How Costly was Canadian Protectionism: 1875-1910?

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Abstract

A common view among Canadian economic historians is that at the end of the 19th century, Canada's trade policy was protectionist and extremely costly. The empirical work supporting this view is predominantly based on average tariff measures, and as a result, may not be capturing the true levels of protection - nor its true welfare costs. In this paper, we construct a partial-equilibrium version of the Anderson-Neary Trade Restrictiveness Index using Canadian trade data from 1875 to 1910 to examine the veracity of previous measurements. We find that trade policy was more protectionist than previously understood, but created less welfare loss than previously believed.

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1 Introduction

The conventional view among economic historians is that at the end of the 19th century, Canada's trade policy was protectionist and extremely costly to the economy. According to Pomfret (1993) the National Policy Tariff increased the average tariff level from 14 percent in 1878 to 20 percent in 1880, and this status quo persisted until after World War II. Calculations based on static welfare analysis concluded that the welfare costs of protection ranged from that the welfare costs of protection ranged between $1 billion or 4 % of GNP (Young (1957)) to 10 % of GNP (Wonnacott and Wonnacott (1967)). Harris and Cox (1984) found that the static welfare costs of protection in Canada were from 4-8% of GDP. Pomfret (1993) comments that the welfare costs of protection in Canada were likely higher from 1859-1939 than this because levels of protection were higher.

Given the extremely high costs of trade protection, this begs the question: why Canadian protectionism remained the status quo for over a century (1879-1988)? In fact, Burgess (1980) examines the historical role of the Canadian tariff and asks why there was a general unwillingness to move to free trade. He argues that under some circumstances, despite the deadweight static welfare losses, protectionism can raise the lifetime real income of the representative citizen. Others, such as Dales (1966) argue that there may be long term growth gains that offset the static welfare loss of protection. Although this so-called "Dale's Hypothesis" is debateable, we take a different tact. We examine the veracity of measurements that produced this view of Canadian trade policy. Previous research is predominantly based on average tariff measures, and as a result, may not be capturing the true levels of protection - nor its true welfare costs.

There are two significant problems with the empirical work supporting this view. First, it relies almost exclusively on the Average Weighted Tariff (AWT) as a measure of protection; changes in the AWT are taken to reflect changes in the level of protection offered by

trade policy.[1] This method is problematic because the AWT does not accurately reflect the true level of protection offered in the economy; changes reveal little about actual changes in the level of protection over time.[2] Second the welfare implications of protectionism are not directly measured from the data, but are instead inferred from a limited number of estimates from later periods on the basis of changes in the AWT over time.[3] As a result, we do not know the magnitude of any welfare losses incurred from Canadian protectionism at the end of the 19th century. The purpose of this paper is to address these issues and construct more reliable measures of protection and welfare loss.

In this paper, we follow the approach of Kee et al. (2008) and Irwin (2007) and measure protection using a partial equilibrium version of the Anderson-Neary Trade Restrictiveness Index (TRI) suggested by Feenstra (1995). The TRI is an index measure equal to the uniform tariff, that if applied to all goods, would yield the same welfare level as the existing tariff structure. Unlike the AWT, the TRI is a theoretically consistent measure of protection that can be used to make valid cross-country or inter-temporal comparisons making it ideal for our purposes. Moreover, this method provides a simple means for calculating the static welfare loss associated with protection. We construct a simplified version of the Anderson-Neary Trade Restrictiveness Index and Canadian manufacturing data from 1875 to 1910. We find that average tariffs understate the level of protection offered by trade policy by at least 36 percent during this period. Moreover, although Canada's trade policy at the end of the 19th century was more protectionist than previously

[1]This is not to say that the average tariff is the only the measure of trade protection that has been employed in the study of Canadian tariff policy. Barnett (1976) uses the Effective Rate of Protection (ERP) to highlight the underlying motivation for the Galt Tariff of 1858. As part of a cross-country study Estevadeordal (1997) estimates the level of protection from Canadian trade policy using a measure of openness based on the Hecksher-Ohlin model.

[2]See Anderson and Neary (2005) for a discussion of the problems associated with using the average weighted tariff as a measure of protection.

[3]The existing studies of the welfare costs of Canadian trade policy include Young (1957), Wonnacott and Wonnacott (1967) and Harris and Cox (1984). These studies estimate the costs of trade policy in the 1950s, 1960s and 1980s respectively.

thought, we find that the welfare losses are smaller than previously believed. We find that the static deadweight loss is roughly 1% of GDP per year on average.

This approach requires data on imports, tariffs, gross domestic product (GDP) and estimates of import demand elasticities. As such, we constructed a unique data set from a variety of sources. International trade data was obtained from the Tables of the Trade and Navigation of the Dominion of Canada; data was taken from these tables at 5 year intervals for the period 1875-1910. The data from these tables are highly disaggregated; this is advantageous because it improves the precision of the TRI calculations. These data were then augmented to include data on Canadian GDP from Urquhart (1993). Unfortunately, estimates of Canadian import demand elasticities are not available for this period. We addressed this problem in two different ways. First, we followed the approach of Irwin (2007) and calculated the TRI and welfare loss using elasticity estimates from Letourneau and Lester (1988) that had been matched with the historical data.[4] Second, to check the robustness of the TRI and welfare loss estimates to the matching procedure and to the particular elasticity estimates that we used, we calculated both the TRI and welfare losses using simulated elasticities.

