SOME PRICE INDEXES
FOR QUEBEC AND MONTREAL
(1760-1913)\(^1\)

Gilles Paquet and Jean-Pierre Wallot
University of Ottawa
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Gilles Paquet is Professor at the Faculty of Administration and Director of the Centre on Governance and Jean-Pierre Wallot is Visiting Professor at the Institute of Canadian Studies – both at The University of Ottawa.
Introduction

The study of price trends is of paramount importance to the economist and the historian interested in the socio-economies of the pre-industrial era. The classic work of Thomas Tooke (1838) has demonstrated the point most forcefully. This is particularly true for the period of “commercial capitalism” that preceded, and in part overlapped with, the vast movement of industrialization in the Western world. During that period, the penetrative powers of the price system have been a most important formative force. In the Canadian socio-economy, while the rent bargain remained a pillar of the largely agricultural community in the 18th century, already the price bargain, driven by the Atlantic market, but also more and more by emerging local markets, played a pivotal role. Indeed, the Atlantic and the Canadian institutions were shaped importantly by these forces in the 18th and 19th century.

In Canada, many historians have collected various regional price data for the latter part of the 18th century and the first half of the 19th century. But we are still lacking a consistent and composite price index that could help to extract the trends in real income, real production, and real wealth for the century before Confederation. The existing indexes that have been used as deflators for arriving at estimates of trends in real standard of living or real standard of wealth are of limited use due to the fact that they pertain only to relatively short periods or are built on very skimpy data. Consequently, there is no meaningful price deflator for the period 1760-1867.

This article intends to fill this gap by presenting a consistent set of price indices for the cities of Quebec and Montreal from 1761 to 1867. In the case of Quebec, we have constructed price indexes drawn from the data for 20 products over 106 years, while for Montreal (where sources are much more limited), price indexes are based on data for 10 products over 101 years.

The next section of the paper examines rapidly the importance and complexity of price data in the economic analysis of pre-industrial socio-economies and provides a quick guided tour of the price series that have been recently built for Canada in the pre-Confederation period. Section 2 analyses...
critically the available sources for price information in Canada for that period, and the obstacles encountered in any effort to constitute solid price indexes on the basis of very incomplete, varied and sometimes incommensurable sets of price data. Section 3 presents the methodology used in the construction of the price time series and the price indexes. The results of this effort are presented in graphical form in Section 4 and spliced with Humfrey Michell’s price indexes for the latter part of the 19th century: our price series for Quebec is therefore extended in a bold and tentative way to 1913. Section 5 analyses the robustness of these results and identifies in a cursory way some of their implications for the historical dossier on this period of Canadian history.

More refined analyses of these price series are in progress using sophisticated statistical techniques to uncover some of the patterns herein contained. However, in order to ensure that the index in its present form is immediately useable by other researchers, we have decided to publish the indexes immediately. We have also prepared two appendices containing additional information. Appendix 1 details the sources of the data and the range of products found in the records as well as tables of useful concordances for quantities, monetary standards, etc. In appendix 2, the “basic reconstructed” price indexes for Quebec and Montreal are recorded. Those interested in more disaggregated data can obtain them from the authors.

1. About price data and the price indexes available

a. Prices as multivocal

Long-term price series have been used for quite some time by historians as broad instruments to record the pulse of certain sectors of the economy: the ups and downs of the economic experience with staple product economies, for instance. In the case of rudimentary economies based on one dominant staple product, the price series for the staple product often provides a reasonable approximation of the pulsations of the economy.

But, however fascinating these price profiles may be, they do not “speak” clearly in and of themselves; they must be analyzed if they are to reveal the nature of the important forces that underpin the movements recorded on time series graphs. Price trends are multivocal indicators. They reflect the impact of a whole range of circumstances affecting the supply and demand of particular commodities (temporary seasonal shortages, wars, technical improvements in production and transportation, modification of the state regulation of trade or taxation, the general business climate, prosperity or stagnation, the general state of the system of currency, etc.). Consequently, it is not always easy to interpret price trends for a single commodity: a price increase may equally well echo a local shortage or a wave of prosperity in the economy or any number of other particular circumstances.

The movement of a price index synthesizing the general price drift (from an aggregation of the price trends of a number of commodities) casts a much wider net and captures a much broader picture. Such an index is in some sense easier to interpret as taking the temperature of the socio-economy. A major period of price increase is likely to be closely related to either an expansion in the real general level of economic activity or an across-the-board increase in costs of production, or to a general inflation
or deflation pressure generated by specie flows or the actions of the monetary authorities. In the former case, a change in real aggregate demand or supply is the source of the price increase or decrease; in the latter case, the debauchery of the currency may generate a depreciation of the value of money as a mean of exchange, and a consequent increase in the level of nominal prices, or the vagaries of the monetary system may bring about the adverse.

A good example of a combination of these two forces is the experience of New France in the first two decades of the 18th century. One may observe price increases after 1708 both as a result of the opening of new external markets and of the inflationary card money scheme.6

a. Prices as manifold tools of analysis

Price are only one diagnostic indicator of economic activity. They are not sufficient as economic indicators to define accurately and definitely the fundamental economic character of a period. Not only do they require much interpretation based on a good understanding of the nature of the type of price mechanism that underpins them, but it must be recognized that they echo dramatically different realities in a proto-market economy, in a planned economy, and in a commercial capitalist region. These difficulties should not lead one to believe that such an instrument is useless. When handled with due diligence, price trend analysis can contribute significantly to the development of a reasonable diagnosis about a socio-economy.

