97	none	
1898	23,990	39,837
1899	29,336	47,248
1900	32,000	47,584
1901	45,738	67,982
1902	61,000	86,722
1903	80,000	105,904
1904	40,000	52,016
1905	50,000	63,776
1906	80,000	97,087
1907	75,000	87,576
1908	259,600	287,295
1909	242,000	268,829
1910	746,000	829,257
1911	137,000	144,454
1912	496,000	512,291
1913	372,250	372,250
1914	432,600	448,941
TOTAL	\$3,202,264	

Source: Bugailiskis, 1990, p. 156-7.

Note: Deflator used was Construction cost index (1913=100).

Table 3.6 - Capital Investment in Manufacturing in
Winnipeg, 1901-1911

Year	<u>1901</u>	<u>1911</u>
No. of establishments	103	174
Capital	4,673,214	25,820,430
Capital *	6,945,919	27,225,253
Employees on salary		
Number	414	1310
Total salaries	387,543	1,494,951
Employees on wages		
Number	2741	10,255
Total wages	1,423,302	6,011,191
Cost of materials	5,045,537	18,361,127
Value of product	8,616,248	32,502,380
Value of product *	12,806,552	34,270,750
Product/capital *	1.84	1.26
Capital/establishment *	67,436	156,467
Wage workers/establishment	26.6	58.9
Product per estab't *	124,335	196,958
Total workers	3155	11,565
Total workers/estab't.	30.6	66.5
Capital per worker *	2202	2354
Product per worker •	4059	2963

* indicates constant dollars

Note: Deflator used was Construction cost index (1913=100).

Source: Canada. Dept. of Agriculture. Census of Canada,
1901, Table XIII; 1911, Table IX.

Appendix 4.A -

Aggregate wage bill for Winnipeg construction industry

1911

Price index = 100
Value of building permits (current \$): \$17,550,400
No. of workers (from Census): 10,715
Average weekly income (all trades): \$23.93 ***
Aggregate weekly wage bill = $23.93(10715)$
= \$256,409.95 --> \$256,410
Ratio of value of permits to no. of workers
= $17550400/10715 = 1637.928\dots$ --> 1637.9
Aggregate annual wage bill = \$11,282,040 *
Annual wage bill as % of all construction in Canada
= 6.3% **
Annual wage bill as % of GNP = .51% **

1906

Price index = $111/126 = .881$
Value of building permits (current \$): \$12,625,950
Value of building permits (constant \$)
= $12625950/.881 = \$14,331,385$
Average weekly income (all trades): \$20.98 ***
If ratio of value of permits to no. of workers is
1637.9, then no. of workers is $14331385/1637.9$
= 8749.8 --> 8750
Aggregate wage bill is $8750(20.98) = \$183,575$
Aggregate annual wage bill = \$8,077,300 *
Annual wage bill as % of all construction in Canada
= 8.9% **
Annual wage bill as % of GNP = .53% **

1901

Price index = $101/126 = .8016$ --> .802
Value of building permits (current \$): \$1,708,557
Value of building permits (constant \$)
= $1708557/.802 = \$2,130,370$
Average weekly income (all trades): \$18.72 ***
If ratio of value of permits to no. of workers is
1637.9, then no. of workers is $2130370/1637.9$
= 1300.67 --> 1301
Aggregate wage bill is $1301(18.72)$
= \$24,354.72 --> \$24,355
Aggregate annual wage bill = \$1,071,620 *
Annual wage bill as % of all construction in Canada
= 2.6% **
Annual wage bill as % of GNP = 0.11% **

- * Assume 44 weeks of work per year
- ** See Table 2.2 for value of construction and GNP
- *** Source: Sutcliffe, 1972, Table 4.1

Appendix B - Two Winnipeg Contractors

THOMAS KELLY & SONS

Thomas Kelly was born in Ireland in 1855, emigrated to the United States with his family in 1864, and arrived in Winnipeg in 1878. About 1880, he and his brother Michael formed Kelly Bros. and went into the general contracting business, in which they were joined about 1884 by another brother, Martin, when the name of the firm was changed to Kelly Bros. and Company. In 1903, the three brothers and several other men incorporated the Manitoba Construction Company, Ltd., with capital of \$500,000, and with Thomas Kelly as president. The other partners were Thomas Sharpe (mayor of Winnipeg from 1904 to 1906 inclusive), Edward Cass, William H. Rourke, William Colledge, George Alsip, Daniel D. Wood, and George A. Mitchell, all of whom were also contractors or in businesses, such as brick and lumber, associated with the construction industry.

