ABS Profiling Directions

Introduction

The Australian Bureau of Statistics (ABS) is currently undertaking a five year organisational transformation program which aims to reduce statistical risk through improving the efficiency and effectiveness of its statistical production processes and supporting systems. As a result, one of the benefits to be realised by this transformation program will be the reduction of operational costs at the end of this timeframe. The ABS profiling work program is currently being reviewed in the context of the whole of organisation transformation, with common goals of reducing costs and statistical risk. For many years ABS has made a significant investment in its profiling program as it underpins the economic statistics survey program.

In 2017, three profiling trials are being undertaken to explore how savings in the profiling work program can be achieved through smarter ways of identifying businesses that require profiling and to test the synergies that could be achieved if teams outside the Business Register Unit undertake profiling. All three trials will inform the future ABS operating model.

Trial 1 is a reduction in the initial annual profiling selections, with a greater emphasis on triggering units for profiling when businesses are identified as undergoing some change. Trial 2 involves moving the less complex profiling work to the ABS Data Acquisition and Provider Management (DAPM) area to explore broader synergies with the overall ABS provider management and data delivery approach. Trial 3, which is still in its early stages, builds on a 2016 trial which explored integrating profiling and annual economic survey editing functions. This year will see Trial 3 expanded to also investigate possible synergies with the quarterly economic survey program.

The first section of this paper provides an overview of the ABS profiling program. The second and third sections outline the purpose and approach of profiling Trials 1 and 2 respectively. The fourth section outlines the quality framework that describes what an effective profiling program looks like and how this framework will be used to measure the success of the profiling trials, as well as to identify any key challenges and next steps to establish the future profiling program for the ABS.

ABS profiling program: an overview

1. Statistical business registers are foundational infrastructure in the collection and production of economic statistics and as such it is critical that they are of high quality. The ABS Business Register is populated and updated through the use of administrative data sources and enhanced by profiling activity. The ABS Business Register has a two population model. Large and/or complex businesses are captured in the profiled population via direct contact with the business. The remaining units (the non-profiled population) are simple structures that can be updated primarily through the use of administrative data from the Australian Taxation Office (ATO). Both populations are regularly updated as part of the ongoing ABS Business Register maintenance program.

2. Profiling has been used by the ABS since the late 1980s to ensure the ABS Business Register accurately reflects the structure of units undertaking major economic activity in the Australian economy, while simultaneously meeting statistical requirements and managing provider burden. Profiling is a method for analysing the legal, operational and accounting structures of large Enterprise Groups in order to

build the most effective statistical structure. These structures are comprised of statistical units that will support the collection of high quality data by ABS economic collections.

3. The ABS profiling program records the structure and activities of Enterprise Groups according to statistical standards and classifications, through ongoing monitoring of relevant administrative data and other sources such as media announcements on major projects, mergers and acquisitions. ABS profiling achieves strong outcomes by building the trust and cooperation of providers as well as representing the needs of ABS stakeholders to ensure user requirements are satisfied.

4. Profilers have a strong understanding of statistical and economic concepts and the ability to effectively liaise with data providers. Profilers are allocated to industry teams that are established to develop expertise within particular industries. Ongoing training and quality assurance processes are also employed to ensure data quality is maintained. Regular audits and validations are conducted to identify any key issues with data or areas for investigation. Management information is maintained on a weekly basis to monitor progress with profiling allocations across industries and for each profiler.

5. There are two methods used by ABS for profiling:

(i)   Personal profiling: The largest and most complex businesses are profiled using the 'personal profile method' requiring the profiler to interview the data provider, either face to face or via the phone; and

(ii)   Mail profiling: where the business is still significant enough to be profiled, however it is less complex, it is profiled using the Update of Business Structure (UBS) survey form. Profilers then conduct any necessary follow up to ensure that the information received is correct and reflective of how the business has changed since it was last profiled. Most businesses require a follow up call after the profiler receives the survey form, to ensure an accurate and complete profile has been established.

6. Profiling is an ongoing activity which continues throughout the year, to ensure changes in the real world are captured on the ABS Business Register as soon as possible. Regardless of the ongoing nature of profiling, for work program management purposes a cycle start and end date are allocated to support the despatch and follow up of survey forms and allow for easier work allocation across profilers.

