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**THE MEASUREMENT OF INTERNATIONAL TRAVEL SERVICES: CURRENT METHODOLOGY
AND ALTERNATIVES - INCLUDING THE USE OF CREDIT CARD INFORMATION**

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Note by Canada

Background

1. Total international travel spending represents a small portion of the current account of the balance of international payments, but it is a relatively volatile component. International travel spending has, by far, the largest impact on the overall trade in services balance. Passenger fares, included in transportation add to that volatility¹. As such, it can have a large impact on the BOP current account balance as well as on the trade component of the gross domestic product. Further, initial estimates in the current period are constructed without the use of the actual spending data (available only for the second estimate), leading to initial estimates in the current quarter that are revised with the subsequent quarter.

2. Given that the travel data are used in different components of the Canadian System of National Accounts, such as in the household final consumption expenditure, it is important to continue to try and improve the accuracy and reliability. One such effort is to establish better data sources. One source that we have looked at in some detail is credit card data.

Some recent trends

3. In 2010, 20.3 million United States travellers entered Canada. Of that number, 14.4 million entered by automobile². There were 4.5 million travellers³ arriving from destinations other than the US. They accounted for 55% of the \$16.2 billion⁴ of foreign travel spending in Canada. For the same year, 44.9 million Canadians went to United States. Of that number, 36.4 million of Canadians returned from United States by automobile. There were 8.7 million Canadians who visited a country other than the US. Their spending represented 40% of all Canadian travel spending which was estimated at \$30.5 billion for 2010.

¹ Between 2001 and 2010, Canadian deficit for travel and passenger fares combined increased by \$16.0 billion while the rest of the service deficit varied between \$3.7 billion and \$5.7 billion during that whole period.

² More than half of these people came to Canada on a same-day trip.

³ Of that number, 0.7 million travellers entered in Canada by land (though United States) or sea.

⁴ All amounts in this document are denominated in Canadian dollars unless otherwise identified.

4. The fluctuations over the last 10 years in travel receipts and payments have been important; especially travel to and from the United States. In 2010 the number of travellers from the US was less than half of what it was in 2001. However the number of Canadians going to US has been closely correlated to the appreciation/depreciation of the Canadian dollar against the US dollar since 2003⁵. As a result, volumes were 30% higher in 2010 than in 2003; and, the travel deficit with United States reached \$10.9 billion in 2010 compared to a \$1.2 billion deficit in 2001.

Canadian System of National Accounts data requirements

5. Most of the international travel statistics are produced by the tourism program at Statistics Canada⁶. These statistics are essential to estimate several national and provincial macroeconomic aggregates in the Canadian System of National Accounts such as gross domestic product, consumer spending, imports and exports of services and elements of the tourism indicators program, such as the tourism satellite account and the quarterly national tourism indicators.

Balance of international payments

6. The Canadian balance of payments needs travel spending broken down by purpose of travel (personal or business) with further details on (personal) spending for medical and education travel as well as (business) spending by border, seasonal, and other short-term workers. BPM6 also proposes a supplementary presentation for travel based on the type of expenditures (goods, local transport, accommodation, food-serving, other services). Passenger fares which are closely related to travel spending are to be broken down by mode of transport.

7. Most of the BPM6 data requirements are met and published (at least on annual basis) with the exception of the Acquisition of goods and services by border, seasonal, and other short-term workers which are not separated from the other business travel statistics⁷.

8. The quarterly published travel services are broken down between personal and business travel spending based on the purpose of the trip. Further details, for internal use, are produced for spending on education and medical travel, and for crew spending. Figures are estimated for the six geographical areas available in the Canadian balance of payments (United States, United Kingdom, other European Union countries, Japan, other OECD countries, and all other countries). Passenger fees, available quarterly for the six areas, are included in the transportation statistics on the basis of the mode of transport. Annual travel spending without further breakdown by category is published for more than 50 countries.

⁵ At the end of 2002, the Canadian dollar had a value of 0.63 US\$. It closed 2010 being equal to the US dollar.

⁶ Tourism and Center of Education Statistics Division (TCESD) of Statistics Canada

⁷ In the different Canadian surveys on international travel, there is a question about the purpose of the trip. Under "Business purposes", there are three options: a) Meetings; b) Convention, conference, etc.; c) Other work. The category "Other work" could apply not only to border or seasonal workers but also to individual service provider.

