

SHOULD WE STOP USING THE PENNY?

Summary

The one-cent coin has so little purchasing power that Canadians increasingly refuse it as change for their retail purchases. **Given its limited usefulness, the federal government should seriously consider stopping the issuance of the penny and removing it from circulation.** From 2001 to 2005, the Royal Canadian Mint (RCM) has produced, on average, 816 million one-cent coins per year, or just over 25 coins per capita each year. These impressive figures show that many pennies are not put back into the distribution system, usually because they are hoarded or simply thrown out. Many countries have already removed the one-cent coin from circulation. Australia and New Zealand, for example, eliminated both the one-cent and two-cent coins at the end of the '80s and early '90s. In hindsight, their decision was very good. New Zealand even stopped issuing the five-cent coin last year.

If the penny is removed from circulation, only the totals of cash transactions will be rounded to the nearest five cents. For example, a transaction for one or more items with a final price of \$9.98, \$9.99, \$10.01 or \$10.02 will be \$10.00; if the final price is \$10.03, \$10.04, \$10.06 or \$10.07, the final price will be \$10.05. Rounding off cash amounts will not allow buyers or sellers to realize a monetary gain over the current situation where cash transactions are settled to the nearest penny. On many transactions, consumers and retailers do not realize losses or gains if prices are rounded symmetrically. If companies (operating in a competitive market as is the case with most retail businesses) could actually increase their prices and ultimately their profits by raising their selling price a few pennies, they would do so. In a competitive environment, it is therefore false to claim that sellers would realize a gain at the expense of buyers by systematically rounding up their prices. It is also unfair to say that eliminating the penny would permanently increase prices or even the inflation rate. Three Bank of Canada researchers arrived at the same conclusion. Moreover, the experience of many countries that have stopped producing low-value coins also goes against this type of erroneous thinking.

For Canadian society, the cost of keeping the penny in circulation is at least \$130 million per year, or just over \$4 per person. Consumers would benefit from the elimination of these costs while private sector businesses would, in terms of margin, neither realize gains nor suffer losses in the long term. Given that penny-related government costs exceed revenues, it would see net revenues increase by removing the one-cent coin. Moreover, besides the RCM (which would lose an order of some 800 million coins per year), private sector companies that would suffer from discontinuing the penny are as follows: 1) Canadian mining companies and those in the metal sector producing metal used for one-cent coins; 2) armoured carriers; and 3) companies that manufacture coin rolls and boxes. Seeing their sales fall, these companies and the RCM would have to find other orders. This raises an important question for us as a society: Are we ready to bear an additional cost of over \$100 million per year on the pretext that we must artificially support these companies and the RCM and that the one-cent coins are useful for making gifts and donations?

The first step to take in order for the federal government to decide to remove the penny from circulation is to convince the Minister of Finance of the merits of such a course of action. If the senior management of the Bank of Canada decided (like the central banks of New Zealand and Australia) to publish the work of the researchers in this field and publicly stated that removing the penny from circulation would have no effect on the Consumer Price Index in the medium and long terms, many consumers would be reassured. This would facilitate, and indeed speed up the federal government's decision to do away with the one-cent coin. **Lastly, the one- and five-cent coins should not be removed at the same time. We must proceed step-by-step as New Zealand did.** However, if removing the penny is successful, and if the experience reassures the public, the federal government should consider doing the same with the five-cent coin.

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1. Introduction¹

The penny has so little purchasing power that more and more Canadians are refusing it as change for their purchases. They instead make them available to the retailer and next customer by placing them in a container near the cash register for this purpose. Other consumers accumulate large quantities of pennies and rarely take the time to roll them and bring them to the bank. Others simply throw them away. Such actions attest to the penny's limited usefulness to Canadian consumers.²

Many countries have already eliminated their one-cent coins. For example, Australia and New Zealand not only removed pennies from circulation at the end of the '80s and early '90s but discontinued their two-cent coins as well. Some countries in the euro zone such as Finland, the Netherlands and Belgium do not use or suggest no longer using their one and two centime coins. In hindsight, their decisions have proven to be sound. Last year, New Zealand even stopped issuing the five-cent coin which, if it still existed, would be worth four cents Canadian. According to a survey (see part 5 for more information), New Zealanders support this decision, demonstrating their acceptance of the removal of the one- and two-cent coins.