Price data can also be handled as deflators that can be applied to wage and other income or wealth series to ascertain the evolution of real wages, real income, and real wealth over time. This makes possible comparison of real standard of living across regions or over time.

Price data may additionally be most useful in establishing the degree of economic integration of the different segments of an economic space or region. When the different segments of an economic space are very well connected by a working network of markets and a fair degree of economic integration prevails, price trends are closely co-related as a result of on-going arbitrage between the sub-regions.

However one must remain extremely cautious in interpreting price data. For instance, there is often evidence of price stickiness or “un-natural” price stability in certain markets where the quid for the quo transactions are much more complex than a simple exchange of commodity for money. Already in 1972, Abraham Rotstein has shown that, in the fur trade for instance, a very complex set of quids and quos (including price but also various political, symbolic and security dimensions) reduced dramatically the role of prices.7 And much has been written in the same vein since.

On the other hand, it would be equally unwise to underestimate the penetrative powers of the price system and their explanatory power. Institutional changes of all sorts (like the emergence of property rights in land in certain North American Indian tribes for instance) are alleged to have been triggered by the process of commercialization (by the price increases of fur in this particular case).8 A careful price analysis may therefore help to throw much light on many aspects of the process of institutional change.
c. Price data available

In the 1930s, there was a great interest in the history of prices in the pre-industrial era. The work of Simiand, Labrousse, Hamilton, Beveridge and others led to a most important flurry of prices studies that have illuminated many aspects of the evolution of Western economies. This work was continued by following generations of historians, notably the Annales group and a number of British and American historians.9

This widespread movement influenced a certain number of Canadian historians. Already, there had been some work initiated by Adam Shortt’s economic history of Canada in the series Canada and its Provinces in the second decade of the 20th century.10 In 1931, Michell examined agricultural prices back to 1848 and studied the general wholesale price for the period 1868 to 1925.11 But his probe did not backtrack very far in the pre-Confederation period. Other authors such as Innis, Creighton and Lower compiled bursts of statistics on different products or issues, but did not attempt to construct long term price series or indexes.12 Some of these statistics, and numerous other ones drawn from censuses, etc., were later compiled by Urquhart.13 But the only available reliable series of price statistics exist solely for the post-Confederation period.

It is only much later that an interest developed for the study of earlier price data in Quebec and Montreal. Important pioneering work was done in the 1960s: first by Jean Hamelin for the pre-1760 period,14 then by Hamelin and Fernand Ouellet for the period 1760-1850.15 These data were mined by Ouellet in three of his major books.16 The authors of the present paper have also constructed price series and indexes for different segments of the 1790-1835 period, while Louise Dechêne collected data on the evolution of the prices of wheat in Montreal prior to 1760.18 Since then, despite important works documenting all kinds of aspects of the socio-economic conditions in pre-Confederation Canada – demography, urban growth, social differentiation, trends in migrations, in exports, in the production of wheat or other agricultural products and techniques, in the standards of living, or studies focused on a specific region or on specific individual prices –, very little new work has come forward except for the publication in 1982 of data collected in the 1960s by Ouellet, Hamelin and Richard Chabot.20

d. Three preliminary attempts at price indexes

As mentioned earlier, we have taken part, on and off, in this investigation into pre-Confederation price data. We have worked (1) first at developing a very extensive data base drawn from the account books of religious orders, of merchants, also from public records, including the Journals of the House of Assembly, military papers and the like, from the newspapers, printed flyers, etc. and (2) then at analyzing this data base to produce a variety of price indexes designed for specific uses. We have also drawn occasionally from our work on inventories after death (where price estimates are available on a large range of products), not so much to construct an index (estimates are not good enough, particularly when they are arrived at by different persons in different places) as to detect certain anomalies or to ascertain the plausibility of some “reconstructed” prices.

This led to three different sets of price series and indexes published by the present authors in 1967, 1975 and 1988.
(1) 1804-1813

We uncovered a very rich source of price data for the turn of the 19th century (the official prices on the Quebec market) which we used in our 1967 article. But this series unfortunately covered only less than ten years. This very rich material was especially useful in that it allowed us to demonstrate that the seasonal component in these series was so important that it had to be taken into account when dealing with incomplete price series – the only sort of series one can find most of the time. Not to do so would entail the risk of “detecting” fictional price increases or decreases from one year to the next simply as a result of differences in the seasonal pattern of observations for each year.

(2) 1792-1812

We also culled the religious archives existing at the time, the merchants’ account books, public records of all kinds, and newspapers to gradually build up price indexes for Quebec and Montreal for 32 products (agricultural and non-agricultural) for the period 1792-1811. These indexes, covering such aspects as food, drink, clothing and construction materials, were published in 1975. This rich data bank of monthly or seasonal prices corroborated some of our 1967 findings and reinforced our contention that the casual use of yearly averages built on data collected for different months of the year can be grossly misleading. Prices drawn from season A in one given year and season B for the next year might show a shift in conjuncture that is a pure “artifact”.