Section two provides some historical background on Canadian tariff policy. Section three discuss the data and Section four outlines the construction of the TRI and presents estimates of the TRI. Section five presents robustness checks on the estimates of the TRI using simulated elasticities. Section five concludes.

[4]Given that the price elasticities are estimated from a much later period, they may not perfectly reflect the true import price elasticities for this time period. However, as Anderson and Neary (2005) indicate, the TRI is relatively insensitive to the elasticities used so we are not biasing our results significantly.

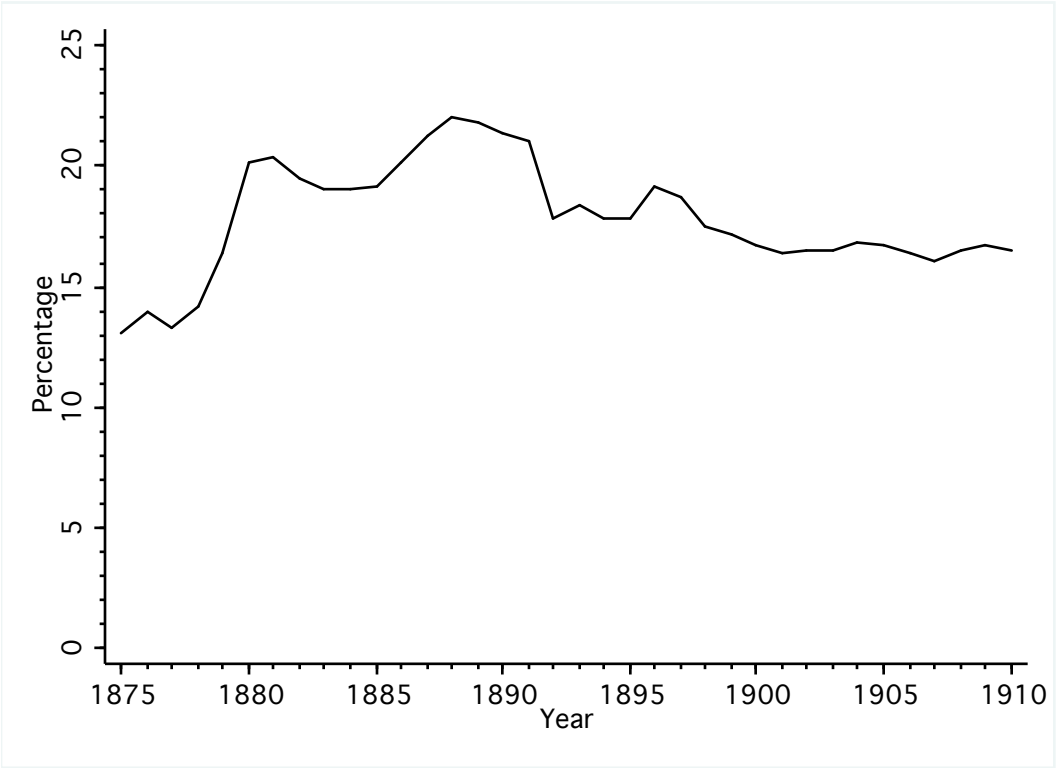
2 Tariff Protection in Canada

Canadian tariffs were used primarily for revenue purposes prior to 1879 with the establishment of the National Policy tariff. Commercial policy in the first years following confederation consisted of a customs tariff that fulfilled a revenue role first, with protection largely neglected. In the mid-1870s, a prolonged stagnation of the economy reinforced the argument that the Dominion needed a commercial policy that offered genuine protection for Canadian industry. Manufacturers took up the call and some in Parliament responded. Arguably Canada's first significant protectionist commercial policy legislation was the 'National Policy' tariff, introduced by the Macdonald Conservatives in 1879. Prior to this the Canadian tariff (based on average tariff measures) was a relatively low, revenue-motivated tariff. Figure 1 presents the average tariff in Canada from 1875 to 1910 (the period of consideration in this paper). As seen in this figure, the average tariff increased from around 14 percent in 1875 to over 20 percent in 1879. However, the average tariff was still relatively low even after 1880. It was around 20 percent in 1880 and increased slightly to about 22 percent by 1886 before trending downward to around 16 percent.

Even though protectionism played a role in the tariff policy post-1879, protectionist arguments were secondary to the need for government revenue in the early post-confederation period. As Figure 2 shows, customs duties provided on average 70 percent of the total Canadian government revenues during this period. With the large transportation development debts assumed by the Dominion, the tariff revenue that came from growing capital imports was essential to the government's nation-building objective. This called for a modest tariff that produced the necessary revenue stream but that didn't completely staunch the flow of imports.