With the increase in the price of metals (later on we will see that this is not the main reason low-value coins should be eliminated), the debate on eliminating the Canadian one-cent coin and, especially, the American penny, has intensified since the spring of last year. In fact, in July 2006, for the fourth time since 1989, representatives of the United States Congress tabled a bill to stop the production of the penny. We will come back to this question in section 6 of the study. In Canada, a project to eliminate the one-cent coin was presented at the end of the '80s. However, this project was set aside when the goods and services tax (GST) came into effect at the beginning of 1991, given the importance at the time of the fraction to arrive at one cent. Before the GST, most

transactions were in multiples of 5 cents. The Mulroney government decided not to eliminate the one-cent coin. At the time, the federal government stated that there was no real political "benefit" to eliminating the Canadian one-cent coin (because of the appearance of the GST in the middle of one of the worst periods of recession in the history of the country), and the political risks were also very high.

The second part of our study describes the broad parameters of the approach we adopted to evaluate the costs and benefits of such a decision. The next section presents various data on the evolution of the number of coins in circulation in Canada while section 4 details the various costs associated with keeping the penny in circulation. We conclude with a description of the New Zealand experience and the debate currently under way in the United States and then present the conclusions of our study.

2. The broad parameters of our approach

2.1 Questions to ask

To build a good theoretical framework we must first begin by defining **the function of this coin**. Money, in the broad sense of the term,³ fulfills three major functions:

1. It is a unit of account, a yardstick for measuring the value of goods and services to sellers and buyers;
2. It facilitates transactions by serving as a medium of exchange;
3. It constitutes a store of value for future use.

The penny has very little purchasing power and does not play any significant role with regards to the first and third functions. It is kept in circulation solely to facilitate cash payments (with bank notes and coins) to the nearest cent. Our analysis will therefore focus on evaluating the benefits and costs associated with eliminating the penny as a medium of exchange. It is important to mention that should the penny be eliminated, consumers would still be able to use other methods of payment to the nearest cent

¹ We would like to thank the economists Jac-André Boulet, Don Drummond, Timothy Fisher, Paul Ferley, Clément Gignac, Pierre Fortin and Claude Montmarquette for their excellent comments. **The opinions expressed in this document are those of the authors and do not necessarily reflect the official position of Desjardins Group.**

² A survey conducted by Desjardins Group in 2006 among residents across Canada supports this statement. It showed that only 37% of them regularly use the one-cent coin to pay for cash purchases.

³ In the broad sense, money includes (1) bank notes and coins in circulation, (2) deposits used to settle transactions, and even (3) savings deposits and mutual funds. See the various definitions of monetary aggregates on pages 11 and 12 of the *Weekly Financial Statistics* of the Bank of Canada: <http://www.bank-banque-canada.ca/pdf/wfs.pdf>.

(for example, debit and credit card payments, cheques) and fund transfers. Rounding affects only the total amount (taxes included) of a transaction paid in cash. It is not applied to each item if there is more than one item in the transaction. As well, rounding does not affect the amount of taxes collected that the seller must pay to the government. If the penny is removed from circulation, only transactions paid in cash will be rounded to the nearest five cents. For example, a transaction for one or more items with a final price of \$9.98, \$9.99, \$10.01 or \$10.02 will be \$10.00; a transaction with a final price of \$10.03, \$10.04, \$10.06 or \$10.07 will be \$10.05. Based on such a practice, we can therefore reformulate our question as follows:

What are the costs and benefits of leaving the penny in circulation in order to avoid rounding cash purchase amounts?

2.2 Gains and losses associated with rounding prices

Rounding amounts paid in cash will not allow buyers or sellers to realize a monetary gain over the current situation where cash transactions are settled to the nearest cent.⁴ On many transactions, consumers and retailers do not realize losses or gains if prices are rounded symmetrically. If companies (in a competitive market as is the case in most retail businesses) could actually increase their prices (and ultimately their profits) by raising their selling price a few pennies, they would do so. If they do not, it is because they would risk seeing sales decrease.

In a competitive environment, it is therefore false to claim that sellers would realize a gain at the expense of buyers by systematically rounding up their prices. Consequently, rounding would have to be done symmetrically. As well, from a marketing point of view, companies will adjust their prices to ensure they are the same as or probably lower than those of the competition. **It is therefore not very profitable to keep a one-cent coin in circulation to settle cash transactions to the nearest cent in order to avoid rounding the amount of cash purchases.**

Moreover, it is unjustified to suggest that eliminating the penny from circulation would permanently increase prices

⁴ Certain restaurant owners and retailers already use this practice to speed up service and reduce their costs of obtaining change from the financial institution.

or even the inflation rate. Three Bank of Canada researchers arrived at the same conclusion.⁵ Moreover, the positive experience of many countries that have stopped producing the one-cent coin, and even the two-cent coin, goes against this type of erroneous thinking.