(3) 1792-1835

As our research interests extended till 1835, we felt the need for reliable price indices based on quarterly prices for a wide range of products. This led us to explore anew the basic sources of religious orders existing at the time, the official documents and newspapers, and some merchants’ records when they covered a sufficiently long period (such as the Neilson papers, for instance). This proved to be a very time-consuming quest. In the meantime, there was a pressing need for some deflators. We developed some very rough price indexes for Quebec and Montreal based on six products from the data available in Chabot, Hamelin and Ouellet (1982). These products were chosen because of the fact they seemed to be the most complete and continuous annual price series: they did not show significant gaps for the period we were covering (1792-1835).

Even though these sets of price series were useful, and helped us in deriving many useful approximations and in bolstering many of our hypotheses, such series did not provide the consistent long run price index that was deemed necessary by all the researchers on pre-Confederation Canada.

2. Sources used and the challenges they pose

The construction of long-term price series for pre-Confederation Canada cannot rely at any time on one permanent and reliable source. Thus one cannot easily ensure a standardized array of comparable products and prices across the seasons for each year. For nearly all of the products, there are many diverse sources, and available information on any of them suffers from “lapses”: products disappear from the records for a few months, for one or many years, or they acquire new labels or
characteristics. Many religious orders do not have complete account books covering all the months and years and all of their activities (some having been destroyed or lost). Surprisingly, certain products that are bound to be regularly consumed are not regularly mentioned in the account books while others, which could be deemed to be more exotic, appear suddenly and disappear as suddenly from the records. Thus in the end, despite the wide array of products arranged in different account books, very few of them can be relied upon to sustain a long-term price index.

a. Price of what?

The characteristics of the products, their unit of measure and the currencies in which their prices are expressed change through time. The first two are often so vague that it becomes sometimes impossible to use a price available for one product because of the fact that one cannot decipher what the unit of measure means. Also, vague mentions of a generic product are often followed by very specific product definitions, thus jeopardizing efforts to arrive at price series corresponding to a standardized product. For instance, beans may be quoted without any additional information on a certain page of an account book, then they may be presented a few pages later as distinct when they are “white” or “green” beans (with different prices), which makes one wonder, of course, what kind of beans were referred to two pages before in the same account book.

Different monnaies de compte or types of currencies are used as well, so that strict equivalencies among currencies must also be established. Moreover, prices found in religious orders’ account books and merchants’ account books do not necessarily reflect official retail prices on the markets in Quebec or Montreal, or match the data collected from newspapers. One must therefore make a decision about which prices may be used in the compilation of a coherent retail price series. However, because of the numerous gaps in the data, prices originating from many of these different sources must be used if one is to get a full array of prices across all seasons or continuous series through the years. This creates huge methodological problems.

b. Narrowing the field of study

Given the fact that the sources are quite varied (and the search quite time-consuming and impossibly costly), it has become essential to narrow considerably the scope of our investigations into prices ab ovo. We have limited our investigation (after the first flurry) to a range of some 70 products. We selected the most promising commodities on the basis of a preliminary examination of the data. Then we carried out a systematic data collection in the archives of the Monastery of the Augustines, of the Hôtel-Dieu of Quebec, of the Hôpital Général of Quebec, of the Seminary of Quebec, of the Notre-Dame of Quebec parish, of the Jesuits’ Estates, of the Congrégation de Notre-Dame (Quebec and Montreal), of the Ursulines of Quebec, of the Hôtel-Dieu of Montreal, of the parish Notre-Dame-de-Montréal, of the Sulpicians and their estates, including the Domaine St-Gabriel and des Prairies as well as St-Joachim of Pointe-Claire and St-Joseph of Rivière-des-Prairies.

We have also mined other types of private sources such as a large number of merchants’ account books in the National, Quebec and McCord Archives, mostly for 1786 to 1815, as well as printed flyers (of which only a few copies have survived, generally printed in Quebec), the newspapers (notably the Quebec and Montreal Gazettes, The British American Register, The Quebec Mercury, The
Canadian Courant and Montreal Advertiser, Le Canadien, La Minerve, etc.), quite irregular in their reporting and most of them incomplete, public records such as the military records (C series, rich in prices on construction, the cost of labour, etc.), C.O. 42 and Q. Series (correspondence between the Governor and London), the Journal of the House of Assembly. (See appendix 1 for a more comprehensive list of sources and the list of products).

(c. Québec and Montréal)

Prices are much more difficult to locate on a regular basis for Montreal than for Quebec,24 but there is still much information to build on. They may be subsumed under four general headings: account books of institutions, private merchants’ account books, newspaper data, and official price series. The four series were processed in parallel.

We have collated the products and prices in the account books of each of the religious orders existing at the time and also in major institutions such as hospitals and seminaries in the two cities. Some data were collected from account books that originated from farms outside the city limits (for instance, in different parts of the Island of Montreal or at the outskirt of Quebec). Since the prices of these products are usually very close to the prices relating to sales in the city for the same institutions or religious orders, we have eventually amalgamated these prices in a single series for the religious orders, but we have excluded distant seigniories or farms, such as in the case of the Jesuits’ Estates, when the prices are clearly established as emerging from another region.

This material is the richest source and the most consistent of all the series over time. Generally it follows closely the “market” prices, when they exist, and can be considered, as Hamelin and Ouellet have asserted,25 the closest one could find (in any significant series) to retail prices.