The Manitoba Construction Company was dissolved in 1905, and Kelly Bros., Mitchell Ltd. was formed by Thomas, Michael, and Martin Kelly, George A. Mitchell, and William H. Rourke. The company was incorporated that year, with capital of \$200,000 (2000 shares at \$100 each), again with Thomas Kelly as president.

In 1908, Kelly Bros., Mitchell Ltd. was dissolved, and

Thomas Kelly and Sons was formed, with Thomas Kelly being joined by his two oldest sons, Robert and Charles. In 1912 a third son, Lawrence, joined the firm.

Among the buildings and other structures built by Thomas Kelly and his associates were:

St. Andrew's locks and dam
a large section of the Shoal Lake aqueduct -
1913+

Grain Exchange Building - 1903
Manitoba Free Press building (the one at Portage
and Garry - built 1904-5)
Canadian Pacific and Canadian Northern Railway
shops
Clarendon Hotel (early '80s)
Imperial Bank
Bank of Toronto
Bank of Nova Scotia (1909?)
post office (Portage Ave. - ca. 1908)
Agricultural College building, Fort Garry (no
information re: which building(s)) - 1912/13
Mulvey and Aberdeen Schools (1893), Alexandra
School (1902), Carlton School (1903), Laura
Secord School (1912)
substructure of railway bridge over Assiniboine
R. near mouth (1910)
substructures of several bridges on Red and
Assiniboine Rivers
Canadian Northern Rwy. Hotel and depot in Brandon
post office and Canadian Bank of Commerce,
Vancouver
Legislative Building - tender accepted July 12,
1913, and excavation began in Aug. - Kelly
firm suspended May 17, 1915

In addition to the above-named firms in which Thomas Kelly was definitely involved, there were at least three other construction firms in existence in Winnipeg during this period which had, or may have had, some connection to Thomas Kelly. Henderson's Directory for 1909 lists "Kelly

Bros. and McDole" under its heading for general contractors--perhaps this is what Michael and Martin Kelly did after Kelly Bros., Mitchell was dissolved and Thomas and his sons formed their own company. Kelly and Town is listed in Henderson's for 1909 and 1912 as a general/building contractor and in 1912 is in the same office as Thomas Kelly and Sons. Kelly-Simpson Construction Company was incorporated in 1911, with capital of \$100,000, by Michael Kelly, Christopher H. Simpson, James Michael Kelly, John Joseph Kelly, and Martin Patrick Kelly; the first four men were contractors, and the last was a bricklayer.

Thomas Kelly had been trained as a bricklayer, and Saunders credits him with producing the first bricks made in Winnipeg, about 1881. By 1906, his plant was producing about 6 million bricks per year. Kelly was also president of Manitoba Quarries, which owned several quarries north of Winnipeg.

As a result of criminal proceedings arising from irregularities in the construction of the Legislative Building, Thomas Kelly was sentenced to two and one-half years in Stony Mountain Penitentiary. After serving his sentence, he resumed his life in Winnipeg, but in 1922 several properties were confiscated to settle his debts. He moved to the U. S. sometime after 1923, and died in

Beverley Hills, California, in 1939.

J. MCDIARMID CO., LTD.

James McDiarmid was born and raised in Dunkeld, Scotland, where his father was in the construction business, and came to Winnipeg in 1881 or 1882. He was involved in the construction business from the time of his arrival, his first large structure being the Drill Hall on Broadway, in the mid 1880s.