Gross domestic product (expenditure based)

9. Travel spending and passenger fares are both included in the exports and imports of services. However, foreign travel expenditures are embedded in household final consumption expenditures data, by type; while Canadian travel expenditures are not included in household final consumption expenditure data, by type. As such, an aggregated expenditure adjustment “Net expenditures abroad” is made to remove foreign spending⁸ and include Canadian spending⁹. For the calculation of the annual provincial economic accounts, travel spending is produced on a provincial basis. While the number of travellers visiting Canada are distributed based on the Canadian province of arrival-departure, their spending is distributed according to the details provided in the source data from the different questionnaires.

Input-Output System

10. The Canadian Input-Output system consists of three sets of tables: The input tables detail the commodities consumed by the industries, the output tables show the commodities produced by the industries and the final demand tables detail the commodities purchased by the different buyers (consumers, industries and government) for consumption or investment purposes.

11. To allocate the travel spending and the passenger fares by commodity and by industry, the Input-Output System requires a minimum of detail from the travel surveys. Spending by activity for at least the following categories is needed: Accommodation, transportation, food and beverage, recreation, other spending. The split between business and personal spending allows for allocation by industry. These breakdowns are eventually broken down into about 150 input-output commodities, with a provincial distribution.

Canadian tourism statistics, including the Tourism Satellite Account

12. The Canadian Tourism Satellite Account provides a coherent framework within which to integrate and analyse economic statistics relevant to tourism, both on the supply (*i.e.* industry) side and on the demand (*i.e.* tourist) side. It also defines what are considered to be the tourism commodities and the tourism industries in terms of output, and such things as employment¹⁰.

13. The tourist demand combines detailed results from domestic and international travel surveys. The detailed information on spending by category (accommodations, goods, food-service, domestic and international transport, etc.) allows appropriate demand-supply reconciliation.

14. The Canadian Tourism Satellite Account requires a more complete set of details than what is needed for balance of payments purposes. For example, details on transportation activities inside the

⁸ Spending by foreign travellers in Canada and fares paid by foreigners to Canadian carriers.

⁹ Canadian non-business sector spending abroad.

¹⁰ For more details, please see Canadian Tourism Satellite Account, 2004, Catalogue no. 13-604-M – No. 063, Statistics Canada.

visited country is not necessary for the calculation of balance of payments' travel services but essential to the satellite account which also covers domestic industries and commodities.

Current approach to estimate statistics on international travel services

15. The international transactions on travel services are estimated through a combination of traveller surveys and frontier counts. A number of different datasets on international travel are disseminated by Statistics Canada, including the monthly volumes of travellers, quarterly data on the main characteristics of international travellers, and quarterly expenditures of international travellers as reported in the balance of payments and the income and expenditure accounts.

Frontier counts

16. The frontier counts are compiled at all ports of entry into Canada. Their objective is to determine the number of travellers by country of residence, by selected categories of travellers (*i.e.*, business, personal) and by mode of transportation.

Air travel

17. All travellers entering Canada by commercial plane have to complete a Customs declaration card which identifies the name of the travellers, their address/country of residence, the purpose of their trip (business or personal), and where they are coming from¹¹. Up to four people living at the same address can report on the same card. Only a sample of these cards is processed by Statistics Canada to generate the counts. The size of the sample depends of the airport of entry, the residency of the traveller and the origin of the traveller.

Land travel

18. In addition, statistics on number of people crossing the Canada-United States borders by land are recorded by the Canada Border Services Agency and that information¹² is processed by Statistics Canada.

Traveller sample surveys

19. Traveller questionnaires are distributed to a sample of Canadians and visitors at several ports of entry on the borders between Canada and United States and at the Canadian airports providing international flights¹³.

¹¹ The respondent has three options: 1) Directly from United States; 2) Directly from another country than U.S.; 3) From another country via the United States.

¹² For U.S. and Canadian residents, details available are the number of travellers on a same-day trip, spending one night abroad, and spending more than one night abroad. The number of travellers from each country other than the United States is also compiled.

¹³ Currently, Canada Border Services Agency staff distributes the questionnaires.

20. A detailed survey is used to collect information from non-US travellers coming to Canada, United States travellers visiting Canada and Canadian residents returning from trips outside the country¹⁴. The long survey includes key questions to establish the country of residence of the traveller, the purpose of the trip (which allows to estimate business travel spending versus personal travel spending), and the length of the trip.

21. A shorter version of this questionnaire is available for Canadian and United States residents returning to Canada or entering Canada on a same-day trip by automobile. The questions on the purpose of the trip include a specific category for commuters.

22. In order to improve the response rates from overseas travellers, another version of the long survey was implemented in 2000. The Air Exit Survey of Overseas Visitors (AES) returning directly to selected overseas countries is conducted through personal interviews in designated airports in Canada¹⁵. Overseas travellers are interviewed while they are waiting to embark on selected flights.