Yet, for reasons outlined in the introduction, the average tariff does a poor job of measuring the level of protection. Moreover, we know that tariff policy changed with

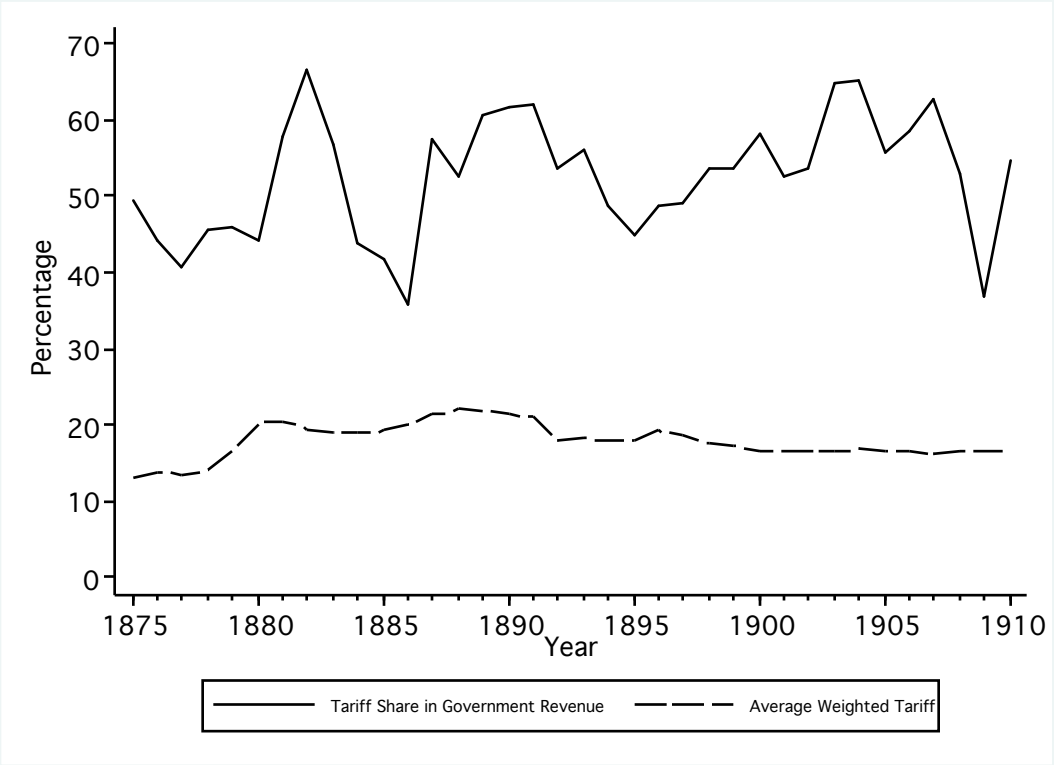
Figure 1: Average Tariff in Canada: 1875-1910



Note: Average tariff constructed using data from Leacy (1983).

the National Policy to a greater extent than is reflected in Figures 1 or 2. In their first session of parliament in 1879, Macdonald's Conservative Party increased tariff rates on manufactured goods to 30, 35 and in some cases 45 percent, with textiles and iron and steel especially favoured with high tariff protection. The general rate was raised from 17.5 percent to 20 percent. The average ad valorem duty is reported as 22.25 percent. Two sectors were singled out for special attention. In an attempt to stimulate domestic production, rates of protection for the textile sector and the iron and steel industry were roughly doubled. In the textile industry, cotton duties increased from 17.5 percent to an effective specific and ad valorem rate of about 30 percent, while woollen rates also approximately doubled. Previously-free pig iron was charged a specific duty of 2.00 per ton, primary iron and steel went from a range of free to 5 percent to a range of 12.5 percent

Figure 2: The Tariff Share of Government Revenue in Canada: 1875-1910



Note: Data on tariff share in government revenue obtained from Gillespie (1991). Average tariff constructed using data from Leacy (1983).

to 17.5 percent, and castings, forgings, boilers and engines increased from 17.5 percent to 25 percent. Agricultural implements, whose manufacturers seemed not to support increased protection, received a similar boost from 17.5 to 25 percent.

In the National Policy literature, one fact that is well-established is that the system of protection enacted by Macdonald in 1879 remained securely in place until well after the Second World War. Only then did the motivation of commercial policy shift from the protection and maturation of domestic industries to the development of multilateral trade channels. An important question, as yet unanswered, is whether the level of protection was as low as implied in Figures 1 and 2 or if the level of protection was much higher.

According to the literature, the 1879 tariff reform was particularly important because

it laid the foundation for the tariff schedule of the next 50 years. The general level of protection was essentially unchanged until 1930, with only minor changes to the tariff schedule (Taylor, 1939, p. 5). The tariff schedule was slightly revised in 1884 and 1894, but the only departure from the National Policy was the introduction of a preferential tariff for Great Britain in 1897. There was further revision to the tariff in 1904 and in 1907, by which time the government had established three levels of duties, the lowest being the British preferential, then scaling up to the intermediate and general tariffs. The intermediate tariff served as the basis for the negotiation of treaties with non-British countries.

What is the actual level of protection in Canada? In the next section we will measure the trade restrictiveness for select years from 1880 to 1910.

3 Data

This paper utilizes a unique data set compiled from a variety of sources. International trade data was obtained from the Tables of the Trade and Navigation of the Dominion of Canada; these tables contain disaggregated data by article classification. Data was taken from these tables at 5 year intervals for the period 1875-1910. An important advantage of this data source is that it contains detailed information about the total imports and duties collected that is needed to calculate ad-valorem tariffs at the industry level. This disaggregation is also advantageous for calculating the TRI; as Anderson and Neary (2005) indicate, the magnitude of the TRI will be affected by the level of disaggregation in the data. These data were then augmented to include estimates of import demand elasticity and data on Canadian gross domestic product (GDP).