The J. McDiarmid Co. was incorporated in 1906, with capital of \$150,000 (1500 shares at \$100 each); the provisional directors and the number of shares each one took are listed below:

James McDiarmid	100 shares
Edward Cass	100 "
John McDiarmid	50 "
Peter McDiarmid	50 "
Peter Muir	50 "
Thomas Borgford	50 "

These shares were, according to the application for incorporation, all paid for by the transfer of interests in the J. McDiarmid Company.

Later in his life, Mr. McDiarmid served for many years as the chairman of the Winnipeg Parks Board. He enjoyed

golf, and is credited with the creation of the golf course at Kildonan Park. He also curled, and was a founder of the Granite Curling Club and a president of the Manitoba Curling Association. He was an art collector as well, and at the time of his death, which occurred in Winnipeg on February 24, 1934, his collection was on exhibit at the Winnipeg Auditorium. Only a few weeks before his death he was made the first honorary life member of the Winnipeg Art Gallery Association, particularly in recognition of his encouragement of art education.

Among the buildings constructed by James McDiarmid and/or the J. McDiarmid Company are:

St. George's Church - 1894
CPR (Weston) shops - 1898
St. Andrew's Church, Elgin Ave. - 1894
Point Douglas Church - 1905
St. Stephen's Church addition - 1910
Knox Church - 1914
Revillon Building, Edmonton
Georgia-Harris Viaduct, Vancouver (at that time
the largest reinforced concrete bridge in
Canada)
Pantages (later Playhouse) Theatre
Merrick-Anderson Warehouse, 119 Bannatyne Ave. -
1899
Max Waldhorn Bldg. (originally Marshall-Wells
Warehouse), 123 Bannatyne Ave. - 1900
Customs Examining Warehouse, 145 McDermot Ave.
many CPR buildings between Fort William and
Vancouver
McClary Manufacturing Bldg., 185-187 Bannatyne
Ave. - addition, 1912
Science (Buller) Bldg., University of Manitoba -
1932

Canada Bldg., Donald St.
Nokomis Block, Cumberland Ave.
Manitoba Legislative Bldg. (begun by Thomas Kelly
and Sons, completed by J. McDiarmid Co.)

Mr. McDiarmid was an architect as well as a contractor, and designed as well as built some of the above buildings. The buildings he designed included:

Nokomis Block
St. Andrew's Church
Point Douglas Church
St. Stephen's Church addition
Revillon Bldg.. Edmonton
Georgia-Harris Viaduct, Vancouver
Bain Block, 115 Bannatyne Ave.
Merrick-Anderson Warehouse, 119 Bannatyne Ave. -
1899
Max Waldhorn Bldg. (originally Marshall-Wells
Warehouse), 123 Bannatyne Ave. - 1900
Thomas Scott Memorial Orange Hall, 216 Princess
St.

In addition to his work as an architect and contractor, Mr. McDiarmid was one of the founders of the Winnipeg Paint and Glass Co. This business was started in 1902 and incorporated in 1903, with capital of \$75,000, by John Carr, Edward Cass, James McDiarmid, John McDiarmid, and Isaac Pitblado.

Saunders indicates that Mr. McDiarmid was an architect "who was involved in quite a number of local industries, among which were a brick-yard and a construction firm." In addition, he says that the J. McDiarmid Co. "also owned a lumber mill in the city and is probably the predecessor [sic] of McDiarmid's Lumber and Supplies on Pembina, which

is still a part of Winnipeg's business community." However, the notice of incorporation of McDiarmid Lumber Co., which was published in the Manitoba Gazette in 1913, named five partners, none of whom was named McDiarmid.