We also aggregated the data gathered in private archives, mostly merchants’ account books, in a different folder, excluding however “wholesale” prices, when they were thus identified. We followed the same procedure for the newspapers and, finally, for the official series (market prices sent to London for information and generally concerning Quebec), or information appearing occasionally on flyers, or prices for the victuals and other products used by the military establishment in the colony. In the latter case, these readings may be misleading as they concern huge quantities of wheat, flour, pork, beef, peas, etc., thus probably represent wholesale prices.26 The same reasoning applies to the prices (mostly of non-agricultural products) published in the Journal of the House of Assembly in years when there have been important construction activities. There are important gaps in all those price series (for most of the products). This is especially true for Montreal, in particular, until the 19th century. However, these series can be meshed very prudently when the differences between them are not significant.

While recognizing the theoretical differences between the export price, the wholesale price, the semi-wholesale price (the prices paid by consumers on the public market) and the retail prices,27 in practice, we found out that it was not always possible to determine exactly what sorts of prices we were faced with. When in doubt or when price data proved too discordant -- given what we knew about the period --, we have eliminated them from our files.
d. Different currencies, different units of measure

Another difficulty stems from the different currencies in circulation and *monnaies de compte* used at the time. The problem is not however as daunting as it first might appear: for the period 1760 to 1790, most of the prices are in the French “livres de 20 sols” - not the “livre tournois”; and given the relative stability of exchange rates after the first few years of uncertainty in the 1760s and early 1770s, it was not a major problem to “translate” all currencies into the “livre française de 20 sols”, thus building on a single monetary value or standard. This is particularly important as with time, even religious orders will sometime use shillings or “piastres” (for instance, the Congrégation Notre-Dame as of 1843).

Much more difficult was the bizarre equivalencies between measures of quantities. One can find easily regular prices for beef, pork, lamb, veal or other meat in the account books, but how much can a “quarter” weigh and how can we compare its price to that of another “quarter”.

Yet another difficulty had to do with the “quality” of the different products: there are quite a variety of adjectives used to “qualify” the commodity (“old”, “rusted”, “average”, “bad quality”, “fine”, “superfine”, etc.) that obviously impact on prices. Rum is mentioned as such sometimes; at other times, there is a distinction between “Leward” and “Jamaica”, and it comes by the pot, the gallon, the keg, the puncheon (puncheons have been known to contain between 84 and 114 gallons!). Candles may be bought by unit, by the dozen, by pipe and chaldron. Tobacco presents itself, when there is specifications, under many forms: “Leaf American”, “Plug Canadian”, “pig tail”, “manufactured”. There is “English”, “Liverpool” and local salt, apart from just salt and “average”, “fine” and “big” (“gros”) salt.

Lamp oil is bought by the gallon or the pot or the quart; molasses, by the ton (104 gallons, 110 gallons?) or gallon. “New” and “old” hay do not fetch the same price and is quoted sometimes by the 100 or 110 bundles. Flour (no mention, “fine”, “superfine”) can be found by the hundredweight (“cwt”) or “quintal” (112 lbs), but also by the barrel (between 196 and 224 pounds, with an average of 210 pounds), by the bushell and by the bag. Wheat may be without mention or suddenly become “stained”, “bad”, “black”, “tythe” wheat.

Firewood is sold by the cord, by the “cage” (presumably floated down a river or the St-Lawrence), is without any specification or suddenly presents various prices for hard wood, maple, birch, and other varieties. Coffee comes by the pound, the barrell and the cask; coal, by pipe or chaldron, cask or even “minot”.

Religious orders’ account books often do not make a difference between one chicken and a couple of chicken: if the price soars above 20 sols, we know it is for a couple. Butter is without specification or “melted”, “fresh” or “salted”. Beef is bought by the quarter, by the barrell or by the pound, with the butcher’s prices being about 20% to 25% above that mentioned for the public market. Fish (a barrell of eels, a “hand” of cod, a “bag” - “pochetée”- of many other species, including trout, sparling, sturgeon and salmon) is very important in eating habits, yet cannot be properly appraised in a price index.
One can find also a quarter, half, three quarters, remains ("débris") of veal. Red, white and Port wine, without specification or with a mention of the origin - such as France or Rhine or Portugal - may be bought by the bottle, the quart, the pot, the hogshead or cask. There are floor, covering, “battoe”, shingle nails; Canadian, French, beef and militia shoes; Hyson, Twankay, green tea; linseed oil and raw or boiled linseed oil.

These are but a few examples of the challenges that had to be met in the production of these indexes. In each case where some comparability could not be maintained or where the available information was not sufficient to allow a reasonable estimate, the information had to be discarded. This explains why, after enormous efforts to collect mountains of information, we were forced to be satisfied with price series for very few commodities and products indeed. Less reliable but still useful information can be garnered from the sources - and our work sheets - on a wider array of products for shorter periods, but with gaps of quarters or of years. A long-term price index of multiple commodities cannot integrate these fragments.

3. Methodology

The methodology used to construct the price indexes may best be described as a five-step approach.

Phase I: construct quarterly averages from scattered monthly data for individual products

It was decided early on that the data base was not complete enough to allow us to compile monthly series. The best that could be hoped for is a quarterly series of prices for each commodity. But even this quarterly reading could not be arrived at without some trepidation. This is due to the fact that data originate from many sources and often correspond to different months in a given quarter.

The only way to arrive at one reading for the quarter has been to take a simple average of the readings available for the months of this quarter (I = January, February, March), (II = April, May, June), (III = July, August, September), and (IV = October, November, December) -- either for Quebec or Montreal. But even this fairly loose approach cannot generate readings for each quarter.