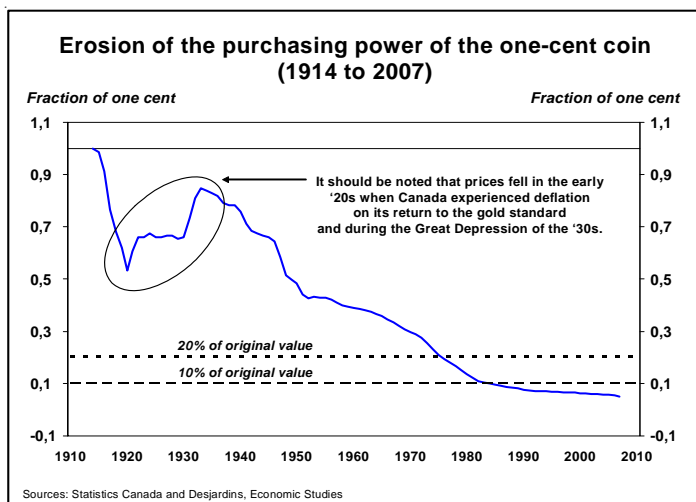
2.3 Erosion of the penny's purchasing power

We currently round to the nearest cent. No one is complaining about this practice or calling for production of a half-cent coin and certainly not for a one-tenth of a cent coin.⁶ Consumers don't think about deriving any kind of benefit from this practice. Low purchasing power gives rise to waste. If we decided to produce a one-half cent or one-tenth of a cent coin, the unit production and distribution costs would be far higher for the government and all of society than the face value of this coin. In other words, the value of its usefulness for consumers would be lower than its production and distribution costs. Where then should we set the bar? What should the purchasing power be of the smallest unit of currency? If a coin has such low purchasing power that consumers refuse it, throw it away or hoard it without worrying about putting it back into the distribution system, it would seem logical to stop producing it. The one-cent coin seems to be a clear illustration of this fact.⁷

⁵ "Two issues that are useful in assessing the potential inflationary effects of eliminating the penny are: (1) the potential effects of rounding (up or down to the nearest increment of five cents) and (2) the share of spending for goods and services that is paid for by cash. On both counts, the inflationary effect of eliminating the penny is expected to be small or non-existent." (Laur, McPhail and Urwin, *Would Elimination of the Penny be Inflationary?*, Bank of Canada, February 2005, preliminary version, p. 1.)

⁶ We currently round to the nearest cent due mainly to the way that the governments calculate sales taxes. For example, in Québec, the 6% goods and services tax (GST) to which is added the 7.5% provincial sales tax (PST) equals a combined tax rate of 13.95%. Applying these taxes to an item with a sale price of \$1.99 yields a final sale price of \$2.26761 (or \$2.27 rounded to the nearest cent).

⁷ When the one-cent coin was introduced in Canada in 1908, personal income per capita was in the order of \$400 per year. Today, it is around \$35,000. Unlike at the beginning of the last century when the one-cent coin had some value, in 2007 it has very little value compared to the purchasing power of individuals. In fact, workers earned 20 cents an hour at the beginning of the 1900s, whereas today they earn, on average, around \$20 an hour, or 100 times more, while the purchasing power of the one-cent coin is only 5% of its value in 1908, or 20 times less.



The purchasing power of our ten-cent coin is actually 60% lower than that of the one-cent coin in 1908.⁸ It is therefore easy to understand why New Zealand decided to remove its one-, two- and, more recently, five-cent coins from circulation and why some analysts suggest that it would be a good idea for Canada to do the same with the one and five-cent coins.

In New Zealand, the ten-cent coin is currently worth about eight cents Canadian. It is therefore appropriate to compare our situation with theirs. If the federal government had chosen to discontinue or withdraw a coin so that the purchasing power of the second smallest coin was not below the purchasing power of the one-cent coin in 1908, the one-cent coin would have been removed from circulation in the mid-1970s and the five-cent coin ten years later. Everything leads us to believe that eliminating the one-cent coin in Canada would allow us to move in the right direction.