Methodology: Travel expenditures

23. The question on total trip spending (excluding the fares) provides the basic estimates for travel expenditures. Expenditure estimates are validated via a second question, which details the expenses for some specific categories of goods or services¹⁶. This supplementary information is also used to generate the composition of the spending and, from that, the share of travel spending in the household consumption expenditure. This information must then be deflated to produce real estimates of spending.

24. In addition, the questionnaires for foreign visitors request details on destinations or places visited¹⁷ and the share of total expenditures (travel and fares) paid by business, by government and by individuals¹⁸. That latest information is also used for a series of adjustments in the national accounts.

25. The characteristics of the travellers answering these sample surveys are combined with the characteristics of the whole population of travellers (as derived by the frontier counts) to produce aggregate

¹⁴ There is a specific version for each of these groups of travellers.

¹⁵ The Air Exit Survey of Overseas Visitors gathers the same information as the Government Travel Survey of Visitors to Canada. However, for certain questions, the questionnaire has been simplified to help the respondents. The survey is conducted in airports of five Canadian cities (Calgary, Halifax, Montreal, Toronto, and Vancouver) while travellers are waiting for their flights. Employees from Statistics Canada conduct these interviews.

¹⁶ Spending is broken down for the following categories: Accommodation, Transportation within country(ies) visited, Food and beverages, Recreation and entertainment, and Other spending.

¹⁷ For foreigners visiting Canada, this information is used to produce provincial distribution of travel spending.

¹⁸ For Canadian travellers, spending paid by households is between 3% and 4% higher than spending on personal travel as more than 20% of the spending on travel with purpose being business is paid for by households.

estimates on travel spending¹⁹. On a quarterly basis²⁰, total travel spending is produced and published for the six regions shown in the Canadian balance of payments while annual totals are available for several countries and areas. Travel details²¹ are published annually for United States and for all other countries combined.

Methodology: Transportation fares

26. The passenger fares are derived from the same sources, through information on the use of associated costs for all modes of commercial transportation to enter or leave Canada. By combining responses on the carrier names, the type of fares (first class, etc.), and the prices of these fares, the estimates on passenger fares are generated and validated. The characteristics of travellers are compared to the characteristics of the questionnaire respondents to generate global estimates on passenger fares.

27. Statistics on passenger fares are produced on a quarterly basis and values are combined for the six regions published by the quarterly Canadian balance of payments. On an annual basis, these fares are generated for a long list of countries. However, no separate statistics on passenger fares are released on a quarterly basis as passenger fares components are combined with other transport service items. On an annual basis, total passenger fares by air and by land are released.

28. Passenger fares by mode of transport are only generated for Canadians using U.S. carriers or United States travellers using Canadian carriers. All the other fares are combined together under the category of air transport passenger fares.

Alternative sources of data

29. In recent years, there have been increased efforts at Statistics Canada to leverage other potential sources of information in order to (i) to partially or entirely replace the traveller questionnaires, (ii) possibly improve current estimates, and (iii) to provide/acquire further details on international travel services. The processing of questionnaires and Customs declaration cards has been discussed and various options to reduce costs and improve quality have been reviewed.

30. It is important to note that any alternative approaches to estimating international travel spending will require the retention of the traveller frontier counts.

¹⁹ The port of entry, the purposes of the trip, the country of residency of the foreign travellers or the area visited by Canadian travellers are among the characteristics used to weight the responses from the questionnaires.

²⁰ Because of the time involved in the processing of the questionnaires, survey results are not available at the time of the quarterly production of service estimates. Instead, preliminary estimates on travel spending and on passenger fares have to be generated. These estimates are mostly linked to the volume of travellers. Survey results are available with one quarter lag.

²¹ This covers Personal travel: 1) Health related; 2) Education related; 3) Other personal travel. For Business travel the details are: 1) Crew spending; 2) Other business travel.

31. In contrast to Canadian business surveys for which more effort have been made in the use administrative (taxation and other) data where possible to reduce respond burden on enterprises, it is more challenging in the case of travel estimates. However, some options seem feasible, in the event that traveller surveys become partially or completely unavailable. Modelling and other sources, such as credit card information have been discussed. The challenge is the detail required for the various national accounts programs. Credit-debit card transactions may provide very useful information. Other sources such as passenger statistics provided by Canadian and foreign airlines might also have an interesting potential.

