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PIPES AND THE USE OF STATISTICS FOR ADMINISTRATIVE PURPOSES

Paper submitted by Statistics Canada[1]

I. INTRODUCTION

1. Information produced by the national statistical office (NSO) is often used in public program administration. Here are a few Canadian examples:

- statistics from the quinquennial Census of Population are central to the determination of electoral representation and boundaries and to the formulas that determine federal-provincial financial transfers for health care, post-secondary education and equalization;

- unemployment rates from the monthly Labour Force Survey are used to determine regional employment insurance eligibility;

1 Prepared by Philip Smith for the substantive discussion on "The Use of Statistics for Administrative Purposes.

- estimates of Gross Domestic Product are used to calculate Canada's annual financial contribution to a number of international institutions;

- counts of planing and deplaning passengers, collected by the Airport Activity Survey, are used to determine landing fees and airport space rents, and also play a role in the allocation of capital funding to airports and the administration of airport noise regulations; and

- statistics from the Spring Fruit and Vegetable Survey and the Greenhouse and Nursery Survey, measuring annual changes in planted land area, are used in a formula to administer the "Snapback Tariff" agreement between Canada and the United States.

Similar examples are easily found in other countries.

2. As the quality of national statistical systems improves over time and those systems produce more comprehensive and detailed information, and as government program administrators seek ways of improving the efficiency of their operations and reducing compliance burden, one might expect to find increasing use of official statistics in the administration of public programs. Clearly, the use of statistics for such purposes does have many associated benefits, but it also carries certain disadvantages. This is true whether viewed from the perspective of the government program administrator or the standpoint of the statistician, though the pros and cons are different in each case.

3. This topic is explored from both sides in this paper. In the course of doing so, a particular example is drawn upon quite extensively, one that is relatively new and rather unique in Canada. The example is the Harmonized Sales Tax, a value-added levy shared by multiple jurisdictions for which revenues are allocated inter-governmentally by means of a formula based on provincial economic accounts estimates. In support of this new tax, Statistics Canada commenced in late 1996 a major initiative called the Project to Improve Provincial Economic Statistics (PIPES).

4. The paper starts with a brief account of the origin, goals, scope and progress of PIPES, an interesting example of data development that is occurring in response to administrative requirements but also is enormously beneficial and in some respects not-so-beneficial for the statistical system as a whole. Thereafter the perspective of the public program manager is examined. Several positive and negative factors are identified as influencing whether or not such a manager is inclined to use official statistics to facilitate program administration. After the user's point of view is examined, that of the NSO is considered and some quite dissimilar determining factors are described. The paper concludes with a short summary.

II. PIPES OVERVIEW

5. About three and half years ago, Statistics Canada began work on a large project to expand and improve Canada's system of regional economic statistics. The broad objective is to produce comprehensive economic accounts, including interprovincial input-output tables, for each of Canada's thirteen provinces and territories. The substantial size of the project is illustrated by the fact it has led to a permanent increase of about 500 employees in Statistics Canada's workforce, a rise of about ten per cent.

6. PIPES came about largely because of a sales tax harmonization initiative by the Canadian federal government and three of the provincial governments. In this initiative the four governments' individual sales taxes were combined into a single 'Harmonized Sales Tax' (HST) in order to simplify the tax system for consumers and businesses, and to realize economies in the administration of the sales tax system. Prior to harmonization there were four taxes, each with its own distinct rate, base and administrative framework and organization. Effective April 1, 1997 there is just one tax, with a single rate of 15% and a common base, administered by the Canada Customs and Revenue Agency. All HST revenues are collected in a single pool and allocated among the four governments by means of a jointly-managed formula based on aggregate statistics, most of which are supplied by Statistics Canada.