2.4 Cost evaluation

Given that it is not very useful to keep the penny (low purchasing power) to facilitate transactions, the only reason for maintaining the status quo would be its low cost. But is that really the case? Let us look at the price of using the one-cent coin in our economy. What are the different types of costs? What is their extent? Let us first

⁸ The Royal Canadian Mint publishes on its Web site (<http://www.mint.ca/royalcanadianmintpublic/index.aspx?requestedPath=/fr-CA/Home/default.htm>) data on the annual production of one-cent coins since 1908. In 2005 the Consumer Price Index was 20 times higher than the one recorded in 1908 and 15 times higher than the one in 1935, the year the Bank of Canada was created.

define the different cost categories to be evaluated and the economic agents that must support them.

In our estimates, we took the costs associated with the following activities into account:

- Producing one-cent coins;
- Storing them;
- Transporting them;
- Going to a financial institution to obtain, roll and deposit them;
- Using them for transactions (put them in and take them out of our wallets, count them, give them and receive them...).

We then identified the following four groups:

1. The producer/issuer (the Royal Canadian Mint and the Department of Finance), (we will use the abbreviation "PC" to represent the annual cost of these agents);
2. Financial institutions (FIC);
3. Retail businesses who handle cash transactions (RB) and;
4. Consumers (CC).

We decided not to consider a fifth group: private armoured carriers that transport bank notes and coins. We instead chose to incorporate the costs associated with handling and transporting one-cent coins into the costs of the Royal Canadian Mint (RCM), financial institutions and private sector companies that deal with large sums of bank notes and coins (e.g., a supermarket).

To simplify our approach, we also put forth the following hypotheses:

- The government must produce a certain set amount of one-cent coins each year (around 750 million coins [see section 4]), and
- The present redemption value of these coins by the government (if it decided to no longer produce the one-cent coin) is offset by the value of their sale on the metal recycling market.

These simplifications allow us to concentrate on the annual costs of maintaining the one-cent coin in circulation and to express the total cost (TC) in the following equation:

$$TC = PC + FIC + RB + CC$$

Before presenting estimates of these cost variables, it is extremely important to understand the following two points:

1. In our methodology, we do not measure the net cost borne by the four selected groups. Instead, we measure the gross cost of each of the four groups in order to provide an estimate of the cost for Canadian society as a whole. The approach using net cost is much more complicated and requires data that is difficult to produce.⁹
2. Our framework totally rejects the approach that would involve keeping the one-cent coin in circulation so long as the production and transportation costs borne by the RCM (direct production and distribution costs) are below the sale value of the coins (produced at the unit price of one cent) to financial institutions. **We must absolutely take into account all the costs and benefits for Canadian society as a whole in order to decide whether to keep or eliminate the one-cent coin.**

3. EVOLUTION OF THE NUMBER OF ONE-CENT COINS IN CIRCULATION

Before discussing the estimated costs associated with using the one-cent coin, it is important to clearly understand the quantity of pennies in circulation and the pace at which it is increasing.

We will begin by providing as reference some information on the one- and two-dollar coins, whose purchasing power is far more significant (100 and 200 times respectively than the penny). The number of loonies in circulation since 1987 (the year the dollar bill was

replaced) was 852 million at the end of 2005, and the figure for toonies (launched in 1996) was 554 million at the end of 2005. **The total value of these two coins in circulation is therefore \$1.960 billion, or the equivalent of nearly 61 loonies per capita.** Over the five years from 2001 to 2005, the value of these two coins has increased at a relatively stable pace that is compatible with nominal GDP (approximately 5%). **The value of the new coins put in circulation is on average close to \$55 million per year or the equivalent of issuing almost two one-dollar coins per year per capita.**

How do these figures compare to the one-cent coin? A calculation of the total number of pennies issued since 1908 results in a total of 30.5 billion coins in circulation at the end of 2005 or close to 953 coins per capita. Lined in a row, these coins would cover a distance equal to 14 times around the earth. Even if we suppose that one third of these coins, namely, those issued more than 30 years ago, were lost over the years, we estimate that **there are approximately 20 billion pennies. This figure means that there are 600 coins per capita. This amount is almost 10 times more than the 61 coins per capita raised in the last paragraph.**¹⁰

Over the five-year period (2001-2005), the government issued on average 816 million one-cent coins each year, or just over 25 coins per capita per year. This amount is 15 times greater than the amount indicated above for one- and two-dollar coins. Lined up one after the other, 816 million pennies would cover twice the distance between St. John's (Newfoundland) and Victoria.