Phase II: calculation of a seasonal index for individual products, regions and periods

In the second phase, we developed a seasonal index for each product, for each region, and for a number of sub-periods using the method of ratio to moving average

a. calculation of a moving average over four quarters for each product from the data available from Phase I

This is a two step process. First a moving average for four quarters is calculated. This moving average for the four quarters of one calendar year for instance has its
center of gravity falling between the second and third quarter. So as a second step, one must calculate the average of two moving average values – the moving average one quarter back (i.e. pertaining to the last quarter of the year before and the three quarter of the current year which has its centre of gravity between the first and second quarter) and the moving average for the calendar year (with its center of gravity falling between the second and third quarter) – in order to obtain a moving average value centered on the second quarter.

Using the same procedure for succeeding pairs of moving averages, one can obtain a series of moving averages centered on specific quarters.

b. calculation of a seasonal index for six sub-periods on the assumption that, with the modernization of transportation and production methods, the seasonal pattern of prices may have evolved.

For each of the sub-periods (1760-80, 1781-1800, 1801-1820, 1821-1840, 1841-1860, and 1861-67), a seasonal index has been calculated separately for Quebec and Montreal and for each product. This was done by dividing the observed price for every quarter by the moving average value for this quarter, if there is an observation for that quarter. Then the sum of these ratios over the same quarter for the whole of a sub-period is divided by the number of observations. One secures in this way an approximation to the seasonal index value for the particular quarter, for a particular product, for a particular sub-period of historical time.

In order to make sure that the seasonal index is not biased, it must add up to four for the four quarters. If it were higher than 4, the index would tend to overstate the annual average if it were used to construct it; if it were less than 4, it would tend to systematically understate the annual average if it were used to produce an annual index. So in order to ensure that the sum of the indexes over the four quarters adds up to 4 exactly, if this sum overshoots or undershoots, the four quarterly indexes are adjusted in the same proportion downward or upward.

Phase III: use of the seasonal index to fill the gaps in the price series of individual products

This is accomplished rather simply by a two-step process. First, one calculates the value of the price of commodity X for the quarter of a given year where data are missing (say the 3rd quarter of year 10) by two applications of a simple règle de trois – (1) the price of the product for the 2nd quarter of that year divided by the seasonal index for that quarter and multiplied by the seasonal index for the missing quarter, and (2) the price of the product for the 4th quarter of that year divided by the seasonal index for that quarter and multiplied by the seasonal index for the missing quarter. Then, one computes the simple average of these two estimates to arrive at the proposed price information for the missing quarter.

Phase IV: calculation of annual prices for each commodity for the whole period
We have concentrated here on producing a consistent annual price index for each commodity both for Quebec and Montreal.

**Phase V: construction of various price indices**

The great difficulty in extracting price indexes from these annual price series has to do with the weights to be used. We do not have a sufficiently rich portrait of the evolving patterns of consumption over the century to generate from them an evolving and reasonably accurate set of weights. Consequently, we have been satisfied with an exploration of the robustness of the results using a variety of weights.

Four different sets of weights were used for Quebec and three different sets of weights were used in Montreal. Despite wide variations in the weights, the general profile of the price indexes proved quite robust. Consequently, we have retained the simplest version of these weights structure (5% for each of the 20 products in Quebec, and 10% for each of the 10 products in Montreal).

The annual indexes still register wide variations. So we have smoothened them by using a 13-year moving average of both price series.

**4. General results in graphical form**

This elaborate process has generated an immense amount of data. Some of the detailed information is available in appendix 2.

In this section, we simply present some basic results for the annual price series. Then we compare our results with the 32-commodity price indexes for Quebec and Montreal that we have published in 1975. Finally, we show how our price series would appear to dovetail sufficiently with Michell’s price index for the period 1848-67 (based on data for 15 products) to allow us to splice our Quebec price index to his in order to generate a continuous price index for the whole period 1761-1913.

**a. A presentation of our price indexes**

The following figures or graphs are presenting the general profiles of the annual price indexes in Quebec in a raw form together with the 13-year moving averages (Figure 1). Figure 2 provide the same results for Montreal. Figure 3 shows the parallel evolution of the price indexes for Quebec in Montreal when they are compared in their raw form and Figure 4 shows their parallel paths in the 13-year moving average versions.

The parallelism in the price index profiles for Quebec and Montreal revealed in Figures 3 and 4 may be regarded however with suspicion by some observers since they correspond to different baskets of commodities (20 in Quebec, 10 in Montreal). In order to eliminate any such unease, we have calculated for Quebec City another price index pertaining only to the 10 commodities retained in the Montreal price index. This 10-commodity Quebec price index together with its 13-year moving
averages are presented in Figure 5. Figure 6 compares the profiles of the 13-year moving averages for the Montreal 10-commodity price index and for the 10-commodity and the 20-commodity Quebec prices indexes.

In general, from these simple graphical summaries, it is clear that the patterns of price levels and movements have an uncanny congruence. Moreover, these patterns correspond to those observed in other parts of the Atlantic World, for instance in France, Great Britain and the United States.31

Both in Quebec and Montreal, price levels increased from the 1760s to the 1780s. There was a sharp price decline in the late 1780s and early 1790s, and a long price trend upward from the turn of the century to the beginning of the second decade of the 19th century. Followed a long price decline from the 1810s to the 1840s, and a revival afterward from the 1840s to the 1860s in Quebec. In Montreal, the price decline was much shorter and the revival may be said to begin in the 1820s although the sharp increase in prices did not occur until the 1840s.