7. Each year the ABS profiling cycle commences in late February and concludes in November. At the beginning of the cycle the Update of Business Structure (UBS) survey form is despatched for all mail profiles. An approved Microsoft excel version of the paper form is also available to support personal profiling and is being used in the place of a web based form, until one becomes available.

8. Data collected during ABS profiling includes Legal Entity information (currently this is the Australian Business Number (ABN)) and Management Unit information with the collected information including:

   o   Name
   o   Identification number
   o   Main activity
   o   Gross income
   o   Employment
   o   Frequency with which key data items are available (i.e. quarterly, monthly, etc…)
   o   Availability of payroll information
   o   Financial year end (eg. 30 June, calendar year)
   o   Contact information
   o   Coverage information relating to activity in trade in services, international investment and agriculture.

9. Using the above information, profilers work together with the business to create and maintain a statistical structure that represents the business' real world activities as well as meets ABS statistical requirements. The ABS Economic Units Model (see Attachment 1) is used to do this. The statistical unit is the Type of Activity Unit (TAU) which is equivalent to the Kind of Activity Unit (KAU) in the

System of National Accounts (SNA). The main task is the identification of units with homogenous production activity and subsequently the creation of statistical units for each of these activities, where possible. Profilers aim to meet end user needs by creating these units at the finest industry level possible, as long as sufficient accounts are maintained for this level of activity breakdown by the business, to ensure ABS economic survey requirements can be met. In the future, profilers will also need to profile institutional units. A new institutional unit and frame is being formulated as part of the transformation work of the ABS. As a rule of thumb, data requirements for TAU formation equate to a minimum of 3 out of the following 5 data items available at least quarterly:

- ✓ Total capital expenditure;
- ✓ Income from the sale of goods and services;
- ✓ Wages and salaries;
- ✓ Total inventories; and,
- ✓ Total purchases and other expenses.

10. Once the profiling data is collected, it is entered into the ABS Business Register database, known as BRIMS (Business Register Integrated Management System). Each quarter a Common Frame is extracted from BRIMS forming the basis for the selection of units in ABS economic surveys.

11. Throughout the profiling cycle there are a number of activities occurring simultaneously which may also trigger the need to profile or re-profile an Enterprise Group. These include identified 'new-ons' (that is potential new groups triggered through the review of administrative data), sample frame and maintenance procedure (SFMP) queries (these queries are notifications of change initiated by a provider or a survey area), 'drops' (using size benchmarks to determine which businesses can be moved to the non-profiled population), and 'floating ABNs' (a quarterly process identifying units in the non-profiled population likely to belong to existing profiled groups). Real world events such as privatisations, mergers, acquisitions, takeovers and major projects are also monitored by profilers through the ongoing maintenance of separate registers, and statistical structures are updated as required.

12. The benefits of profiling are that it allows the ABS Business Register to be responsive to changes in the economy in order to support the broader ABS economic statistics work program. Profiling builds relationships with data providers, it produces better response rates (as a result of data providers better understanding the purpose of data collection), it results in more accurate data (as legal entity administrative data is not always available or accurate) and it reduces provider load. The trials being conducted in 2017 to explore further options for efficiencies and synergies are discussed in the following sections.

Trial 1: Moving to a more triggers based approach to profiling

13. There are two facets to Trial 1. The first is reducing the profiling selections that happen at the beginning of a profiling cycle and the second is to introduce a more formal triggers strategy, which will highlight Enterprise Groups that are showing signs of change. This may require profiling or re-profiling within any given cycle. The opportunity to trial a reduced population allows us to explore the optimum level of profiling, including whether ABS can further reduce profiling or needs to consider increasing profiling activity. Regardless of the final level of profiling undertaken by ABS, it will result in a better return on investment for the organisation from the profiling work program. This refined approach will ensure the groups being profiled are the highest priority ones, either due to significance, complexity, provider relations issues, reporting difficulties or signs of change and, as a result, will ensure a more targeted approach to profiling selections.

