

The Impact of a Fixed Book Price on Book Sales in Quebec

Technical annex to the Economic Note, *The Consequences of a Fixed Book Price*

This technical annex provides the calculations used to estimate the reduction in book sales in Quebec stemming from the potential adoption of a fixed book price policy by the Quebec government. These calculations rest upon hypotheses where exact data are not available. The hypotheses adopted are conservative, and the sensitivity of the result to these choices of hypotheses is also illustrated.

Current situation: New releases are sold in independent bookstores, in branches of large bookstore chains and in non-specialized big-box stores. Independent bookstores are unable to match the discounts offered by large chains and big-box stores.

Adoption of a fixed book price policy: The maximum allowable discount for new releases would be 10% of the publisher's suggested price for a duration to be determined, possibly nine months, according to the proposal put forth by the "Nos livres à juste prix" coalition.

Impact on book sales: The prices of new releases would therefore be increased in the short term. The magnitude of the price increases depends on the discounts previously offered by each type of retailer. The calculation of the impact on book sales is carried out using the price elasticity of the demand for books, which are ordinary goods.

STEP 1: Differentiated price increases by type of retailer

Bookstores sell 70% of new releases, while big-box stores sell 30%.¹

Among bookstores, half (49.2%) of new books are sold by independent bookstores and the other half (50.8%) by large chain stores.²

Hypothesis 1: Independent bookstores and large chains currently offer a 20% discount off the suggested price on average (supposing for example that independent bookstores offer discounts of 15% to 20% off suggested prices and that large chain stores offer discounts of 20% to 25%). Big-box stores offer a 30% discount on average.

The imposition of a limit of 10% on the discount allowed off the suggested price would increase the prices of new releases in the following proportions:

	Bookstores (all types)	Big-box stores
Former price (P_t)	80% of the suggested price (20% discount)	70% of the suggested price (30% discount)
New price (P_{t+1})	90% of the suggested price (10% discount)	90% of the suggested price (10% discount)
Change in price (ΔP) Such that $\Delta P = (P_{t+1} / P_t) - 1$	+12.5%	+28.6%

STEP 2: Price elasticity of books in Quebec

The price elasticity (e) of a good is a number that corresponds to the relation between the relative change in the quantity of that good sold and the relative change in its sale price. Its formula is as follows: $e = -(\Delta Q/Q)/(\Delta P/P)$

The economic literature offers different measures of the price elasticity of the demand for books, ranging from 1.47 to 3.0.³

Hypothesis 2: Assuming that the French market is the one that most closely resembles the Quebec market among those countries where studies have determined a price elasticity for the consumption of books, we selected one of the two estimates available for France, that of researchers Dominique Darmon and Philippe L'Hardy (1.47), which is the more conservative of the two (the other, evaluated by researcher Mathieu Perona, is higher at 2.0).

Hypothesis 3: All new releases will be affected, which is to say that a title is only considered to be new during the nine months following its release.

According to the preceding data and the price elasticity considered, sales of *new releases* by type of retailer would fall by the following proportions:

	Bookstores (all types)	Big-box stores
Change in price ($\Delta P/P$) Such that $\Delta P = P_{t+1} / P_t - 1$	+12.5%	+28.6%
Change in quantity ($\Delta Q/Q$) Such that $\Delta Q/Q = \Delta P/P \times e$	-18.4%	-42.0%
Proportion of sales of new releases	70%	30%
Change in sales of new releases	-25.5%	

STEP 3: Change in total book sales in Quebec

New releases accounted for sales of 9,598,345 copies in 2004-2005, representing 55.7% of all book sales, which totalled 17,231,519 copies.⁴

Hypothesis 4: Sales of new releases as a proportion of total book sales has remained constant over time.

Determining the reduction in total book sales in Quebec is therefore simply a matter of multiplying the change in sales of new releases by the proportion of new releases among total book sales. This produces a 14.2% reduction in book sales.