The trade data was supplemented using data from two different sources. Two separate estimates of GDP for each year was obtained from Urquhart (1993), Table 1.1. These values were then matched appropriately to the data by year. Estimates of import price elasticities

were obtained from Letourneau and Lester (1988), Tables 3 and 4. Unfortunately, the classification system used by Letourneau and Lester is not the same as the one found in the original data. Thus, the "best estimates" from Table 3 were matched to articles (or industries) in the data on the basis of their descriptors. Industries that could not be assigned an elasticity from Table 3 (due to poor or non-existent correspondence between classifications) were instead assigned the "this study" elasticities from Table 4. This was done to minimize the possibility of mismatch.

It should be noted that constructing the data set in this manner may be subject to some judgement calls on the part of the author. Accordingly, this may limit the analysis; it is possible that some observations were miscoded during data construction. However, given the absence of standardized industry concordances at this time some judgment must be made to employ this data. It should also be noted that these price elasticities are estimated for a much later period and may not perfectly reflect the true import price elasticities for this time period. However, as indicated by Anderson and Neary (2005) and Irwin (2007), the TRI is relatively insensitive to the particular elasticities used. A robustness check to address these limitations will be discussed in section four.

A number of variables used in the calculation of the TRI were constructed using the data. Ad-valorem tariff rates were calculated by dividing the total duties collected for an article in a year by the corresponding value of imports. The share of industry imports in GDP was obtained by dividing the imports for a particular industry by total GDP for that year. In addition, the share of industry imports in total imports was calculated by dividing each industry's imports by the value of total imports for that year.

In constructing the TRI, the sample was restricted to observations that contained information on import values and duties collected. This was done to limit the sample to goods for which an ad-valorem tariff could be calculated. After this restriction, the sample includes 1492 observations. The sample contains observations on 442 articles in 1875, 136

Table 1: Imports, Duties and GDP

Year	Imports (thousands $)	Duty (thousands $)	GDP (thousands $)	Share of Imports in GDP	Average Weighted Tariff	Articles
1875	94610	12566	429876	22.01%	13.27%	422
1880	91541	18388	452082	20.24%	20.09%	136
1885	98267	19269	528170	18.61%	19.61%	140
1890	112265	23416	665293	16.87%	20.86%	141
1895	110587	20152	609921	18.13%	18.22%	259
1900	165123	28943	867201	19.04%	17.53%	269
1905	289160	46397	1306322	22.14%	16.05%	268
1910	443595	72914	1947385	22.78%	16.44%	279

Note: Imports, duty and GDP are in nominal values. Total imports and duties were obtained by summing over all articles for each year.

articles in 1880, 140 articles in 1885, 141 articles in 1890, 259 articles in 1895, 268 articles in 1900 and 279 articles in 1910. Yearly totals for some of the variables used in constructing the TRI are displayed in Table 1. As can be seen in the table, the average weighted tariff rate in Canada decreased from just over 20% in 1880 to just under 20% in 1895. Tariffs peaked again in 1890 and then continued to fall until 1910. Both total imports and total duties collected also increased over this period. Interestingly, the share of imports in total GDP declined substantially between 1875 and 1890 and then increased to close the original level by 1910.

4 The TRI: Estimated Elasticities

In the form suggested by Anderson and Neary (2005), the TRI must be calculated using a computable general equilibrium (CGE) model. As Irwin (2007) indicates, this is a result of necessity. The tariff weights needed to calculate the TRI are the marginal costs of the tariffs evaluated at an intermediate price vector; these weights are unobservable in practice. CGE modelling remedies this unobservability and allows the TRI to be calculated.

In the present context, this is problematic; data for this period does not provide sufficient detail to allow for CGE modelling. Fortunately, an alternative method of calculating the TRI is available. Feenstra (1995) develops a partial equilibrium version of the TRI that can be calculated with out resorting to CGE methods. Following the approach of Feenstra (1995), a partial equilibrium TRI is given by:

$$TRI = \left(\frac{\frac{1}{2} \sum_{i=1}^{n} (\partial I_i / \partial p_i) p_i^2 t_i^2}{\frac{1}{2} \sum_{i=1}^{n} (\partial I_i / \partial p_i) p_i^2} \right)^{\frac{1}{2}} \tag{1}$$

where $(\partial I_i / \partial p_i)$ is the change in import expenditures on good i resulting from a small change in the price of the import good i, p_i is the price of good i and t_i is the ad-valorem tariff rate on good i. It should be noted that the partial equilibrium version of the TRI only captures the first order effects of trade policy; it abstracts from cross price effects and other general equilibrium considerations (Irwin, 2007).