14. Previously the ABS Business Register Unit profiled all groups within the profiled population within a 4 year cycle. Therefore if a group was on a 3 yearly profiling cycle, it would come up for profiling every 3 years, regardless of whether there had been any changes or not. The triggers based approach is moving away from this fixed cycle approach and using key variables to monitor change and flag groups for investigation and potential profiling.

15. While groups could have been flagged for earlier profiling in the past, the triggers process is now expanding and becoming more formalised. Different processes that acted as past triggers are now being integrated into the one process, which will increase the efficiency and effectiveness of the end to end process, as well as support more informed decision making on profiling selections. New triggers are also being investigated and progressively included into the process.

How were profiling selections reduced?

16. Through Trial 1, the decision making process around how to reduce the initial profiling selections for a cycle, to allow for subsequent triggers and a more targeted profiling work program, centred around a combination of significance analysis, industry level knowledge and ABS economic collection feedback, to ensure ABS Business Register users would remain satisfied with the results. In addition to this, and to support the operationalisation of the process, significance benchmarks and priority rankings were allocated to each Enterprise Group, based on identified tolerances for key indicators such as employment, income and industry value added (IVA).

17. Further consideration was then given to including industries which experience very little change over time into the "triggers only" portion of the profiled population. Guidelines are still being developed regarding how these units in typically low change industries will be kept updated, if they are not triggered for profiling over a certain period of time.

18. The profiling selections were reduced from 1,620 Enterprise Groups in 2016 to 909 in 2017 (reduction of 711 Enterprise Groups). The BRU also receive ongoing feedback from survey areas, highlighting where information on the ABS Business Register may need to be updated or a group investigated. In 2016 there were 1,284 of these queries, with approximately 70% involving updates to the ABS Business Register (eg. contact or address change, unit no longer exists), and the remaining 30% requiring more substantive investigation or re-profiling. With the reduction in the number of Enterprise Groups being profiled in 2017 it is expected that the number of sample frame and maintenance queries will increase over time and become one of the key profiling triggers.

What are profiling triggers?

19. Profiling triggers are a set of procedures used to identify businesses that should be considered for profiling because they are potentially undergoing change. There is no one size fits all approach to triggers, as every business manages a significant event in different ways. Consequently, it is important to use a combined approach to triggering groups for profiling.

20. The ABS is currently trialling a triggers approach with three streams: data confrontation; direct feedback; and environmental scanning.

(i) **Data confrontation triggers:** These triggers interrogate administrative data sources (such as data from ABS economic surveys and data sets from other government departments that the ABS has access to), to identify groups that may be in the process of undergoing significant change.

(ii) **Direct feedback triggers:** These triggers utilise intelligence provided to profilers from a variety of sources (such as areas of the ABS undertaking editing, data providers and industry groups) to inform real-time updates to the ABS Business Register.

(iii) **Environmental scanning:** These triggers utilise publications from other government registers (such as Department of Industry, Innovation and Science's *Resources and Energy Quarterly*), web intelligence and industry engagement as triggers for potential profiling.

Trial 2: Decentralising the profiling work program

21. In March 2017, Trial 2 commenced to test how effective it was to have less complex profiling undertaken as part of the data delivery function of the ABS (the Data Acquisition and Provider Management (DAPM) team), instead of all profiling being undertaken by the Business Register Unit.

This is in line with a key ABS Transformation goal, to better align work program functions across the organisation, with the ultimate aim to take advantage of work program synergies to achieve organisational efficiencies.

22. In 2017, 640 Enterprise Groups are being profiled by the new DAPM profiling team. A team of 5 staff has been established, with the skills of this team including experience in intensive follow-up and sample frame and maintenance procedures. This team also have responsibilities for other collections as well as profiling. The DAPM team is being exposed to the broader profiling work program, including additional profiling allocations resulting from the triggers process.

23. Under the direction of this trial, the longer term aim is to have the Business Register Unit retain governance and leadership of the profiling work program, while profiling as an activity is spread across different areas of the ABS in order, to take advantage of work program synergies. Trial 3 (which is still in its early stages), will test more complex profiling being integrated into or undertaken in conjunction with both annual and sub-annual economic survey editing functions. To ensure quality, coherence, effective communication and knowledge management is maintained going forward under this direction, a central profiling governance and leadership team will be set-up within the Business Register Unit, to manage the decentralised profiling work program of the future.