These figures on the number of pennies in circulation and on their annual increase show clearly that the one-cent coin is not very useful and that consumers hoard or throw it away rather than deposit it and put it back into the distribution system. **The fact of rounding prices (and thus removing the cent) should be an advantage to all consumers who are accumulating pennies at home, who leave them in containers near store cash registers and who lose or get rid of them in various ways (by throwing them away in fountains, for example).**

⁹ Overall, it is possible that the first three groups of agents (government, financial institutions and companies) transfer their costs of producing and using the one-cent coin to consumers. It is very difficult however to calculate the portion of the costs directly associated with using the one-cent coin that is billed to consumers by the many companies in the private sector and by financial institutions.

¹⁰ The total of 20 billion coins in circulation also represents the total coins issued since 1975. Choosing a higher loss rate would increase the cost associated with using the one-cent coin and further favour its removal from circulation. The more coins we lose and throw away, the more costly it is for society.

4. ESTIMATED COST FOR THE CANADIAN ECONOMY

4.1 Producer/Issuer cost (PC = \$11.25 million = 750,000,000 coins x 1.5¢)

According to the RCM, the direct costs associated with producing and transporting one-cent coins are approximately 0.8 cents per coin issued. This estimate is a good measure of the additional cost (marginal cost) of slightly increasing, in the short or medium term, the order of one-cent pieces. However, this estimate cannot be used to measure the long-term savings of removing the one-cent coin from circulation. In this scenario, one needs to also take into account costs related to distribution of coins already in circulation, storage costs, depreciation of the infrastructure and equipment and general expenses that would be reduced if the one-cent coin were no longer issued.¹¹ These costs are not fixed in the long term. We must not forget that the one-cent coin represents 60% of the production of Canadian coins in circulation.

In their study, Chande and Fisher,¹² who base their assumptions on the RCM's costs being reimbursed by the federal Department of Finance, refer to a total unit cost in 2001 of 3.95 cents per penny produced. They assume that all the other expenses that are much larger than the direct cost of producing Canadian coins are completely flexible in the long-term and will be reduced by close to 60%.

We prefer the concept of marginal cost, which allows the RCM, if the penny is discontinued, to reduce only a part of the general expenses and use the freed up production capacity for other clients. This approach recognizes that there are certain fixed costs associated with producing Canadian coins. We have estimated the average cost of issuing a one-cent coin at 1.5 cents. This estimate is very conservative, and it is 62% lower than that of Chande and Fisher.

For our calculations, we also used an annual production of 750 million units. Here again, we have adopted a

¹¹We were not able to obtain the amount of every expense allocated to this end from the RCM.

¹²Dinu Chande and Timothy C. G. Fisher, "Have a Penny? Need a Penny? Eliminating the One-Cent Coin from Circulation," *Policy Analysis*, vol. XXIX, no. 4 2003. In 2003, these researchers were part of the Economics Department of Wilfrid-Laurier University.

conservative approach because average annual production over the five years from 2001 to 2005 was 816 million units. These two figures (1.5¢ for 750 million units) imply that the RCM's production and distribution costs were on average \$11.25 million per year. These numbers also imply, given that the coins are sold by the government at 1¢ per unit, an annual loss of \$3.75 million for the government (\$11.25 million - \$7.5 million). This **negative seigniorage** simply reflects the fact that the government sells the coin for one cent, while it costs a total of around 1.5¢ per unit to produce. The seigniorage is the government's net revenue derived from issuing coins and bank notes. These results are different than those of the RCM, which estimates a unit cost of only 0.8 cents, unit profit of 0.2 cents and a positive seigniorage of \$1.5 million per year (0.2 cent x 750 million units).¹³

It is important to keep in mind that, if we had assumed a unit cost of 1¢, there would be no loss, and the cost of issue would be \$7.5 million. As you will see further on, such a choice does not make a significant impact on our total cost estimate for all economic agents (consumers, businesses and the government) of having a one-cent coin in circulation. It would be the same if we had a cost of 0.8¢ per unit. **A small net gain for the government or a small loss does not change our conclusion.**

4.2 Financial institution costs (FIC = \$20 million)

Financial institutions spend considerable amounts of money each year to store (including loss of interest), transport and record deposits and withdrawals of billions of pennies by companies and consumers. Using the volume of operations and costs of Desjardins Group caisses as a reference, we estimate that Canadian financial institutions together handle more than nine billion pennies per year, which translates into an annual cost of at least \$20 million.