Calculation of partial-equilibrium TRI based on equation (1) is also troublesome; $(\partial I_i / \partial p_i)$ is unobservable in most instances. This problem was addressed by Kee et al. (2008); they show that the index can be manipulated so that it is expressed in terms of observables. Following their approach, the simple TRI can be rewritten as:

$$TRI = \left(\frac{\sum_{i=1}^{n} \epsilon_{ii} s_i t_i^2}{\sum_{i=1}^{n} \epsilon_{ii} s_i} \right)^{\frac{1}{2}} \tag{2}$$

where ϵ_{ii} is the own-price elasticity of import demand for good i and s_i is the share of imports of good i in GDP. By re-expressing equation (1) in this manner, it is possible to calculate the TRI using observable data. Moreover, as Kee et al. (2008) indicate, the numerator of the TRI is equal to the ratio of deadweight loss (DWL) to GDP for the existing tariff structure. Thus, an approximate value of the welfare loss associated with

Table 2: Trade Restrictiveness and Welfare Loss

Year	Import-weighted Average Tariff (%)	Anderson-Neary TRI (%)		DWL/GDP (%)	
		(A)	(B)	(A)	(B)
1875	13.28	27.64	27.64	-0.95	-0.94
1880	20.06	27.15	27.15	-0.94	-0.94
1885	19.51	29.98	29.98	-1.06	-1.06
1890	20.67	32.50	32.50	-1.15	-1.14
1895	18.22	33.66	33.66	-1.27	-1.26
1900	16.03	31.64	31.56	-1.38	-1.37
1905	15.99	29.82	29.82	-1.34	-1.34
1910	15.76	26.90	26.90	-1.13	-1.12

Note: All values in percentages. (A) and (B) refer to measures calculated using old-basis and new-basis GDP estimates respectively.

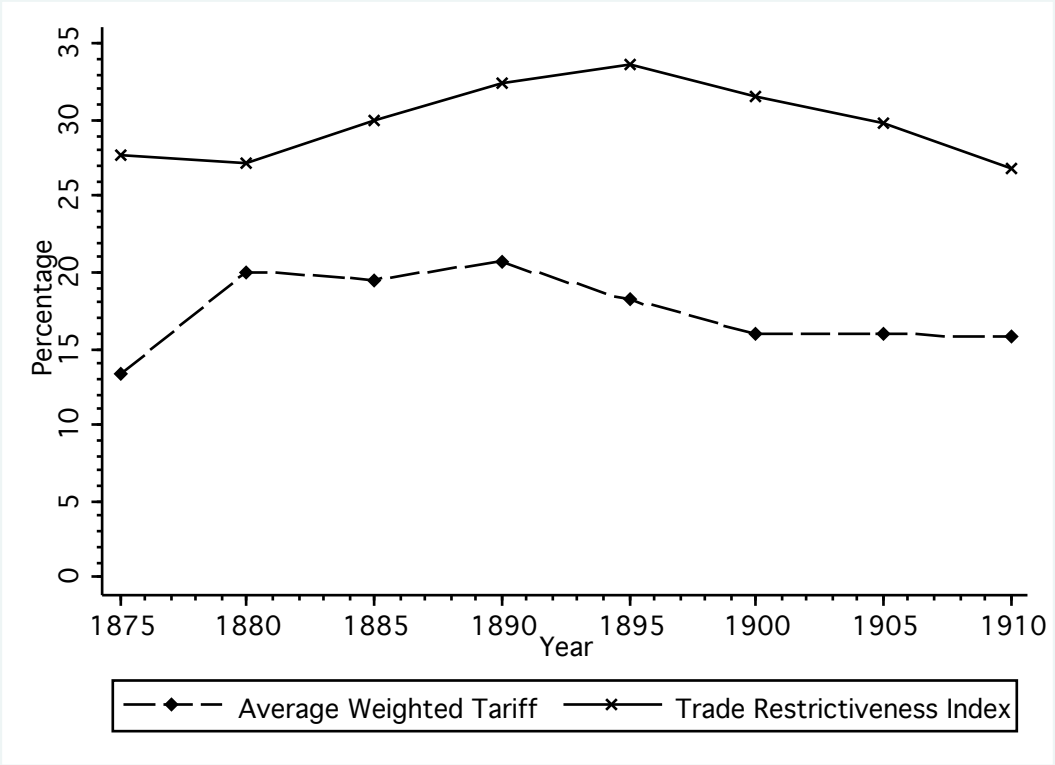
protection can be calculated from:

$$\frac{DWL}{GDP} = \frac{1}{2}\sum_{i=1}^{n} \epsilon_{ii} s_i t_i^2 \tag{3}$$

Two sets of results are presented in Table 2. For comparison, the import-weighted average tariff for each period is also included.[5] The TRI and deadweight loss estimates reported in columns (A) and (B) differ in the GDP series used in their calculation; both are reported as a robustness check. From the results, it appears that the restrictiveness of Canadian trade policy increases substantially between 1880 and 1885, but falls between 1885 and 1890. The TRI remains high for the remainder of the period. The results also indicate that the average-import weighted tariff understates the true restrictiveness of Canadian trade policy in all years. This suggests that inference based on the average tariff is generally understanding the case for protectionism. Moreover, the changes in the TRI do not correspond perfectly to changes in the average tariff; the average tariff dropped between 1885 and 1890, but the TRI increased substantially during this time. Although

[5]The import-weighted average tariff is given by $\sum_{i=1}^{n} \gamma_i t_i$, where $\gamma_i = I_i/(\sum_{i=1}^{n} I_i)$ is the share of imports of good i in total imports.