7. The HST is a value-added tax. Businesses pay tax when they purchase inputs, but are entitled to claim rebates when they remit the tax they collect on sales. Annual revenues generated by the HST are substantial and naturally the four governments are concerned that the intergovernmental allocation of these revenues be fair and impartial. When the new tax was being designed, one option considered was to ask all businesses collecting the tax to submit detailed statements with their remittances, accounting for the origin of taxable purchases and destination of taxable sales, the class of customer and some other information. Such data could then be used to calculate, with precision, the revenue share of each government. However, this option was considered seriously at odds with the overriding objective of simplifying the role of business in the collection of the tax. The alternative option of reducing the business reporting burden and using an allocation formula based on commodity expenditure statistics from the provincial economic accounts was attractive. However, statistical estimates from the existing system of provincial statistics were considered inadequate for the purposes at hand. The quality of source data varied greatly from province to province, information about interprovincial trade flows were lacking and business surveys did not treat multi-provincial enterprises with sufficient care. Accordingly, Statistics Canada was asked to develop a proposal to improve those statistics. Thus began the Project to Improve Provincial Economic Statistics.

8. The collection, analysis and dissemination of official statistics is a federal government responsibility in Canada and accordingly the provincial governments are not involved in the financing of PIPES. The aim of the project is to produce reliable annual economic accounts for all of Canada's thirteen provinces and territories, not just the three that are party to the HST agreement. It would be difficult, indeed awkward, to produce statistics for three provinces only. For one thing, it would not be possible to verify the completeness and internal coherence of data supplied by multi-provincial enterprises unless they were asked to provide data covering their activities in all of the provinces. For another, it would be exceedingly difficult to estimate interprovincial trade flows without complete data for all regions of the country. Restricting the scope to three provinces while still meeting the core objectives of the project

would just not be practicable. Of course, by extending the scope of the project to all provinces and territories the resulting statistics take on far greater value for purposes other than the HST. They are already being used, for example, to improve the equalization formula, under which the federal government transfers funds to the provincial governments with lower *per capita* tax revenue bases so they can provide an acceptable level of service to their citizens. Obviously, the statistics have much greater value for economic and policy analysis purposes when they cover the entire country. For these reasons, PIPES was focussed from the very start on producing good statistics for *all* of the provinces and territories.

9. The HST was designed to be a simple tax, with a single rate applied more-or-less uniformly to all goods and services. However, a variety of real-life circumstances mean that certain commodities and specific classes of customer must be treated somewhat differently. As a result, the HST rules yield an effective tax rate that varies for different commodities and for different classes of customer. The revenue allocation formula seeks to approximate the revenues each government would obtain if it administered its own tax individually. Accordingly the PIPES requirement is to provide annual statistics for consumer outlays and residential housing expenditure by detailed commodity grouping, and for the associated taxable proportions. Also needed are statistics on business, consumer and government purchases of tax-exempt commodities (that is, commodities for which producers are ineligible to claim rebates of tax paid on purchases of inputs).

10. To meet the needs of the HST formula, Statistics Canada has been substantially upgrading its system of provincial economic accounts (a system that has existed in one form or another for some twenty years) as well as the surveys feeding them. Even though the system saw notable improvements over the two decades prior to PIPES, the provincial estimates nevertheless were considered generally weak and of uneven quality when the HST came into being. The upgraded system now under construction is centred on an annual program of interprovincial input-output accounts, describing each provincial and territorial economy in terms of approximately 300 industry categories and 700 commodity groupings. Preliminary I-O accounts are released 34 months after the reference year, and revised final estimates are released 12 months after that.

11. Of course, the HST formula *per se* does not require all of the detailed information available in the I-O tables. Neither the I-O statistics on production by NAICS industry nor the full commodity I-O data are directly used. However, to produce the statistics that are needed for the formula, with an adequate degree of statistical quality, it is considered essential to use the coherent and comprehensive framework of the I-O accounts. The I-O framework permits demand- and supply-side estimates to be confronted and reconciled at a low level of detail, thereby enhancing statistical reliability, and it facilitates the derivation of estimates of interprovincial trade flows by commodity grouping. Moreover, while the HST allocation as such needs only a few broad commodity groupings, it is impossible to collect purchase and sales data for these groupings directly, since they are not aligned with any naturally occurring groupings of businesses in the provincial economies. Rather, the only feasible method is to build them up indirectly from more detailed commodity groupings that are aligned with real-world business groupings, the latter being the NAICS industries.

12. The system of provincial economic accounts also includes fully integrated income and expenditure accounts, and value-added-by-industry accounts. Preliminary annual statistics are produced 10 months after the reference year, a first revision one year later, a second revision incorporating information from the preliminary I-O accounts a year after that, and a third and last revision when the final estimates of the I-O accounts are released 46 months after the original reference period. The four governments party to the HST agreement use the preliminary provincial accounts statistics to determine interim revenue allocations, and the final I-O estimates to calculate final revenue shares.