4.3 Costs for retail businesses (RB = \$60 million)

The costs of this group are associated with storage, transportation, accounting, deposits and withdrawals by financial institutions, and the time required at cash registers

¹³As well, it should be noted that the unit cost of 0.8 cents disclosed by the RCM has not increased in recent years in spite of the strong increase in the price of metal (including an increase of around 200% for steel, which has made up 94% of the one-cent piece since 2000). For its part, the United States Mint, the American equivalent of the RCM, has revealed that the unit cost for its penny has increased from 0.98¢US in 2004 to 1.23¢US in 2006, and it anticipates a cost of 1.40¢US for 2007.

to collect pennies from customers or to hand them out. All these tasks are performed by salaried employees. We estimate the annual cost to be about \$60 million, one third of which is devoted to deposits and withdrawals. It should be noted that consumers support these costs because they are included in the selling price of some goods and services.

4.4 Partial total (approximately \$90 million)

The total annual cost of the first three groups amounts to some \$90 million. Consumers can support these costs in various ways: in addition to obtaining pennies at a unit price of one cent, they must also pay bank fees and higher prices for goods and services.

4.5 Additional costs for consumers (CC = \$40 million)

In addition to the foregoing costs, consumers must also support others, which are unfortunately even more difficult to calculate such as carrying pennies in your pocket or wallet and the time spent looking for and counting them during cash transactions. Every person spends an average of two seconds per day on these tasks. Adding this time and assigning a value of \$5 per hour produces a total of almost \$30 million.¹⁴

Those who do not take the time to look for their money in their pocket or wallet to settle cash transactions tend to accumulate coins at home. Many don't even bother to roll the coins to deposit them in a financial institution. Households often accumulate a considerable amount of coins at home. A reserve of 20 billion one-cent coins in circulation results in an annual loss of \$8 million in interest revenue (at a rate of 4%).¹⁵ If one fifth of the population spends one hour per year rolling pennies and depositing them in financial institutions, the total cost, at \$5 per hour, amounts to \$32 million. In this last cost category, we could add the time spent waiting in line at cashes while someone searches for one-cent coins to pay for a purchase in cash.

¹⁴We would have obtained an estimate of similar magnitude if we had selected an hourly wage that was closer to the minimum wage (\$7.00 to \$7.50) and excluded young children from the figure for total population.

¹⁵We allocate all these costs to consumers to avoid calculating the proportion held by the other agents (private sector companies and financial institutions). We implicitly assume that these agents pass these costs on to consumers through service charges.

These three costs add up to approximately \$70 million. To be conservative, we will use in our subsequent calculations an amount of \$40 million, which represents a cost of \$1.25 per capita per year.

4.6 Total cost (TC = \$130 million)

The total cost assigned to the four groups therefore amounts to \$130 million per year, or just over \$4 per person (a little more than one cent per day). In light of the foregoing, we therefore believe that it is preferable and beneficial to remove the one-cent coin from circulation. Note that the amount of 130 million dollars is not that far from the amount included in the article by Chande and Fisher; these two researchers had estimated a net economic loss of 95 million dollars for the year 2000.

4.7 Consumers, the big winners

Based on the assumption that private sector companies and financial institutions transfer to their customers the costs associated with storage, distribution and use of the one-cent coin, we can draw the following conclusions:

1. Consumers will benefit from the elimination of over \$100 million per year in costs. A portion of these benefits will come from the reduction of some prices and of some fees charged by the private sector companies to the customers reflecting, all else being equal, a marginal reduction of their costs.¹⁶ Removing the penny from circulation would also save time associated with using the one-cent coin.
2. Private sector companies would not realize losses or gains in the long run.
3. Given that, according to our assumptions and calculations, penny-related government costs exceed revenues (negative seigniorage), the government would see net revenues increase over the long term by discontinuing the one-cent coin. Because its costs would fall, the government could marginally reduce its taxes and income taxes or allocate these amounts to other programs.

Besides the RCM (which would lose an order of approximately 800 million coins per year), only the

¹⁶We use the term "marginal" because the costs associated with circulating the one-cent coin are extremely low compared to the total cost borne by private sector companies, financial institutions and the government.

following private sector companies would suffer from the removal of the one-cent coin:

1. Canadian mining companies and those in the metal sector that produce the metal used to produce the one-cent coin;¹⁷
2. Armoured carriers (coins, financial securities, etc.); and
3. Companies that manufacture coin rolls and boxes.

These three types of companies would have to replace lost sales. The RCM, for instance, could increase its order book by expanding onto international markets, where it recently began to secure contracts. Taxpayers must not forget that these companies are in a conflict of interest when they give their point of view on removing the one-cent coin from circulation.