Figure 3: Measures of Trade Restrictiveness



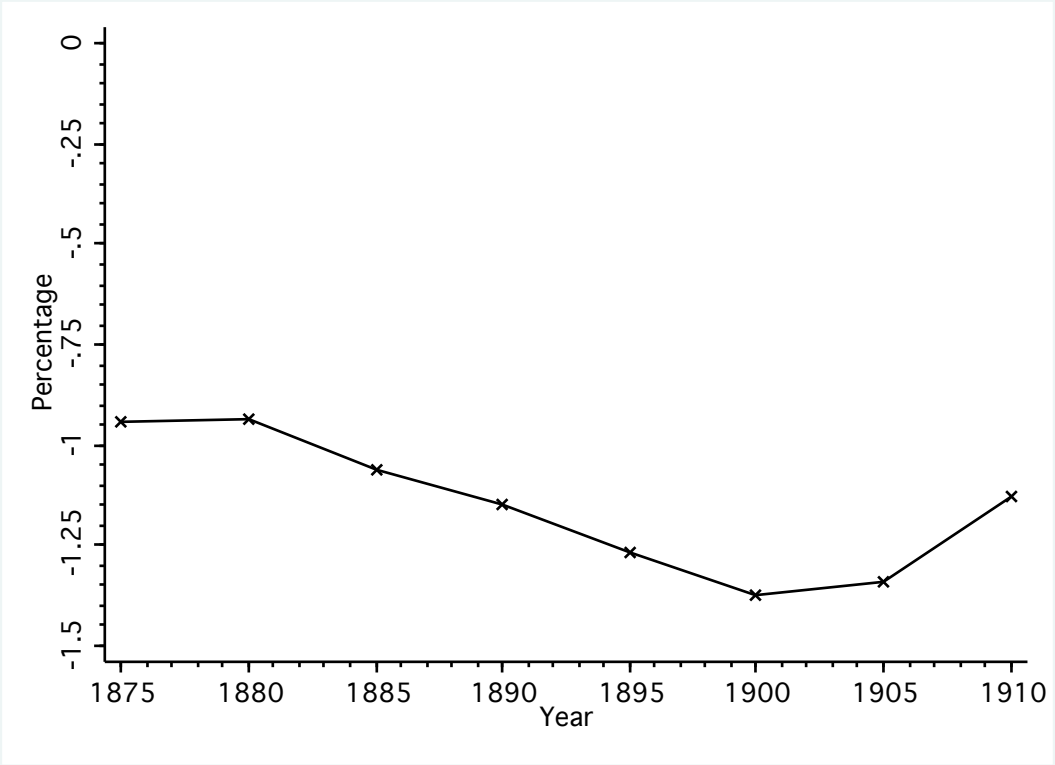
the average tariff understates the true level of protection, this finding suggests that the degree to which it does so is not constant over time. This is displayed in Figure 4

Table 2 also includes estimates of the welfare loss associated with tariff policy. The results indicate that the deadweight loss from trade policy averaged over one percent of GDP between 1875 and 1910. Like the TRI, welfare loss was highest in 1885, with small peaks in 1900 and 1910. This is displayed in Figure 4. These findings suggest that the National Policy caused welfare losses by restricting trade.[6]

The results presented in Table 2 outline the patterns of protection and welfare loss in Canada from 1875-1910. To get a sense of the magnitudes, we compare our results to estimates from other studies. Table 3 compares our estimates to those for Canada for a

[6]It is important to keep in mind that these estimates only reflect the first order effects of trade policy arising from trade distortions and do not account for the benefits of protection or general equilibrium effects.

Figure 4: Welfare Loss



much later period (taken from Kee et al. (2008)). These results show that Canada's recent trade policy was much less restrictive and much less costly than that at the turn of the 20th century. Table 4 presents protection and welfare loss estimates for both Canada and the United States during this period (estimates for the United States were taken from Irwin (2007)). From the table it can be seen that Canada's TRI is much lower than that of the United States during this period, meaning that although Canada was more protectionist than previously understood, it was still less protectionist than other countries at this time. More importantly, Canada had higher welfare losses than the United States during this period; even though Canada was less protectionist than the US, the costs of protectionism were much higher.

Overall, the results show that, under the assumption of linear demand and the assump-

Table 3: Canada's Protection over Time

Year	Import-weighted Average Tariff	Anderson-Neary TRI	DWL/GDP
1875	13.3	27.6	-0.95
1880	20.1	27.2	-0.94
1885	19.5	30.0	-1.06
1890	20.6	32.5	-1.15
1895	18.2	33.7	-1.27
1900	16.0	31.6	-1.38
1905	16.0	29.8	-1.34
1910	15.8	26.9	-1.13
1988-2001	2.92	7.54	-0.08

Note: All values in percentages. Estimates for 1988-2001 taken from Kee et al. (2008).

Table 4: Canada versus the United States

Year	Import-weighted Average Tariff		Anderson-Neary TRI		DWL/GDP	
	CAN	US	CAN	US	CAN	US
1875	13.3	29.4	27.6	36.2	-0.95	-0.72
1880	20.1	29.1	27.2	37.3	-0.94	-0.70
1885	19.5	30.8	30.0	41.3	-1.06	-0.75
1890	20.6	29.6	32.5	40.9	-1.15	-0.81
1895	18.2	20.4	33.7	34.0	-1.27	-0.51
1900	16.0	27.6	31.6	38.3	-1.38	-0.56
1905	16.0	23.8	29.8	37.0	-1.34	-0.46
1910	15.8	21.1	26.9	33.8	-1.13	-0.46

Note: All values in percentages. US figures taken from Irwin (2007).

tion that the elasticities employed are adequate proxies for the true elasticities of import demand, Canada's trade policy was much more restrictive than previously thought. While the extent to which the average tariff understates protectionism varies with the level of aggregation used, the TRI is higher than the average tariff in all cases. This suggests that previous studies that have relied on the average tariff for inference may be understating the case for protection. Moreover, the results show that the average tariff does not move in perfect correspondence with the TRI; inference based on changes in the tariff regime

may be invalid.