24. The success of Trial 2 is to be ascertained based on the following:

(i) **Profiling quantity**: All units allocated are profiled within the agreed timeframes;

(ii) **Profiling quality**: All units allocated are profiled to the agreed quality parameters as set out in the trial quality assurance strategy;

(iii) **Statistical impacts:** Adverse impacts of profiling decisions on ABS published estimates are minimised, as measured through an impact measurement plan;

(iv) **Business impacts**: Efficiencies are gained through synergies between the branches involved in profiling work to reduce the number of staff required to undertake profiling and profiling related activities, while maintaining quality; and

(v) **Capability development:** Staff capability is developed through knowledge transfer across the organisation.

25. A traffic light quality assurance system was set up with appropriate thresholds for both quantity and quality indicators. A phased approach to achieving levels of quality was adopted, whereby more errors and less volume of work were expected the first month as compared to the third month of the trial, to give new profilers time to gain profiling knowledge. The Business Register Unit's experienced profiling team provide ongoing support to the trial team *(further details on the quality assurance strategy can be found in paragraphs 27-29 of this paper)*.

Quality considerations

26. Undertaking the aforementioned profiling trials has further highlighted that quality and not quantity is the key to maintaining a Business Register that is fit for purpose. The table below outlines key indicators of a successful profiling program using the ABS seven dimensions of quality and the broad profiling outcomes.

Table 1: Indicators of a successful profiling program

Quality dimension	Profiling outcomes		
	Coherence in statistical scoping of collections	**High quality statistical outputs**	**Strong relationships between ABS and data providers**
Institutional Environment	- Profiling governance for updating the ABS Business Register is effective - consistent application of the Economic Units Model and other profiling related classifications	- Profiling governance for the use of the ABS Business Register is effective	- Professional relationships with data providers are maintained - Profiling data remains secure and confidential in accordance with relevant legislation
Relevance	- Profiler value added information on changes to businesses assists coherence - Survey frames enable fit-for-purpose coverage of the relevant business population	- Areas of the economy undergoing significant change are targeted for profiling (triggers process) - Profiling reports provide sufficient information on the reasons for all significant changes to the structure and related data of a business	- Minimises respondent burden by creating an optimal statistical structure that also reflects the real world as closely as possible - Contact details are updated to ensure that surveys go to the appropriate contact
Timeliness	- Real world events are reflected on survey frames via timely profiling updates	- Real time updates are provided to survey areas - Consistent adoption of profiling changes across annual and sub-annual surveys	- Timely responses to provider queries and requests - Data queries are resolved with providers in a timely manner - Providers are given adequate timeframes to respond to data requests
Accuracy	- Group structures accurately reflect real world business activity and conform to the Economic Units Model - Key indicators (e.g. sizing variables, classifications, etc..) are reported correctly on the ABS Business Register	- Information is provided to assist statistical back-casting as a result of revisions to unit structures or classifications	- Data providers report data against the agreed statistical structure - Successful collection of information to enable statistical back-casting - Provider contact details are up-to-date and reflect the best contacts for survey areas
Coherence	- Statistical units reflect homogeneity of industry and sector classification - Profiling outcomes meet the needs of all statistical collections (reducing the use of bespoke units)	- Classification guidelines are applied consistently and coherently - Profiler investigations and monitoring of the economy, including major mergers, acquisitions, takeovers and capital projects, provide intelligence on key events to assist coherence and apply changes promptly to the business register - consistent adoption of profiling changes across annual and sub-annual surveys	- There is a shared understanding of ABS data requirements between the ABS and data providers
Interpretability	- Comments provided on all ABS systems are clear	- Profiling reports for each group enable survey areas to understand changes to groups - Provision of timely training to survey areas on relevant profiling concepts, classifications, systems	- Profiling forms provide sufficient information to enable providers to report accurate information and understand data requirements and obligations
Accessibility	- Data on the ABS Business Register can be accessed by those with a need to know	- Profilers are available to answer survey area queries on profiling information - Profiling reports are available to explain changes to groups	- Appropriate contacts are contacted - Providers have access to support through profilers and the ABS Provider Contact Unit (PCU)

27. Using the above indicators as a base, key measures of success were developed for both Trials 1 and 2, These are summarised in the table below.