Table 4.1 - Construction as a percentage of GNP, 1896-1914

YEAR	GNP AT MARKET PRICES	CONSTRUCTION	CONSTRUCTION AS % OF GNP -
1896	638,418	20,000	3.1
1897	713,944	23,300	3.3
1898	765,568	30,000	3.9
1899	821,451	30,400	3.7
1900	901,728	32,500	3.6
1901	985,080	40,900	4.2
1902	1,113,865	46,800	4.2
1903	1,170,962	59,100	5.0
1904	1,200,998	67,500	5.6
1905	1,356,930	78,500	5.9
1906	1,522,117	91,000	6.0
1907	1,724,833	113,100	6.6
1908	1,651,061	113,800	6.9
1909	1,837,476	124,100	6.8
1910	2,021,887	158,500	7.8
1911	2,232,214	178,200	8.0
1912	2,492,269	215,600	8.7
1913	2,649,621	219,600	8.3
1914	2,447,363	172,800	7.1
1915	2,685,044	126,500	4.7

Source: Urquhart, 1993, Table 1.1 (columns 2 and 3 show amounts in thousands of current dollars; percentages are my calculations)

Table 4.2 - Selected economic sectors as % of GNP, 1896-1915

YEAR	AGRICULTURE	MANUFAC'G	TRANSP'N
1896	24.6	21.7	6.8
1897	26.2	21.9	6.3
1898	24.7	22.1	6.8
1899	24.4	21.8	6.8
1900	23.0	22.2	6.9
1901	24.7	20.7	6.5
1902	25.1	21.6	6.6
1903	22.8	22.2	7.2
1904	23.2	21.2	7.2
1905	22.3	22.7	6.8
1906	20.9	23.9	7.1
1907	20.5	23.3	7.7
1908	20.3	21.2	8.0
1909	21.9	22.1	7.2
1910	19.9	22.4	7.6
1911	21.0	21.0	7.8
1912	19.1	20.7	8.3
1913	19.5	19.5	9.3
1914	20.0	18.3	9.1
1915	25.5	17.7	7.1

Source: calculated from Urquhart, 1993, Table 1.1

Table 4.3 - State of Employment in the Building Trades in
Winnipeg, 1903-1915

Nov. 1903 - active	Sept. - active
Dec. - active	Oct. - active
Jan. 1904 - quiet	Nov. - active
Feb. - active	Dec. - quiet
Mar. - active	Jan. 1908 - quiet
Apr. - active	Feb. - dull
May - very busy	Mar. - quiet
June - very busy	Apr. - quiet
July 1904 - very busy	May - dull
Aug. - very busy	June - dull
Sept. - very busy	July 1908 - dull
Oct. - very busy	Aug. - quiet
Nov. - very busy	Sept. - quiet
Dec. - busy	Oct. - active
Jan. 1905 - very busy	Nov. - active
Feb. - quiet	Dec. - quiet
Mar. - busy	Jan. 1909 - quiet
Apr. - very busy	Feb. - quiet
May - very busy	Mar. - quiet
June - very busy	Apr. - active
July 1905 - very busy	May - busy
Aug. - very busy	June - busy
Sept. - very busy	July 1909 - busy
Oct. - very busy	Aug. - very active
Nov. - busy	Sept. - very active
Dec. - active	Oct. - very active
Jan. 1906 - active	Nov. - very active
Feb. - active	Dec. - active
Mar. - busy	Jan. 1910 - active
Apr. - busy	Feb. - active
May - very busy	Mar. - active
June - very busy	Apr. - very active
July 1906 - very busy	May - very active
Aug. - very busy	June - very active
Sept. - very busy	July 1910 - very active
Oct. - very busy	Aug. - active
Nov. - very busy	Sept. - active
Dec. - busy	Oct. - active
Jan. 1907 - active	Nov. - active
Feb. - active	Dec. - active
Mar. - busy	Jan. 1911 - active
Apr. - active	Feb. - active
May - busy	Mar. - active
June - busy	Apr. - active
July 1907 - active	May - very active
Aug. - busy	June - very active