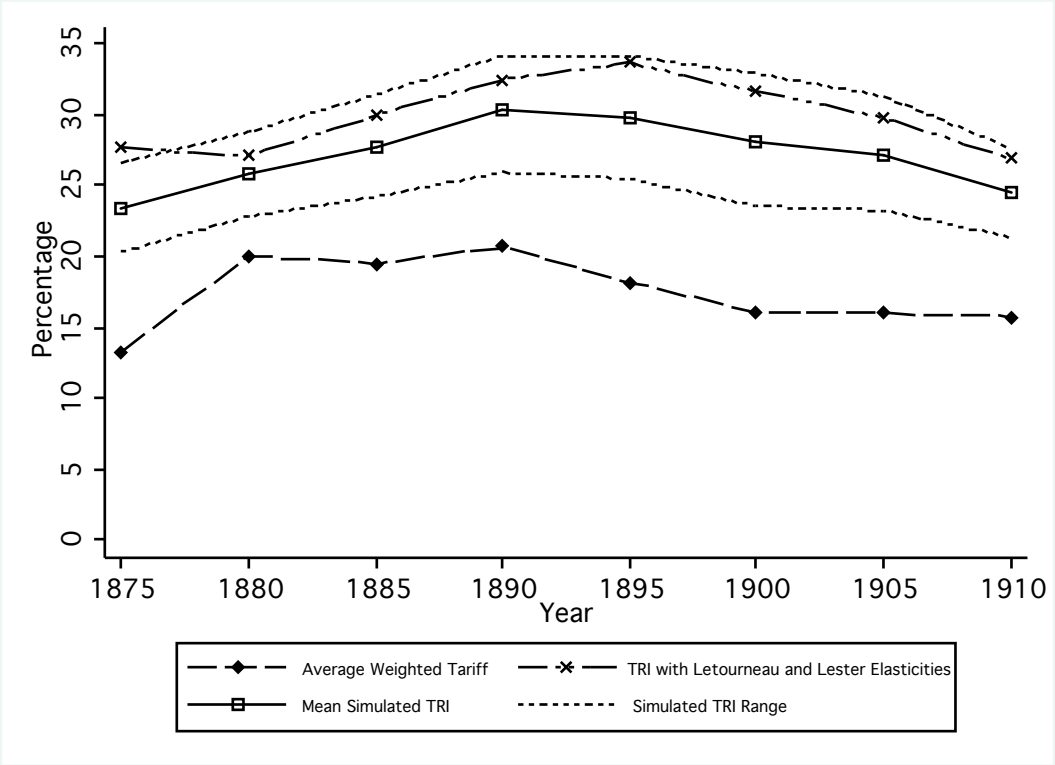
The results also demonstrate that welfare implications of Canadian tariff policy at this time were small. In the context of the literature, the magnitude of Canada's welfare loss is suprising; the calculated deadweight losses are much smaller than previously thought. As Pomfret (1993) indicates, previous studies have estimated Canada's deadweight loss from trade restrictions to be between 4% and 8% of GDP post 1950; given that tariffs were much higher at the turn of the 20th century, this has led many authors to infer that the welfare costs were also much higher. Our results show that this view is not supported by the data; the welfare costs are much lower than previously believed.

5 Robustness Checks

The TRI estimates may not be robust to the elasticities used in the calculations. As was indicated earlier, estimates of import price elasticities were obtained from Letourneau and Lester (1988). These elasticities were estimated for a much later period and may not reflect the true relationship between the demand for imported goods and prices between 1880-1910. Moreover, elasticities were matched to the data; this may introduce some error into the calculations. Hence it is possible that the particular elasticities used may be driving the results. The robustness of the estimates to the particular elasticities used can be checked by simulating the elasticities and comparing the previous calculations with results using simulated elasticities.

The simulation procedure used in this paper is based on two observations made by Irwin (2007). He suggests that most estimated elasticities tend to fall on the interval $(-3, -1)$ and that trade elasticities are relatively stable over time. Hence, a reasonable estimate of the TRI should replicate a TRI calculated with a random draw of elasticities from this interval. Accordingly, it is assumed that all historical elasticities fall in the range $(-3, -1)$.