Table 2: Measures of success

	1. Statistical impact	2. Efficiency	3. Effectiveness	4. Impact on providers
What does success of Trials 1 and 2 look like?	Reduction in profiling selections (a) No significant adverse impact on statistical outputs because businesses have not been profiled (accuracy, coherence, relevance, timeliness) Triggers methodology (b) Changes to business structures are reflected in statistical outputs in a more timely manner (accuracy, coherence, relevance, timeliness, institutional environment) Decentralisation of profiling (c) Profiling continues to support delivery of high quality statistical outputs (accuracy, coherence, relevance, timeliness, institutional framework)	Reduction in profiling selections (a) Reduction in total profiling hours Triggers methodology (b) Real time profiling increases the focus on areas of change in the economy Decentralisation of profiling (c) Profiling is still delivered to the same quality and timeframes (d) Synergies with other ABS functions are achieved e.g. further integrating Sample Frame and Maintenance Procedures (SFMP) with profiling	Reduction in profiling selections (a) all groups are still well represented on the ABS Business Register through profiling activity, including those in low change industries Decentralisation of profiling (b) The data delivery area delivers the less complex profiling to the same quality and timeframes as BRU (c) Staff capability is developed through knowledge transfer across ABS (d) Coherence across the profiling work program is maintained	Reduction in profiling selections (a) Reduced provider load (b) The data delivery area undertaking both profiling and SFMP means the ability to handle provider queries more holistically Triggers methodology (c) Contact with providers has a greater focus on areas where change has been identified Decentralisation of profiling (d) Provider relations are maintained by the data delivery area to the same level as the Business Register Unit.

Quality framework

28. A comprehensive quality framework was set up for the trials, largely based around a traffic light approach to meeting profiling quality targets, which included the following:

a) Intensive formal (classroom) training

b) Ongoing mentoring and support (both face-to-face and virtual)

c) Ongoing quality checks, which included:

   i. automated audit and validation checks

   ii. manual quality checks (of all groups initially, then phased down to 1 in 3, now 1 in 5 as new profiler experience builds)

   iii. as manual quality checks by experienced profilers reduce, the new profiling team take up self and peer quality assurance to ensure quality levels are maintained and quality assurance expertise is built up within the new team

   iv. development and use of quality checklists for both experienced and new profilers to use

d) Weekly management information is also a useful element of the quality framework, particularly around:

   i. percentage of forms returned that have been completed

   ii. percentage of groups with/without errors

   iii. type and frequency of errors occurring (to inform further training needs)

   iv. impact on other profiling related processes e.g. are relatively more queries being raised by survey areas for the groups undertaken by new profilers?

e) The quality framework also includes communication and escalation strategies to assist profiling line managers in running the trials and managing the work program.

f) The use of the Business Register Unit Manuals, a knowledge documentation depository, which is also under review during the trials to ensure continued relevance and coherence across the profiling work program.

Key trial challenges

29. A key challenge across all the profiling trials is that measuring the impacts of the profiling changes on ABS statistics is difficult. The trial teams have worked closely with methodologists to undertake a comprehensive initial impact assessment with proposed case studies to measure aspects of the impact on different areas of the ABS Business Register. The complete downstream impact on survey estimates and National Accounts cannot be adequately measured through the trials in the short term.