The price trends in Quebec and Montreal are very closely co-related from 1760 to the 1820s with the prices in Montreal tending to be a bit lower than in Quebec. But while the long price slump that began in the early 1810s will continue until the late 1840s in Quebec, it only lasts until the late 1820s in Montreal; from then on prices are on the upswing in Montreal – rising sharply at first, tending to stabilize from the mid 1830s to the mid 1840s, and then rising very sharply again. But, after 1840, the trends follow the same pattern in both cities, albeit with the Montreal price indexes now at a higher level than those in Quebec. However, even in this new configuration, there is a strong co-relation between the series. Finally, while in the 18th century, price levels in Quebec would appear to be more volatile than those in Montreal, one may observe the reverse in the 19th century.

b. Comparing our new annual price indexes with the 1975 32-commodity price indexes

Since the base year for both our new annual price indexes and our 1975 32-commodity price indexes is 1792, it is rather easy to show how closely related the two sets of series are. This is presented in Figures 7 and 8.

Quite clearly the two series are more closely co-related in Quebec than in Montreal. In Montreal, the broad trends are identical but the new series is more volatile and its turning points are much more sharply delineated than in the 1975 index, which comprises a much wider variety of products, locally produced and imported.

c. Splicing our Quebec price index with the Michell price index

Michell32 has constructed an agricultural price index pertaining to 15 commodities33 for the period 1848-1913. Seven products are identical to our price data for our Quebec price index. We have recalculated both indexes on the basis of 1860 = 100, and we have superimposed our Quebec price index for 1848-1867 to the Michell index for the same period.

As can be seen in the following graph (Figure 9), the co-relation between the two indices is sufficiently strong to warrant our using the Michell index to complement the one we have constructed.
The spliced price index constructed from our Quebec price index 1761-1867 and the Michell price index from 1868-1913 and with a base 1860 = 100 is presented in Figure 10.

This is an adventurous splice but one that has the advantage of providing a very rough price index covering some 150 years. Until a more refined instrument is available, this may serve as a rough deflator for this long period.

5. Preliminary analysis

a. Probing the two broad families of forces at work

One may suggest that two broad families of forces are having a dominant influence on price level.

The first one refers to the extent to which there are real changes in the conditions of aggregate demand (AD) or supply (AS). Using a very simple supply-demand scheme of analysis, it is possible to show that as AD shifts to the right as a result of strong market conditions abroad or general prosperity at home, price level will rise. In difficult times in external markets or in poor market conditions at home, AD shifts to the left and price level declines. There may also be important real shocks to the socio-economy from the aggregate supply side: as when major generalized crop failures or natural catastrophes generate scarcity and price increases. Price may also decline and output levels increase with technical improvements and productivity gains.

The second one has to do with the monetary or financial conditions in the economy. The monetary and financial technology has evolved considerably over the century or more covered by our price indexes. Moreover, the monetary and financial conditions in the Atlantic economy and on the American continent will impact strongly on price behavior. A general shortage of currency or precious metal (as was experienced between the first and the second decade of the 19th century) will translate into a recession and a period of price deflation.

A rigorous analysis of the conjunction of these two sets of forces in the explanation of specific price movements over more than a century is not possible in a few paragraphs. Moreover our knowledge of business conditions and of the financial circumstances remains too fragmentary: a true account of both sets of forces and the development of tractable indicators capable of taking into account the very important institutional changes must be postponed to another occasion.

However, it is possible to glean from the available information some impressionistic portrait of the forces en présence or at the very least, to suggest some preliminary observations that might indicate which one of those families of forces would appear to be dominating the scene at particular times.

b. Some provisional observations

On the one hand, it would appear that the real factors have dominated the conjoncture in the 1770s (significant economic progress), 1780s (frequent crop failures and poor market conditions), and 1790s...
(growing demand, production levels and prosperity). On the other hand, the long period of price increase from the 1790s to about 1815 has been the result of the conjunction of both series of forces. The erratic but sometimes strong external markets, as well as quickly expanding local markets after 1805 generated much demand for Canadian goods and most certainly was at the source of Canadian price increases.

The long decline in prices from the middle of the second decade of the 19th century till the end of the 1840s is observed in most areas of the Atlantic economy. The somewhat sharper drop that is observed at times in the Quebec economy can be ascribed in part to the Quebec socio-economy suffering from a slower growth that the other three regions at the core of the North American continent (Ontario in great expansion and soon the West, New England to a lesser degree, although buoyed by early industrialization, and the American MidWest). This relatively slower growth in the eastern portion of this economic space led not only to price decline but also to massive emigration After 1850, the economic conditions improve considerably with railroad construction, the industrial development along the Lachine canal and some other points in the province, the Crimean war as a source of external demand, the Reciprocity treaty, the American Civil War and the greater reliance on Canadian products. But again, except in the 1850s, the Lower Canadian portion of the Province of Canada did not partake in this prosperity era as much as might have been expected.