July 1911 - very active
 Aug. - very active
 Sept. - very active
 Oct. - very active
 Nov. - active
 Dec. - active
 Jan. 1912 - quiet/active •
 Feb. - quiet/active
 Mar. - quiet/active
 Apr. - active/active
 May - active/active
 June - active/active
 July 1912 - active/active
 Aug. - active/active
 Sept. - active/active
 Oct. - active/active
 Nov. - active/active
 Dec. - fair/active
 Jan. 1913 - fair/active
 Feb. - fair/active
 Mar. - fair/fair
 Apr. - active/active
 May - fair/fair
 June - active/active
 July 1913 - active/active
 Aug. - active/active
 Sept. - active/active
 Oct. - fair/active
 Nov. - fair/active
 Dec. - quiet/quiet
 Jan. 1914 - very quiet/very quiet
 Feb. - very quiet/very quiet
 Mar. - ---/fair
 Apr. - quiet/quiet
 May - fair/fair
 June - fair/fair
 July 1914 - fair/fair
 Aug. - quiet/quiet
 Sept. - fair/fair
 Oct. - very quiet/very quiet
 Nov. - quiet/quiet
 Dec. - quiet/quiet
 Jan. 1915 - very quiet/very quiet
 Feb. - quiet/quiet
 Mar. - very quiet/very quiet
 Apr. - quiet/quiet
 May - quiet/quiet

- Beginning in Jan. 1912, the first term refers to outdoor work, and the second to indoor work

Note: See following page for the above information plotted on a graph, with quarters averaged and, from Jan. 1912, separate reports on indoor and outdoor work also averaged.

Source: State of employment reports. Labour Gazette. Dec. 1903-June 1915.

STATE OF EMPLOYMENT
 WINNIPEG BUILDING TRADES
 NOV. 1903-MAY 1915

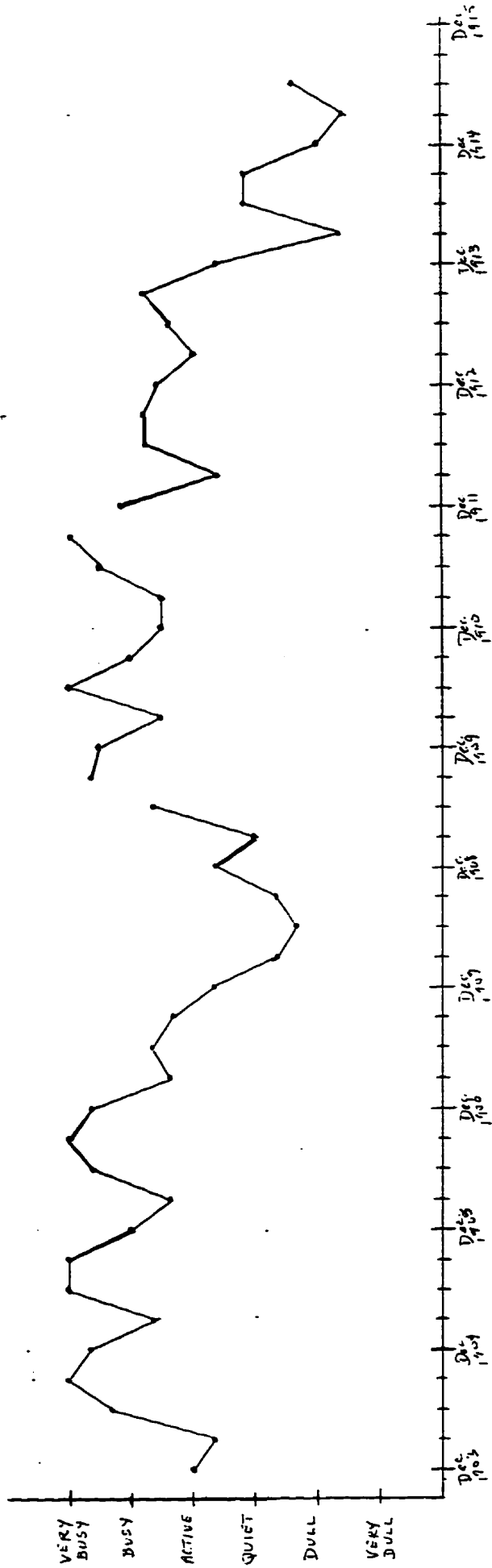


Table 4.4 - Number of Contractors in Winnipeg, 1895-1915

Year	Berkowski	Hend Dir	Saunders
1895			20
1900			27
1901	40	39	
1905			161
1906		261	
1910			199
1911	209	241	
1912		200	
1913		193	
1914		228	166
1915		230	