13. As part of PIPES and in support of the new system of provincial economic accounts, Statistics Canada has been greatly expanding and improving the statistics that feed the accounts, information that comes from household surveys, business surveys and administrative records.

14. Three particular household surveys have been upgraded. The Survey of Household Spending, now conducted annually, seeks detailed information from a sample of about 25,000 households on expenditures by commodity grouping. The sample is distributed so as to obtain approximately equal sampling variances in each province and territory. The Homeowner Renovation and Repair Survey, conducted in conjunction with the Labour Force Survey, yields annual estimates of expenditures on various types of home renovations and major repairs by home-owning households. Finally, the Canadian Travel Survey, also conducted in connection with the Labour Force Survey, collects information about interprovincial travel by Canadians and associated expenditures by broad commodity category.

15. In the general area of business survey-taking, the opportunity afforded by PIPES is being exploited to revamp the overall methodological approach. A fundamental restructuring and expansion of the business survey system is under way, an activity that accounts for about two thirds of the total PIPES budget. Existing business surveys are being redesigned and expanded within the framework of a large, integrated 'Unified Enterprise Survey' (UES) and new industry surveys, covering important data gaps, are being initiated within this framework. The core elements of the UES concept are that business surveys should be well integrated, 'enterprise-centric' and make the fullest possible use of administrative data sources.

16. With respect to survey integration, the UES aims to make questionnaires more harmonious, with greater consistency in their 'look and feel', commonality of concepts, classifications and definitions, and minimal duplication of content. All UES surveys use the same business register, in order to ensure consistent statistical unit definitions, comprehensive and non-duplicative coverage, and frame maintenance economies across the program. The use of a single register for all surveys also greatly facilitates the monitoring and control of respondent burden. Under PIPES, the register has been roughly doubled in size, so as to include all businesses with significant annual revenue - not just in terms of the provincial economy overall, but also with respect to sales of each of the relevant commodity groups - and has been converted to the new North American Industrial Classification System. UES samples are chosen in an integrated manner, across the component surveys, so as to ensure roughly equivalent statistical quality overall for each province and territory. In other words, the estimates for a given province may have higher sampling variance for one industry and lower variance for another (depending

on the importance of the given industry in the economy of the particular province), but the aggregate, all-industries, provincial estimates have roughly equal sampling variances. The sampling and estimation approach is also more 'enterprise-centric' (more on this below) and draws extensively upon administrative data sources. Business respondents are being treated more fairly, flexibly and consistently during the survey collection phase. A few of the largest businesses, typically those receiving many different survey questionnaires, are now given the option of customized, 'one window' dealings with Statistics Canada by means of a team of 'Key Provider Managers'. Very small businesses are excluded altogether from survey samples, while the number of survey questionnaires sent to any particular business of moderate size is monitored. Post-collection processing of survey data is done in a more consistent manner across the business survey program. Similar edit, imputation, allocation, calendarization and estimation methodologies and procedures are now being applied to all surveys within the UES framework, using common databases and software tools. This more uniform approach to business survey-taking is thought to yield much more complete, non-duplicative and consistent data for the system of provincial accounts.

17. The aim to make business surveys more 'enterprise-centric' has several dimensions. First, in order to avoid double- or under-counting of establishments, totals obtained directly at the enterprise level are compared with data from the corresponding establishments. This process, referred to as data coherence verification, sometimes reveals serious, previously undetected problems in the data being supplied by particular enterprises. Second, data are collected from ancillary establishments, such as head offices, and then allocated in a consistent manner to the province and industry where the unit is located, with a corresponding expense imputation made against the establishments served by these units. Third, large enterprises unable or unwilling to provide detailed establishment-level data are invited, if they prefer, to furnish more aggregate information (for province-industry groupings, or in some cases just one set of numbers for the enterprise as a whole) along with a few establishment allocators. Statistics Canada staff then allocate the enterprise totals among establishments on behalf of the enterprise, so that full industry-by-province estimates can be compiled. Fourth, as mentioned, some large and complex enterprises are offered the option of 'one window' dealings with Statistics Canada, instead of having to deal separately with several different survey-taking areas within the agency. Fifth, the sampling and estimation strategy is focused on clusters of establishments within province-industry cells and when one such cluster is selected for the sample, so too are the others associated with the same enterprise. Finally, every effort is made to use tax data in place of survey data, in order to limit survey response burden. Since the tax data for a multi-establishment business relate much more directly to the enterprise as a whole than to a particular establishment, this requires an enterprise-centric allocation approach.