30. A further challenge is building solid profiling expertise more quickly across new profilers and profiling teams, as turnover is likely to be higher under a decentralised model. Training and auditing profiles is resource intensive and has further highlighted the importance of an effective quality management strategy with supporting governance and a strong succession planning element.
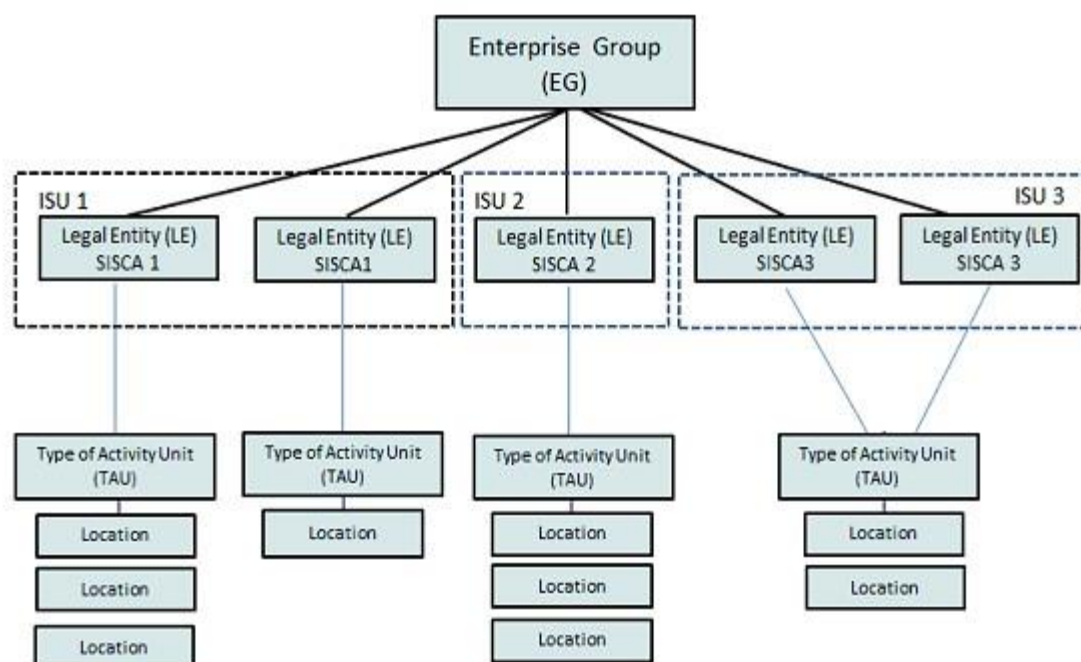
Next steps for the profiling trials

31. Both Trials 1 and 2 mentioned above are currently underway and involve ongoing evaluation. Reviews and assessments currently indicate that both trials have promise and will continue into 2018 if formally approved. Trial 3, which is still in its early stages, builds on the 2016 trial which explored integrating profiling and annual economic survey editing functions. This year will see this trial

expanded to explore sub-annual economic survey synergies as well. All three trials will inform the future ABS operating model.

32. Overall the results of the Trial 2 mid cycle review are positive. The main learning so far has been the importance of communication across the teams, including the quality strategy, and ensuring that the quality assurance is appropriately resourced and actioned.

33. Future considerations for a decentralised profiling program also include the creation and implementation of a strong profiling governance model, including succession planning, escalation, knowledge management and quality assurance strategies. The vision is for these models and strategies to be supported by more efficient statistical production systems with strong management information capabilities.

Attachment 1: ABS Economic Units Model

The ABS Economic Units Model is used to determine the structure of businesses is consistent with Australia's Corporations Law and with the definition of institutional units outlined in the 2008 System of National Accounts (SNA). The model consists of: the Enterprise Group (EG), one or more Legal Entities (LE), one or more Type of Activity units (TAU), and one or more locations.

Note: the presentation of the ISU in this diagram has not been finalised but is indicative.

The **Enterprise Group (EG)** is an institutional unit covering all the operations within Australia's economic territory of legal entities under common control. Control is defined in Corporations legislation. Majority ownership is not required for control to be exercised.

The **Legal Entity (LE)** statistical unit is defined as a unit covering all the operations in Australia of an entity which possesses some or all of the rights and obligations of individual persons or corporations, or which behaves as such in respect of those matters of concern for economic statistics. Examples of legal entities include companies, partnerships, trusts, sole (business) proprietorships, government departments and statutory authorities. Legal entities are institutional units.

The **Institutional Sector Unit (ISU)** is a derived statistical unit. It includes all legal entities within an Enterprise Group that are classified to the same institutional sector class.

The **Type of Activity Unit (TAU)** is a producing unit comprising one or more legal entities, sub-entities or branches of a legal entity that can report productive and employment activities via a minimum set of data items.

A **Location** is a single, unbroken physical area, occupied by an organisation, at which or from which, the organisation is engaged in productive activity on a relatively permanent basis, or at which the organisation is undertaking capital expenditure with the intention of commencing productive activity on a relatively permanent basis at some time in the future.