Increase, 1900/1901-1910/1911

Saunders 27 --> 199 gives increase of 637%

Henderson's Dir. 39 --> 241 gives increase of 518%

Berkowski: 40 --> 209 gives increase of 423%

Berkowski and Saunders both indicate that their figures are drawn from Henderson's Winnipeg Directory, but give no more precise indication of their sources. The figures given above for Henderson's Winnipeg Directory (abbreviated "Hend. Dir.") were obtained by counting all the entries under the headings "Builders," "Building Contractors," "Contractors," "Contractors and Builders," "Contractors, Building," and "Contractors, General" in the issues of the directory, and adding the figures together, even though some names may have appeared under two or more headings.

Sources: Berkowski, 1986, Table 6; Saunders, 1974, p. 108-125; Henderson's Winnipeg Directory

Table 4.5 - Selected Businesses in the Building Industry,
Winnipeg, 1901-1915

	1901	1906	1911	1912	1913	1914	1915
Architects	10	36	42	41	40	37	38
Carvers and Gilders	3	-	-	-	-	-	-
Concrete Construction	-	-	3	10	17	15	14
Contractors, Railway		14	30	15	12	12	16
Electrical Goods & Supplies	6	1	12	25	38	33	31
Electricians	2	22	26	33	47	41	45
Lumber Dealers (Wholesale & Retail)	16	45	68	82	96	91	92
Plumbers	10	59	49	58	68	67	86

Source: Henderson's Winnipeg directory

Table 4.6 - Miles of railway track in operation, 1907-1915

YEAR	MILES OF TRACK	CHANGE	% CHANGE
1907	27611		
1908	28695	1084	3.9
1909	30330	1635	5.7
1910	31429	1099	3.6
1911	32559	1130	3.6
1912	34629	2070	6.4
1913	38223	3594	10.4
1914	40605	2382	6.2
1915	45833	5228	12.9

Source: Urquhart, 1965, Table S77.

Table 4.7 - Letters Patent of Incorporation Issued to
Construction Firms, Manitoba, 1896-1914

N.B. No construction firms were incorporated in Manitoba
from 1896 to 1902.

Total no. of construction companies incorporated,
1903-14: 109

Total capital: \$11,755,000

Mean capital: $11755000/109 = \$107844$

Distribution of capital

\$1,000,000	2
160,000-750,000	11
150,000	12
125,000	1
100,000	24
60,000-75,000	6
50,000	11
25,000-40,000	11
20,000	23
<20,000	8

No. of companies incorporated each year

1903	6
1904	3
1905	3
1906	9
1907	3
1908	3
1909	7
1910	5
1911	21
1912	11
1913	23
1914	15

Incorporated Firms, by Year and Amount of Capital

	TOTAL	\$100,000		MEAN
		<\$100,000	& UP	
1903	6	1	5	174,200
1904	3	2	1	46,700
1905	3	1	2	106,700
1906	9	4	5	188,300
1907	3	2	1	80,000
1908	3	1	2	125,000
1909	7	5	2	135,000
1910	5	3	2	71,000
1911	21	12	9	75,000
1912	11	5	6	160,500
1913	23	13	10	110,400
1914	15	10	5	86,700
TOTALS	109	59	50	

Incorporated Firms, by Year and Amount of Capital

	TOTAL	\$100,000		MEAN
		<\$100,000	& UP	
1903	6	1	5	109,000 *
1904	3	2	1	46,700
1905	3	1	2	106,700
1906	9	4	5	86,900 *
1907	3	2	1	80,000
1908	3	1	2	125,000
1909	7	5	2	135,000
1910	5	3	2	71,000
1911	21	12	9	58,750 *
1912	11	5	6	76,500 *
1913	23	13	10	81,400 *
1914	15	10	5	57,100 *
TOTALS	109	59	50	

* indicates that mean has been calculated by excluding a firm with a very high amount of capital

Source: Manitoba Gazette, 1896-1914

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