STEP 4: Change in total sales of Quebec titles

It is possible to carry out the same calculation on Quebec titles exclusively. Sales of new releases account for a larger proportion of total sales in the market for Quebec titles. New releases accounted for 4,603,663 copies in 2004-2005, representing 69.0% of all sales of Quebec titles, which totalled 6,671,844 copies,⁵ versus 55.7% for the book market as a whole. Quebec titles would therefore be particularly affected by an imposed price floor.

Conserving the same hypotheses, but modifying the ratio of new releases to total sales, a price floor entailing a 25.5% reduction in sales of new releases would reduce total sales of Quebec titles by 17.6%.

STEP 5: Sensitivity analysis

Each hypothesis proposed, while not arbitrary, represents a methodological choice upon which the final result depends. A sensitivity analysis illustrates how sensitive this result is to a variation in the proposed hypothesis. The following table therefore revisits the preceding calculations while changing one hypothesis at a time.

	Weak hypothesis	Median hypothesis	Strong hypothesis
Hypothesis 1	15% and 25% discounts -8.3%	20% and 30% discounts -14.2%	25% and 35% discounts -20.9%
Hypothesis 2	Elasticity of 1.2 -11.6%	Elasticity of 1.47 -14.2%	Elasticity of 3.0 -28.9%
Hypothesis 3	The 9-month period encompasses 75% of sales of new releases -10.6%	The 9-month period encompasses 100% of sales of new releases -14.2%	
Hypothesis 4	The proportion of new releases among total sales falls -12.9%	The proportion of new releases among total sales is stable -14.2%	The proportion of new releases among total sales increases -15.5%

Conclusion

The impact of the adoption of a fixed book price policy would be, all other things being equal, a 25.5% reduction in sales of new releases, which would reduce total book sales in Quebec by 14.2%. As for total sales of Quebec titles, these would fall by 17.6%.

¹ Édinova, *The Diffusion and Distribution of French-Language Books in Canada*, published by the Department of Canadian Heritage, August 2008, p. 33. The data on sales of new releases are from 2004-2005. The absolute numbers are therefore old. However, the ratios drawn from these data are probably more constant over time.

² Quebec Institute of Statistics, *New book sales by bookstores by accreditation and chain affiliation*, data from 2012.

³ Price elasticity of 1.5 to 3.0 in Germany from 1984-1986: George Bittlingmayer, "The Elasticity of Demand for Books, Resale Price Maintenance and the Lerner Index," *Journal of Institutional and Theoretical Economics (JITE) / Zeitschrift für die gesamte Staatswissenschaft*, Vol. 148 (1992), No. 4, pp. 588-606; price elasticity of 1.59 to 2.91 for Norway from 1986 to 1999: Vidar Ringstad and Knut Løyland, "The Demand for Books Estimated By Means of Consumer Survey Data," *Journal of Cultural Economics*, Vol. 30 (2006), No. 1, pp. 141-155; price elasticity of 2.0 for France from 1960 to 2003: Mathieu Perona, *Essai de mesure de l'élasticité-prix de la demande de livre et de disques en France, 1960-2003*, Mémoire de DEA, École d'économie de Paris, 2004, p. 25; other price elasticity calculation of 1.47 for France from 1963 to 1985: Dominique Darmon and Philippe L'Hardy, "Consommation : santé et loisirs au premier plan," *Economie et statistique*, No. 190, July-August 1986, pp. 55-69; elasticity of 1.94 for books most likely to be new releases in the United States: Thomas Webster, "Retail Consolidation and the Price Elasticity of Demand for Books," *International Business & Economics Research Journal*, Vol. 1 (2002), No. 12, p. 31.

⁴ Édinova, *op. cit.*; Total sales are drawn from the Quebec Institute of Statistics, *Number of copies sold by distributors according to origin and category of books, Québec, 2004-2005 to 2008-2009*, Observatoire de la culture et des communications du Québec.

⁵ *Idem.*