18. Whenever survey and administrative microdata are highly correlated, the possibility exists to exploit the administrative data to improve measurement accuracy and possibly timeliness, expand regional and industrial detail, and reduce survey response burden. In this respect, Statistics Canada is making a substantial effort to take full advantage of a rich new Canadian administrative data source called the General Index of Financial Information.

19. The Canada Customs and Revenue Agency, the Canadian federal tax department, has in recent years been implementing new electronic on-line systems to collect the corporate income tax. As part of

this big project, the office has designed a classification system for the main line items occurring in corporate financial statements. The system is already being used to enable corporations to file their annual income tax statements in digital format. Indeed, all corporations will soon be *required* to use this new system. Accounting and tax preparation software companies have readily embraced the idea and are offering businesses excellent tools to facilitate electronic tax filing. As a result, Statistics Canada will soon have at its disposal very timely and detailed annual financial data for all of Canada's one million incorporated business enterprises, information that, due to the standardization of financial statements, goes well beyond what is directly available from corporate income tax files in most countries. Under PIPES, a major effort is being made to build good database structures and processing tools, devise tax data editing and imputation strategies, improve tax data linkage information on the business register, and generally facilitate the fullest possible exploitation of this comprehensive administrative data source.

20. The UES objectives just outlined are ambitious and considerable progress has already been made toward their realization. These improvements to the business survey system, plus those to the household surveys mentioned earlier, are bringing about the regional statistical quality and detail that are needed for purposes of the new system of provincial economic accounts, the building of which is, in turn, the bottom-line objective of PIPES.

III. THE USER'S PERSPECTIVE

21. Depending on specific circumstances, the exploitation of official statistics in government program administration may offer potential for large cost economies compared to the alternatives, while at the same time reducing the overall compliance load on businesses. Administrators may consider it particularly advantageous to rely on statistics for public program purposes when they see a need for an 'objective', 'formula-based' means of allocating revenue or program benefits, as opposed to judgement or *ex post facto* negotiation. When this is the case and there are no administrative data available for the purpose, statistics may be the only option. Intergovernmental deals, or even 'social contracts' between one level of government and a class of potential beneficiaries, involve at least two parties, neither of which wants to leave the 'score keeping' to the other. If there is a generally well trusted and publicly recognized, neutral statistical agency, it becomes a natural choice for the provision of the often very sensitive information needed. The use of Statistics Canada data in the HST revenue allocation formula is a pertinent case where governments are drawing almost exclusively on information from the NSO in connection with the administration of a new public program. There are lots of other examples. Nevertheless one might ask why governments do not more frequently avail themselves of this kind of option.

22. One reason may simply be that government authorities perceive official statistics as insufficiently accurate to be used to administer certain programs. Statistical sampling, by its nature, allows a degree of imprecision. Statistical revisions may also feed a perception of inaccuracy, even if the final, revised statistics are in fact highly accurate. While in some instances such perceptions may be well founded, in others they can reflect misunderstandings. Sometimes administrative data collected, processed and directly utilized within government programs in lieu of official statistics may be significantly less accurate than their users understand to be the case. Indeed, there may be numerous situations where data

published by the NSO are a cost-effective, but neglected and under-appreciated alternative.

23. The dependability, responsiveness and service quality provided by the NSO can be a key factor. If they are to adopt official statistics for use in administering their programs, government officials will need a feeling of reassurance that they can count on the continuing co-operation, advice and assistance of the NSO, and that the statistical programs in question will not be cancelled or greatly modified without full and open advance consultation. The administrators will also want good program documentation and attentive service. It can take years to develop the sort of confidence and trust required.