The early 1860s experienced a disastrous price decline but there was a revival in the middle of the decade as a result of the Civil War in the United States. The sharp price declines and rises later in the 1860s and at the turn of the decade echoed price changes in the Atlantic economy. Indeed from that point on, one may trace very nicely the booms and busts of the broader economic system: from 1873 on, business was bad. There was a sharp price reaction to the 1878 high-protection policy, but already by 1883 prices were falling following the worldwide financial crisis, and this was to continue until the middle of the 1890s. After 1896, a fortunate conjunction of factors (growth of urban population, the settlement of the West, etc.) lifted prices until 1913.

One must add that the long periods of price decline from 1815 to the late 1830s and the other from the early 1870s to the middle of the 1890s correspond to major improvements in transportation, to technological change, and to the removal of many impediments to foreign supply.

Whether these rough comparisons can be corroborated is a matter that will require more extensive work and also a much more detailed analysis than the one we can provide in this article. What can be said in a summary way however is that the period from the 1760s to the end of the 19th century corresponds to three well defined price cycles (1760s-1790s, 1790s-1840s, and 1850s-1900). The variance of prices over these cycles ranges some 50% on each side of the base point and therefore makes it impossible to rely on nominal values for income and wealth to ascertain real values.

Finally, one must remind the reader that these observations, based only on price data, are not meant to etch a vignette of the economic history of Quebec during this period of 150 years. Rather, they only wish to suggest a certain number of hypotheses about the main forces at work during this period.
Conclusion

Our objective in this paper was to develop a coherent picture of price evolution in the century before Confederation and to splice it with some of the existing price series developed for the period 1867-1913. The use of such a tool for purposes of comparison between periods is obvious and the lack of such an instrument has been a major impediment to careful analyses.

We have explained carefully how we have constructed these price indexes from bits and pieces of information gleaned from a variety of sources, and we have attempted to ensure that the potential users of this tool are quite aware of both the robustness and the weaknesses of these consolidations.

We have also extended our price series by using the work of Michell on the post-Confederation period after having established that his price series seemed to co-relate rather well with ours for Quebec for the overlap period of 1848-1867.

Our results are still preliminary in so far as they do not present any technical analysis of these series. This is work to be undertaken in the next future. We have tried, however, to distinguish in what way such a series might at least appear to be corroborated by what we know about the general economic history of the period.

We do not feel that price series are sufficient to recreate the economic history of the period any more that a few snow flakes in one’s hand can help reconstruct the storm that brought them down. However, as we have shown, there are a number of important benchmarks that such series might provide.

We therefore conclude on both a caveat emptor and an expression of our hopes that these indexes that were so long in the making and so tedious to construct will be of use to some colleagues.

GP/JPW

Notes

1. This article is a revised version of a paper presented to the annual meeting of the Canadian Historical Association in Ottawa on May 30, 1998. Financial support for the final phase of this work has been provided by the Social Sciences and Humanities Research Council (410 98 0333). Over the years, many research assistants have provided invaluable help with data collection for
this project. A comprehensive list of all those who were involved episodically is too long to reproduce here, but we must acknowledge the important contribution of Hélène Paré, Françoise Faribault, Jane McLeod and Rita Girard. We must also thank Marc Racette and Christopher Wilson who have been most helpful in the final phases of the project.


3. Our original research on the period 1792-1812 attempted to be very comprehensive and to include as many products as possible in our data collection. The extensive list of products that were noted and the fact that they appeared regularly in the account books of religious institutions, hospitals and seminaries, illustrate the wide diversity of products available to consumers in Lower Canada at the time. A list (incomplete) of products is presented in appendix I. This work helped us, in our efforts for the years 1760-1791 and 1813-1867, to focus on a narrower set of products that had more chance to spring up regularly.

4. The worksheets from which the indexes were extracted, the different consolidations and other working papers will be deposited at the National Archives of Canada so that they can be used by scholars interested in the price data for specific products including those not retained in the construction of our own price indexes for 1760-1867. In many cases, the price data collected are sufficient for a meaningful analysis of shorter periods and of specific products that had to be dropped because of lacunae in certain years. It would have been different if we had simply attempted to approximate indexes of specific and separate products over time, with gaps here and there (for instance, see Douglas McCalla’s treatment of such “produce prices” turned into specific indexes for products in Upper Canada, in Planting the Province, The Economic History of Upper Canada 1784-1870, Toronto: Univ. of Toronto Press, 1993, appendix C).


12. Apart from his classic The Fur Trade (1939) and The Cod Fisheries (1940), Harold Innis has written many interesting essays (see his Essays in Canadian Economic History, Toronto, 1962); Donald G. Creighton, The Commercial Empire of the St. Lawrence, Toronto, 1937; Arthur R.M. Lower, Great Britain’s Woodyard: British America and the Timber Trade, 1763-1867, Montreal, 1973.


18. Louise Dechêne, Habitants et marchands de Montréal au XVIIe siècle, Paris: Plon, 1974. More recently, in her Le partage des subsistances au Canada..., she presents a table of the prices of wheat in Montreal (1675-1759) and in surrounding parishes (pp.197-198), based on her previous work and on Sylvie Dépatie’s PH.D. thesis (L’évolution d’une société rurale, L’Île Jésus au XVIIIe siècle, McGill, 1988).


21. In comparing prices from the inventories after death and sale prices following the inventories (these “procès-verbaux de vente après inventaire” exist for nearly 21% of all the inventories; and in 71.3% of these cases, the commodities sold match those appraised in the inventories at a level over 90%), we have found that real sale prices surpass the estimated prices by nearly 140%!