What's more, if the metal used in making the penny was all imported, the withdrawal of the penny would have no negative effect on Canada's mining companies and businesses in the metallurgy sector.

4.8 Environmental impact

Mining, metal processing, the manufacture of alloys, the production of coins and transport at the different stages (extraction, processing and delivery of coins) require energy of different sorts and are therefore a source of pollution. This does not take into account the increasing number of coins that are thrown away and that end up in incinerators or landfills. As such, the one-cent coin is not only useless, it also has negative externalities for the environment.

4.9 Additional comments

As mentioned earlier, the slight profit (positive seigniorage) or loss (negative seigniorage) that the government would realize has little effect on the total cost and therefore has no impact on the decision to be made.

As a society, are we ready to bear an additional cost of \$100 million or more per year on the pretext that we must artificially support certain companies and the RCM and that the one-cent coins still make good gifts for children and facilitate some forms of charitable fundraising? It bears mentioning that if the one-cent coins are removed

¹⁷Orders for one-cent coins constitute only a tiny portion of these businesses' revenues and sales.

from circulation, the five-cent coin would, in all likelihood, replace the penny as children's and charitable gifts.¹⁸

The transition costs associated with removing the one-cent coin are low. Consumers who want to retrieve the value of the pennies in their possession will, one last time, make the effort to roll the coins in their possession and deposit them in their financial institution. Charitable organizations could do the same. The cost to retailers will be next to nothing since no changes will have to be made to the cash registers; there would simply be one extra slot in the cash drawer. Because vending machines no longer accept pennies, they will not need to be modified. Lastly, the government (only it could do it) could recover a good portion of the cost of reimbursing financial institutions for the transportation costs incurred to ship back the coins returned by businesses and the general public by reselling the one-cent coin metal. It should be mentioned that the value of the metal of coins issued before 2000 is much higher than those minted in the new millennium.

5. NEW ZEALAND'S EXPERIENCE

The following is a summary of the information that the Reserve Bank of New Zealand (RBNZ) sent citizens to justify the removal of the five-cent coin. It will be recalled that the discontinuation of the one-cent and two-cent coins at the end of the '80s and in the early '90s was a resounding success, and the RBNZ removed its five-cent coins from circulation last July 31st. The arguments currently being presented to the public are as follows:

1. The drop in purchasing power of the five-cent coin: "A 5-cent coin is now worth less than half what a cent was back in 1967...;"
2. The more frequent use of other methods of payment besides cash;
3. Negative seigniorage (one million dollars per year);
4. The coins do not circulate: "Shops give them to the public as change, and then they are stored at home or thrown away;"

¹⁸It is interesting to note that in 2006, the charitable organization UNICEF decided to stop collecting money door to door. According to the organization, the collection of coins was a logistical challenge because the coins were very heavy and took a long time to count every year. UNICEF maintained that there was also a question of security for children. The endeavour was just no longer worth it.

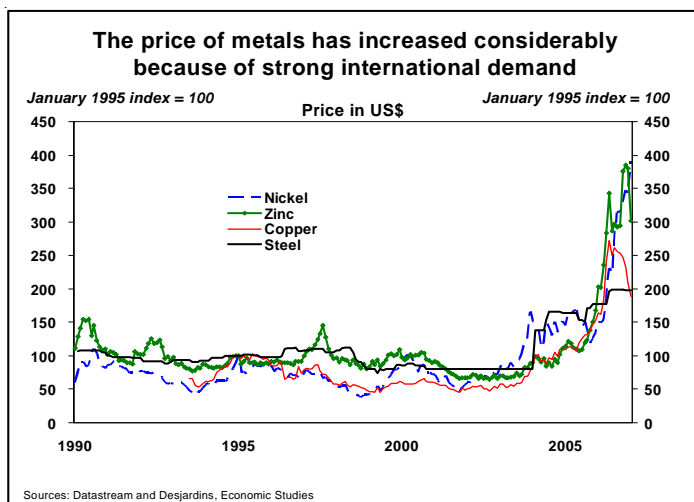
5. Sixty-eight percent of the public is in favour of removing the five-cent coin from circulation because it is not very useful: "...has no value and is a nuisance. ...without them there would be less work and cost in sorting their takings," and
6. Removal of the five-cent coin will not increase prices: Retailers will not systematically round up their prices. **It should be noted that the removal of the one-cent and two-cent coins did not result in an increase in prices in New Zealand, because retailers rounded prices symmetrically.**

"Some people have expressed concern that withdrawing the 5 cent coin would cause inflation, as retailers would round prices up. We believe this is unlikely to occur as retailers would round up and down as they did when the 1 and 2 cents were removed in 1990 and rounding would only affect cash transactions and only final totals."