24. Another possible reason for reluctance may be that the relevant statistical programs do not provide sufficient detail for purposes of the administrative task. For example, the government program may need information for local communities, while the available surveys have insufficient sample size to support statistics at that level. Even in cases where sample sizes are large, or where the statistician is able to produce exhaustive breakdowns by taking advantage of comprehensive administrative data from tax sources, confidentiality restrictions may prevent the statistical office from providing information at the desired level of detail.

25. The confidentiality issue has been a challenging one in PIPES, since the small size of several of Canada's provincial and territorial economies means that much of the statistical information being produced cannot be publicly released. In the case of the HST revenue allocation formula, steps have been taken to cope with the problem. The formula itself was designed intentionally to use publicly available statistics to the greatest possible extent. Since there are still a few cases where confidentiality restrictions do pose a problem, Statistics Canada officials have offered to calculate the results of the formula on behalf of the four governments, according to their specifications. In addition, each of the three provinces has a small statistical group of its own and Canada's *Statistics Act* permits specially designated officials from those agencies (but no other federal or provincial officials) to share some of Statistics Canada's confidential data, under strict conditions.

26. Undoubtedly another reluctance factor is the possibility of misalignment of statistical concepts with administrative requirements. For example, business surveys are typically centred on statistical enterprises and establishments, whereas government programs may apply to other units such as licensees, other regulated entities, or corporations. Reconciling between different units can be quite troublesome. As another example, the data collected on business survey questionnaires are usually aimed, in part if not entirely, at the needs of the System of National Accounts. However, SNA concepts may not fit well with the administrative needs of particular government programs. Statistics Canada has never considered modifying the concepts of provincial economic accounting in order to facilitate administrative uses, although the agency does try to provide additional detail where required. PIPES is a rather unique case in this regard, since the project was launched specifically to meet the needs of a new government program and those needs were customized having in mind what types of information the statistical system could most effectively provide. The more common cases are probably those where the program requirement arises long after the relevant statistical programs have been designed and implemented, and there is less scope to adapt the requirements of the government program to what the

statistical system can provide.

27. Timeliness can be another important factor. Government programs often need supporting data 'in real time' whereas the collection, processing and release of official statistics sometimes takes years to complete. In the HST example, the participating governments were willing to work with partial information and interim projections pending the release of final statistics by Statistics Canada almost four years after the fact. Indeed, the original PIPES proposal included the development of some quarterly as well as annual information, but the client decided that annual information, despite the long lags associated with it, was adequate. Today, with the benefit of a few years' experience, the timeliness factor is a growing concern.

28. Closely associated with timeliness is the revisions issue. For some government programs, revisions are unacceptable and this can be a powerful factor inhibiting the use of official statistics for administrative purposes, especially if timeliness is another critical requirement. This is one reason why Canada and some other countries generally avoid revisions to the Consumer Price Index. The HST program accepts the inevitability of statistical revisions and copes with them by determining preliminary and updated revenue allocations in advance and making adjustment debits and credits when the final statistics eventually become available. However, large revisions, should they prove necessary at some point in the future, may imply significant, long-after-the-fact reallocations of HST revenue among the four governments. That outcome would surely be unpalatable to the governments involved.

29. So it is evident there are many reasons for the public program manager to think carefully before adopting official statistics for administrative purposes. If they are to do the job effectively, the statistics must be perceived as sufficiently accurate, timely and detailed. Underlying statistical concepts and definitions must line up well against those required for the program. The administrators must have confidence that their statistician colleagues will provide impartial, dependable and responsive service and will be unlikely to revise the numbers too frequently or to a very considerable extent. And it may be necessary as well to resolve problems arising from the requirement to keep information about individual households or businesses strictly confidential.

IV. THE STATISTICIAN'S PERSPECTIVE

30. The previous section addressed the potential benefits to public program managers and questions of concern they may have with regard to the use of official statistics for administrative purposes. This section turns the issue around and explores it from the perspective of the NSO.

31. To be relevant and successful, statistical agencies must produce information that meets the needs of their clients. In this light, the ongoing use of official statistics in program administration must generally be seen as a highly favourable outcome.