Questionnaire redesigns and processes

32. The five traveller questionnaires are currently being reviewed for consolidation into two questionnaires, one for Canadian travellers and the other for foreign travellers. This will simplify the distribution at the different ports of exit. Another proposal is to extend the Air Exit Survey to U.S. travellers. The survey currently provides good results for non-U.S. foreign travellers. Finally, some initiatives have been taken recently to increase the number of questionnaires distributed at some specific points of exit and imputation processes were also reviewed to improve the quality of the estimates.

Electronic surveys

33. The notion of an internet version of the questionnaires has been discussed as an option. The idea is that travellers would receive a card inviting them to complete an on-line questionnaire. This approach has the advantage that it may well simultaneously increase response rates and reduce response burden.

Social surveys

34. Adding questions to the annual Survey of Household Spending (SHS) was also considered as an option. In this case, annual estimates would be available one year after the reference period. While coverage of Canadians traveling on the S H S is relatively small it is may be possible to derive a good estimate of average spending, which can be applied to the number of travelers by type to produce estimates of personal expenditures (GDP) and imports (BOP). There are three main issues with household survey data:

- Lacking the business/personal split that is required for GDP purposes;
- No information on foreign travelers to Canada for BOP (exports) and personal expenditures (to compute net expenditures abroad) purposes; and, no commodity detail to speak of.

35. This would provide a good control total for non-business spending, and would supply some basic details. Unfortunately, it would only cover Canadian spending on domestic and foreign travel.

Modelling data with counts and past patterns

36. Modelling based on exogenous variables and established patterns are another option that could be judiciously used. Increased use of modelling would likely be in combination with other options. The challenge with respect to a modelled approach lies mainly with the amount of detail required by the national accounts' programs.

Airlines survey data

37. The surveys on air passenger origin and destination for schedule air services and air charter services collect statistics on the number of passengers leaving or entering in Canada (as well as all domestic flights) by departure and arrival airports, and by airline. These surveys cover all airlines (Canadian and foreign) having activities in Canada.

38. The survey for air schedule services, in its current form, requests the number of passengers flying between two different points without further details on the nationality of the passenger. However, in the survey for air charter services, there is a split between passengers of Canadian origin and passengers of foreign origin²².

39. The Fare Basis survey collects sampled information of the ticket fares by fare type (first class, business class, etc.) and by origin and destination from Canadian scheduled air carriers. The results of this survey could be used as an indicator if the information on passenger fares from the various traveller surveys becomes unavailable. The survey does not have full coverage of all air activities in Canada and does not provide details about the residency of the travellers but still could provide useful indicators about the price trends.

40. Adding questions to these existing surveys could be investigated. In particular, with the current and ongoing security issues related to air transportation, the split between Canadians and foreign passengers is likely to be available from the airlines.

Airlines administrative data

41. Airlines have and likely will maintain considerable administrative information on the origin and destination of travellers as well as nationality, the duration of trips, and possibly on the business-personal split if most business travel (large firms and government) is booked by the institution as opposed to the traveller. These data would likely be required and analyzed for marketing and route planning in response to changing demand. Much of this information, if it could be obtained, could be used to reduce traveller surveys.

Credit-debit card information***Partial credit card data***

42. Aggregated monthly statistics on payment card usage both domestically and internationally are provided to Statistics Canada. This information is timely, arriving no later than 15 business days after the end of the reference period. These data are currently in use as a data confrontation tool, to help validate the net expenditure abroad estimates.

²² More than 95% of the passengers on charter flights are Canadians.

43. Information is available by class of card holder (personal or commercial), residency (Canadian residents or non-residents), and location of the transaction (in Canada or outside Canada). More specifically the following six classes are available:

- Personal credit card purchases made in Canada by Canadian residents;
- Commercial credit card purchases made in Canada by Canadian residents;
- Personal credit card purchases made in Canada by non-residents;
- Commercial credit card purchases made in Canada by non-residents;
- Personal credit card purchases made outside Canada by Canadian residents; and,
- Commercial credit card purchases made outside of Canada by Canadian residents.

44. Transactions are grouped for a list of 41 different merchant classes such as:

- Accommodation
- Airline
- Car rental
- Full-service restaurants
- Other retail
- Travel agencies
- Etc.

45. Data are provided on the value of the transactions in Canadian dollars. Information is only available at the national level; there is no provincial or territorial breakdown.

46. These statistics are used as an indicator to validate the personal expenditures component in the gross domestic product as well as the net expenditure abroad estimate. The statistics currently available, although providing some valuable information about the trends in domestic and international expenditures, still need to be used carefully due to their coverage.