Reserve Bank of New Zealand
Press release, March 31, 2005.

6. THE DEBATE IN THE UNITED STATES

With the rise in the price of metals, the American penny now costs its manufacturer more than it is worth. In fact, the United States Mint, which mints coins in the U.S., revealed to a Congressional committee last July that it would cost around 1.23 cents in 2006 and 1.40 cents in 2007 to manufacture the one-cent coin (this organization also mentions that the cost of manufacturing the American nickel would be approximately 7 cents in 2007, or 2 cents more than its face value). The United States Mint produces a little over eight billion pennies per year.



The fact that the value of the American penny is higher than its nominal value even forced the United States Mint, in December of last year, to prohibit the melting or export of coins. The law now allows for a maximum fine of US\$10,000 and up to five years in prison for violations.

The United States Mint has mentioned that it will soon propose other more economical metal alloys. However, this did not prevent Republican Congressman Jim Kolbe of Arizona from tabling a bill last summer to progressively phase out the American penny. It was the fourth such attempt by a member of Congress since 1989. Jim Kolbe has claimed that the penny is a nuisance for American society and that it costs the federal government around \$20 million per year (negative seigniorage). He proposes symmetrically rounding cash transactions to the nearest 5 cents.

These developments south of the border have led a number of specialists to weigh in with their opinion. An economics professor from Wake Forest University, Robert Whaples, even managed to conduct a simulation with retailers' datas in seven states (in the Southeast and Middle Atlantic region of the U.S.). Using 200,000 transactions, he proved that rounding was, on average, done symmetrically.¹⁹ The systematic rounding upward did not occur, eliminating the myth of the "rounding tax." As well, the results of this simulation did not show a difference between the transactions in poor neighbourhoods and those in rich neighbourhoods, as some claimed would arise; there was no new tax on the poorer members of society, who are normally party to more small cash transactions.

The debate on whether to save the penny is more topical than ever in the United States. The last time that our neighbours pulled a low-value coin from circulation was in 1857 with the removal of the half penny. It is very likely that it will take Americans a few more years to eliminate the penny. The majority of them want to keep it. On the other hand, Canada does not have to follow their example. After all, American society is very conservative, particularly with its symbols (for example, the U.S. did not adopt the metric system and has not replaced the dollar bill with a dollar coin).

¹⁹In fact, he took actual retail datas from a firm that didn't practice rounding and saw what would have happened if these totals had been rounded.

7. CONCLUSION

Our argument to support removal of the one-cent coin in Canada follows the same reasoning as the RBNZ. Certain arguments are even stronger because they pertain to the one-cent coin. The very positive experience of New Zealand and other countries gives further credibility and weight to our argument.

Unlike us, the RBNZ does not provide cost estimates for financial institutions, retailers and consumers. It undoubtedly wanted to avoid getting into a war of figures, believing that all the other arguments were sufficient to justify its decision to the public. For our part, we believe that our very conservative estimates, while perhaps not very precise, will help the decision makers make an informed choice. In fact, at a time when the Canadian economy has difficulty competing on international markets, here is a way, however marginal, to increase our productivity. In the current context of globalization, there is no such thing as small savings in reducing our costs and becoming more competitive.

The first step to take in order for the government to decide to remove the penny from circulation is to convince the Minister of Finance on the merits of such a course of action. If the senior management of the Bank of Canada decided (like the central banks of New Zealand and Australia) to publish the work of the researchers in the field and publicly stated that removing the penny from circulation would have no effect on the Consumer Price Index in the medium and long terms, many consumers would be reassured. Such a process would facilitate and also step up the decision of the federal government to proceed with removing the one-cent coin from circulation.

At this time, we do not think that it would be appropriate to discuss removing both the one- and five-cent coins. We believe it is important to proceed in stages as New Zealand did. However, if discontinuing the one-cent coin is successful, and there is every reason to believe it will be, and if the experience reassures the public, the federal government should consider, few years later, the relevance of removing the five-cent coin. In 2010, the purchasing power of this coin will be approximately one-quarter of the value of the one-cent piece in 1908!

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- Discussions of early versions of this text with representatives from the federal government's Department of Finance.
- Presentation of a seminar at the Bank of Canada.