32. A major data development project like PIPES, motivated by government desire to improve official statistics so they can be used for administrative purposes, can have an enormous beneficial impact on a national statistical system. There are scores of potential gains in such a mega-project and

they are in many respects fairly obvious. In the course of implementing the statistical enhancements necessitated by the HST revenue allocation formula, PIPES has also brought accompanying benefits to the statistical system as a whole. The project has afforded Statistics Canada an opportunity to expand, redevelop and modernize its business and household statistics programs and its system of provincial economic accounts in a manner and to an extent that certainly would not have been possible otherwise.

33. A striking example is the effect on the business register. The advantages that accrue from harmonizing business surveys around a single register have been widely recognized internationally for a great many years, but it had proven exceedingly difficult and costly to bring the change fully into effect in Canada. Under PIPES, the major surveys have been moved onto the register and the quality of the central frame itself has been very substantially upgraded. Before PIPES, the register covered fewer than 1 million employer businesses and was updated using payroll remittance records. Today the register holds information on an additional 1 million non-employer enterprises and is updated from a broader array of administrative data coming from the Canada Customs and Revenue Agency's "business number" system, the national Goods and Services Tax and the Corporate Income Tax. Only the very smallest companies are omitted. As a result, the register is a much more effective tool, particularly for surveys of industries, notably in construction and the services sector, that are dominated by firms of moderate size. The register's industrial classification codes have been greatly improved and work is now under way to upgrade the procedures and systems, both automated and manual, that maintain up-to-date classifications. With more than 70 surveys now working directly off the register, a large and continuous volume of survey feedback helps keep the database current. Increased resources are being devoted to maintaining the structural profiles of the large enterprises, to improving the linkage information used to relate data from different administrative and survey sources, and to gauging the relative sizes of businesses for sample stratification purposes. Today's business register is a vastly improved and more effective instrument as a result of PIPES.

34. Another fine example is the impact of PIPES on the range of information produced by Statistics Canada. The agency now generates statistics for many parts of the economy that were largely passed over by the statistical system in the past. Moreover, survey questionnaires have been modified to collect additional information, notably purchased services inputs, commodity outputs, inter-provincial trade flows and class of customer information, and the greater use of administrative data is permitting more geographical, industrial and size detail to be generated.

35. Nevertheless, a few unfavourable consequences also should be recognized. One of these is an increased risk the statistical office will be subject to damaging, unfair and politically motivated attacks as a result of its involvement in government program administration. The regular receipt of constructive feedback from users of statistics, of course, is an important and essential feature of a healthy statistical system and that is not the issue here. But destructive, self-serving criticism by users can be very damaging. The statistics produced as a result of PIPES are being used in a formula to allocate large sums of money among four governments. Since any sampling and estimation methodology has weaknesses and statistical errors are inevitable, the revenue allocation system depends upon the willingness of the participants to accept a reasonable degree of imprecision. So far, the HST revenue allocation process has been characterized by good faith on all sides and is working quite well. However,

if in future the revenue allocations turn sharply against one of the member governments, the temptation will be there to try to shift the blame to the NSO. This problem has potentially broad and general applicability. The more official statistics are used to help arbitrate difficult issues, the more they will be subject to controversy. An increased risk of such attacks is the price an NSO must pay to be relevant and ultimately its only real defence is a rock-solid reputation of professionalism and impartiality.

36. Another negative consequence is the possibility that statistical concepts, classification systems and other core aspects of the statistical system may become distorted as a result of the increased focus on administrative users' needs. In principle, concepts and classification systems should strike a balance among the interests of the full range of users of statistics. They must take into account a wide range of criteria such as simplicity, relevance, currency, historical continuity and international comparability. If the needs of a key government client come to dominate the NSO's attention, the statistical system could become unbalanced, to the possible detriment of other users including the public at large. There might also be a tendency for statistical concepts to ossify as a result of their use in government program administration, despite a broader need for these concepts to evolve in the face of changing national and international circumstances. In the HST example this has not yet been a problem, although it is conceivable it might be in future.

37. Efforts by the statistician to meet the requirements of the program administrator may also compound the difficulty of managing survey response burden. Broader survey coverage, larger sample sizes and/or longer, more complex questionnaires attributable to the NSO's attempt to meet the needs of public programs may raise the ire of respondents. It might well be true that the associated public programs have dramatically lower form-filling requirements themselves, compared to what would have been the case if official statistics had not been used, but it may be difficult to make the connection in the typical survey respondent's mind, especially if the public program is new and the net reduction in burden is hypothetical. In the extreme, if the respondent reaction is strong enough the NSO may find its survey response rates decreasing and its full range of statistical programs threatened.