Challenges with credit card data

47. The first issue with coverage is that these statistics are not supplied by all credit card companies, and changes in market shares do occur. To make this approach more effective, it would be ideal to obtain data from all credit card companies. If this can be accomplished, we may face the further challenge of the classification/definitions of expenditures might not be compatible between providers. This is likely a relatively small concern. Nevertheless, the data received currently is part of a data exchange arrangement and may be terminated at any time.

48. The following other caveats are worth noting with respect to the credit card information.

- The split between commercial and personal use is determined by type of card used and not the final use of the good or service

- Merchant groups are more closely aligned with industries that with commodities, such that they represent the location of the purchase rather than the good or service purchased
- It would be difficult to develop an estimate of the credit card spending per trip, even if the number of transactions were provided. Assumptions would need to be made regarding the number of transactions per trip or the number of trips per cardholder in a given month
- Data represent purchases made at Canadian or foreign businesses whether when travelling or via the phone or internet. Therefore it cannot be assumed that all transactions represent travel spending, though the nature of the merchant may assist in clarifying this issue. In addition, capital purchases may be included among the transactions, such as timeshare purchases or down-payments on properties.
- The timing of data is also an issue since credit card data reflect the date when the purchase is recorded, while travel/transportation spending should reflect the period when the delivery of the service is completed. However, this issue is likely more the case for air ticket payments which are not part of travel service but impact on the transportation services.
- Purchases from Canadian travel agencies will be shown as purchases made in Canada, even though part of these expenses may be for travelling outside the country²³.

49. As currently provided, these statistics (because of their level of aggregation) do not provide any information about the exact country where purchases by Canadians are made nor country of origin of the foreign client who trades with a Canadian business.

50. Contrary to the traveller surveys, using credit card information will make it very difficult to develop an estimate of credit card spending per trip, even if the number of transactions is provided.

Debit cards and other gaps

51. Debit card transactions, in particular withdrawals while travelling, likely account for a reasonable share of travel spending. Debit cards may also be used differently than credit cards — say, credit cards for accommodations and some other miscellaneous expenditure, and debit card withdrawals for shopping and a large percentage of meals. This would have implications for expenditure allocations by commodity.

52. Travellers' cheques, though on the wane, might also have to be considered in a broader study of alternative sources to estimate travel expenditures.

Going forward

53. A large amount of work and data development would be required to determine if the credit card data could be used to estimate Canada's net expenditure abroad or the international travel account. In order

²³ For example, Canadians could book their flight and hotel for a trip to United States through a Canadian travel agency. It is likely that the travel agency will use its commercial credit card to conclude the transaction with the U.S. airline and U.S. hotel.

to explore this in more detail we would need to work with suppliers, as further details/breakdowns are required for statistical purposes. In particular, we would need to:

- Determine if additional country detail could be made available with respect to Canadian purchases abroad and non-resident purchases in Canada.
- Determine if we can obtain the Canadian region of the merchant where the transactions have taken place as well as by the Canadian region of the cardholder
- Determine if there is a flag or indicator identifying whether the purchase was made via the internet, telephone or at the merchant location
- Establish a better understanding of credit card companies merchant classifications in relation to Statistics Canada's industry and commodity classifications
- Establish an approach to estimate average expenditure, per cardholder, per trip. In addition we would want a sound method of what constitutes a trip and what constitutes a cardholder²⁴

54. Clearly, country of residency of the card holder and country of residence of the merchant are two key elements. Such detail could even lead to a better geographical breakdown of the Canadian payments than the current methodology. Ideally, the effort on credit cards should be extended to debit cards, however obtaining this information from financial institutions or clearing houses might be a significant undertaking.

55. Obviously, overlap between better credit-debit card statistics and traveller survey results will be a great advantage in our capacity to validate these new sources of data and the assumptions used to generate new estimates of travel spending. Models could be built by comparing the current portion of travel spending allocated to fares, accommodation, and other spending with detailed credit-card statistics.

Summary-Conclusion

56. Statistics on international travel are important components for the Canadian System of National Accounts, not only for the balance of payments. These statistics are included in various SNA components and can have a significant impact on different economic variables.

57. The current process that generates travel statistics is mainly based on a combination of traveller questionnaires and counts of travellers. The exercise involves a number of different sources but also provides an important list of details. Reduction or elimination of these sources would have a significant impact on the capacity of the Canadian System of National Accounts to produce accurate estimates related to international travel.

58. That being said, we are planning to continue to explore new data options, with credit-debit cards being an important one alongside potential airline administrative data. Any new data sources must first be secured, analysed for required detail, as well as confronted with the current estimates so as to ensure the maintenance or improvement in quality.

²⁴ For example, a cardholder could be a family where one member is responsible for credit card purchases for the entire family.