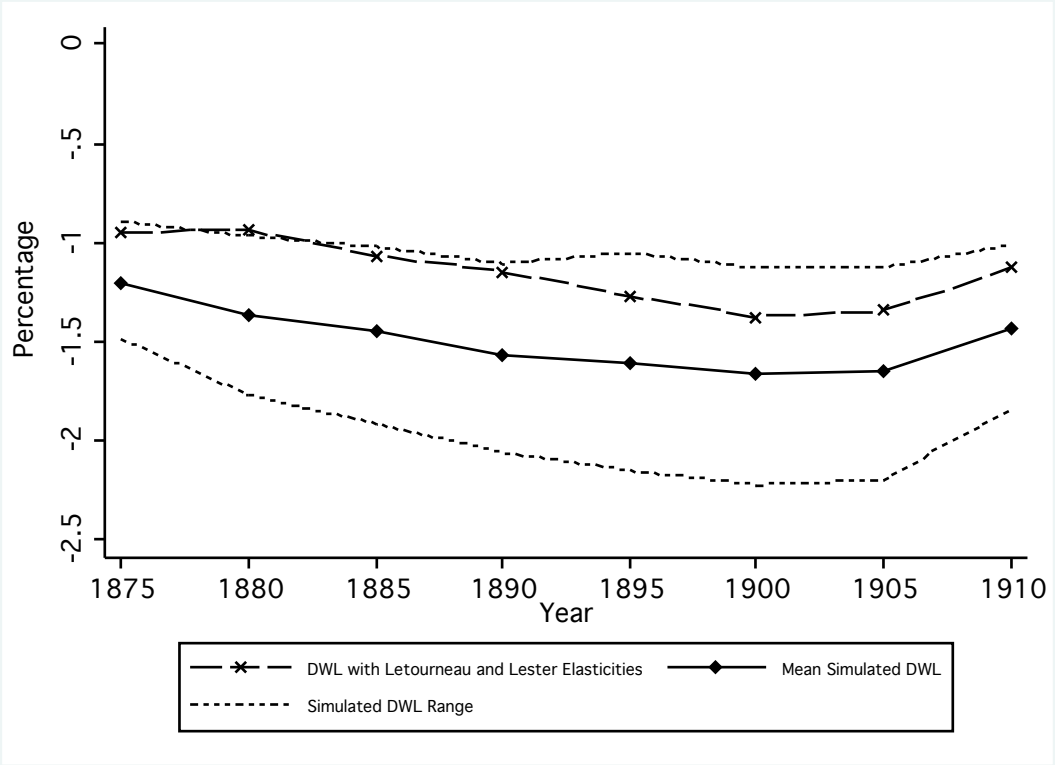
Figure 5: Measures of Trade Restrictiveness



Moreover, it is assumed that elasticities are uniformly distributed over this interval. Given these assumptions, each article was assigned a random elasticity drawn from the interval and the corresponding TRI was calculated. This procedure was repeated 2000 times to create 2000 distinct measures of TRI and welfare loss for each year. The results of this procedure are displayed in Figure 5.

Figure 5 displays the average weighted tariff, the TRI estimated with the elasticities from Letourneau and Lester (1988), and the simulated TRI results. Note that the mean simulated TRI is given by the solid black line, while the maximum and minimum values are given by the dashed lines. Like the original estimates, the simulated TRI is higher than the average weighted tariff. In addition, the original estimates fall with in the simulated TRI range and peak in the same years (although the magnitudes of the peaks very by year).

Figure 6: Welfare Loss



Together, these results confirm the earlier finding; the average weighted tariff understates the true level of protection.

Similarly, Figure 5 displays the welfare loss estimates calculated using the elasticities from Letourneau and Lester (1988), and the simulated results. Again, note that the mean simulated welfare loss is given by the solid black line, while the maximum and minimum values are given by the dashed lines. As before, these results confirm the earlier finding; the original estimates fall largely within the expected values. The notable exception to this is the estimate for 1900, which is smaller than the expected welfare loss.

6 Conclusion

This paper presents a partial-equilibrium version of the Anderson-Neary Trade Restrictivenss Index for Canada at the end of the 19th and beginning of the 20th century. The paper finds that Canada's trade policy was much more protectionist than previously thought with the flawed average tariff rate underestimating the level of protections by at least 35 percent compared to the TRI. Moreover, the paper computes a theoretically consistent measure of the welfare loss associated with the tariff policy and finds that the static welfare loss from Canadian tariffs are much smaller than previously understood. Static deadweight welfare loss is found to be in the neighborhood of 1 percent of GDP compared to the much higher measures of welfare loss presumed in the literature. The paper does not consider other potential gains or losses from high levels of protection. However, when measured correctly, the relatively low static deadweight loss from Canadian trade policy does not beg the question of why a very costly system of protection persisted for so long.

There are a number of possible limitations to the analysis. The estimates of the price elasticity of import demand used to construct the TRI are estimated for an era much later than the period in question. While simulations suggest that the results are reasonable, if elasticities are not stable across time or were of significantly different magnitudes between 1875 and 1910, the TRIs constructed in this study may be overstating the true restrictiveness of the National Policy and the magnitude of the welfare loss. Furthermore, the simple TRI constructed ignored all cross-price and general equilibrium effects. If these effects are of great importance, the simple TRI may be overstating or understating the true restrictiveness of trade policy. Secondary and general equilibrium effects have also been ignored in the calculation of deadweight loss. Accordingly the estimates of the DWL/GDP ratiomay overstating or understating the true welfare cost of trade policy.

The findings of this paper suggest some possible avenues for future research. To check

the robustness of the results, the price elasticities of import demand could be estimated for this time period and used in the analysis. Both the TRI and the DWL/GDP ratio could also be calculated using data for more time periods. In addition, the TRI could be constructed using a general equilibrium model to examine the importance of second order effects.

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