38. This potential problem has been given close attention in PIPES. Great efforts are being made to meet the project objectives by using administrative data sources as much as possible, rather than surveys. A variety of respondent relations initiatives have been undertaken to communicate and explain Statistics Canada's motivations and actions, and to learn from and reply to feedback from businesses. The large, critical business respondents are being given customized treatment to make their survey response task as easy as possible, while very small businesses are being exempted from most surveys.

39. Yet another adverse effect that might result from the greater use of official statistics for public program administration is the erosion of business confidence in the NSO's willingness to protect the confidentiality of its information. The distinction between the regulatory, administrative or other agency that uses the statistics and the statistical office that collects the data may become blurred. This has not been a significant issue in the HST example, since the revenue allocation formula uses aggregate provincial economic accounts statistics. But it could be more of a problem in other situations.

40. Canada's *Statistics Act* permits Statistics Canada, under certain very restrictive conditions, to

share records for individual businesses with provincial government statistical agencies so long as they have similar Statistics Acts, in particular a legal authority to carry out *compulsory* surveys and also a legal requirement to protect the confidentiality of identifiable responses. The intent is to reduce burden by avoiding duplicate survey collections while preventing deterioration in the protection of confidentiality, but this can easily be misunderstood. The problem, in essence, is one of perception and communication. The NSO must devote substantial ongoing effort to explain itself and to address respondent concerns openly and directly.

41. Finally, the use of official statistics in government program administration might, in some circumstances, lead to instability within the statistical agency itself. This could happen, for example, if a stream of major changes affected some of the programs being supported, and these changes in turn led to large fluctuations in the character and scope of demands placed on the NSO and associated funding. In the case of PIPES, it has taken Statistics Canada four years to fully attain the project objectives which, as noted, entail a 10% increase in the agency's size. While the rapid pace of change has been exciting for staff and numerous innovations and enhancements to the statistical program have taken place, the activity has greatly taxed the agency's capacity. The government's present plan is that the program improvements resulting from PIPES will be funded on an ongoing basis, but if that plan were to change the implications for the agency could be quite dislocating.

42. In sum, there are a number of reasons why the national statistician, like the program administrator, might have reservations about the expanded use of official statistics in public administration. To recap, these include added risk of unfair, politically-motivated attacks on the NSO, the potential for distortion in statistical concepts, classifications and program priorities, increased difficulty in the management of respondent burden, a possible decrease in respondent confidence about the statistical agency's determination to protect the confidentiality of its information, and potentially greater instability in the size and program structure of the NSO.

V. SUMMARY AND CONCLUSIONS

43. Governments all over the world draw upon official statistics, produced by their national statistical agencies, for use in the administration of important public programs. Whether to determine socio-economic program parameters by region, to determine national contributions to international organizations, to administer airports, to establish quota or subsidy levels in international trading agreements or as in the HST example cited extensively in this paper, to share tax revenues equitably in overlapping jurisdictions, these uses are typically among the most important in the mandate of an NSO.

44. For the program administrator, the option of using official statistics may be attractive as a means of cutting costs, reducing compliance burden and generally improving the effectiveness of program operations. On the other hand, program administrators may in some instances prefer to collect their own figures for administration purposes, particularly if the required data are very detailed, or if the NSO is perceived as providing poor or undependable service.

45. For the national statistician, public program administrators are very important clients. Their use of

the official statistics strengthens the *raison d'être* of the NSO and can occasionally lead to the initiation of new programs and the expansion and improvement of existing ones. In Canada's experience, these advantages greatly outweigh any disadvantages that may exist in the form of distortions or restrictions affecting other users of the statistical system. Nevertheless, there are some reasons for wariness.

46. The specific example referred to extensively in this paper is an important, albeit rather special case. Although final judgement must await the further passage of time, at this stage about three and a half years after the HST and PIPES began, the benefits appear to be outweighing any disadvantages for both the project sponsors and the Canadian statistical system.

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