22. In 1982, Fernand Ouellet claimed that in our 1967 article, we denied all value to the 1966 Hamelin-Ouellet series (“Les prix agricoles dans les villes et les campagnes...”, note 17). This hardly reflects our cautious approach. One must remind the uninformed reader that the details of the data used by Ouellet in his works (from the 1960s to 1982) remained unavailable until the 1982 paper, so one was asked a blind act of faith that the series used were reliable without any evidence. Moreover whatever was in the public domain -- the graphs or tables in his Histoire économique et sociale du Québec -- was often presented in a confusing way. This justified a very cautious approach. Indeed, once the basic data were available in 1982, and it became possible to extract from this material some useful series, we did. We used them as the basis for a rough six-product price index to deflate some economic series. (See the result notably in G. Paquet and J.-P.

23. Even in the case of fairly obvious products, such as wheat, peas, etc., Hamelin and Ouellet’s series show some such “lapses” for many years, particularly in Montreal. This is a problem that confronts every historian: the sources are nearly never providing continuous series, except perhaps for the general annual averages prepared by the Jesuits and Sulpicians for the prices of wheat in Quebec and Montreal. And in this case, one remains unclear as to how these recapitulations of annual averages have been constructed.


26. For instance, the C series regularly identifies the prices for large quantities of victuals bought to nourish soldiers. The quantities are so huge that one cannot actually use directly those prices except as another indicator or a check on other prices. For instance, the _rations of soldiers in Canada_ in a year are the following: 5250 soldiers need 7731350 lbs of flour, 4375016 lbs of pork, 27600 minots of peas, 338840 lbs of butter and 451786 lbs of rice. Although the annual average per soldier may seem high, perhaps the army did take into account some percentage for spoilage or else, soldiers ate very well!

27. For those distinctions, see Jean Hamelin et Fernand Ouellet, “Le mouvement des prix agricoles...”, pp. 36-37.

28. The “livre française ancien cours” or “livre française de 20 sols” is different from the “livre tournois”. The different account books, from religious orders but also from private merchants such as Guy, indicate that there is the same difference between the “livre de 20 sols” and the “livre tournois” as there is between the pound Halifax currency and the pound sterling (English currency): that is, in both cases, 10 livres or pounds in the colonial currency are worth 9 livres or pounds in the mother country’s currency. The confusion may come from the fact that all “livres” comprise 20 sols and each sol, 12 deniers, the same as all pounds comprise 20 shillings and each shilling, 12 pence. When notaries or account books want to indicate the “livre tournois”, they always specify “tournois”. If that adjective is not there, one must assume the currency is that of the colony or “ancien cours”. This difference, although not catastrophic, could warp long-term price indices to a certain extent. In the case of the series used by Hamelin et Ouellet, who do not make the difference between these French currencies (“Le mouvement des prix agricoles...”), pp. 37-38,
and “Les prix agricoles dans les villes et les campagnes...”, pp. 88s), it may not matter all that much as their sources (essentially religious orders’ and parishes’ account books) are mostly in “livres de 20 sols” and its relationship to the colonial pound or Halifax currency is well known (see the table in appendix I). Given the fact that we use many types of sources, we have converted all the currencies and prices in “deniers” (in the French currency “livres de 20 sols”). We are helped by the fact that the *monnaies de compte* maintain the same equivalencies for the whole period, except right after Conquest, in the official documents and account books. See for instance A.B. McCullough, *Money and Exchange in Canada to 1900*, Toronto: Dundurn Press, 1984, table 40. Although McCullough calculates the variations in the rates of exchange of Bills on London (thus with variations in the Sterling Exchange depending on the season, the quantity, etc.), there is nothing to support any change in the conversion rates of the different currencies in account books or in legislation. Douglas McCella suggests that from 1820 onward, L sterling would be worth L 1.217 Halifax currency instead of the regular 1.111, but he does not seem to take this into account in his own calculations in the appendix C on prices nor is it clear where he derives this shift from (*Planting the Province...,* pp.246, 327-345). At any rate, for Lower Canada, there is no problem as prices used are quoted in local currency (Halifax or “livres de 20 sols” or “piastres”) after 1820.

29. The products are the following: oat, butter, wheat, beef, firewood, coffee, candles, coal, flour, hay, burning oil, molasses, eggs, straw, potatoes, peas, chicken, rum, salt, tobacco.

30. Oat, butter, wheat, beef, firewood, flour, hay, eggs, peas and chicken.

31. Fernand Ouellet et al. had already noted the parallel patterns of some prices between these countries. For instance, see “Le mouvement des prix agricoles...”, pp. 44-48 et passim. D. McCalla also provides some comparisons for wheat and flour (*Planting the Province...,* p.344).


33. These are: oat, bacon, butter, wheat, beef, flour, oat flour, cheese, ham, back-fat (lard), eggs, barley, peas, pork and rye. Seven of these products appear in our own indices: oat, wheat, butter, beef, flour, eggs and peas.

34. The impact of the lumber boom which quadrupled exports between 1806 and 1810 cannot be overemphasized. Also, there is the rapid development of villages across the colony (see Serge Courville, *Entre ville et campagne. L’essor du village dans les seigneuries du Bas-Canada*, Quebec: Presses de l’Université Laval, 1990).


36. For an early analysis of this shift of prosperity from East to West, see Albert Faucher,*Histoire économique et unité canadienne*, Montréal: Fidès, deuxième partie, chap. 7.