Senate Economics Legislation Committee ANSWERS TO QUESTIONS ON NOTICE

Treasury Portfolio

Budget Estimates 2014 3 June to 5 June 2014

Department/ Agency: ABS

Question: BET 1

Topic: International Unemployment **Reference:** Hansard pg. 95, 3 June 2014

Senator: Bishop

Question:

Senator MARK BISHOP: You can take this on notice. Could you provide us with whether official unemployment numbers in other countries are subject to such significant revisions, if you are aware of it, from our major trading partners? I do not expect you to have that knowledge off the top of your head.

Mr Harper: We could certainly provide some information on notice. We are not talking about revisions here. We are talking about volatility in month-to-month movements. We, for the most part, do not revise the original labour force estimates. But seasonally adjusted estimates and trend estimates get revised as additional information becomes more available. But we can provide information about that on notice. One feature of the Australian Labour Force Survey is that it is quite a large survey. It has, by international standards, a very high response rate. So our survey stacks up pretty well when we compare it to what we see in comparable countries overseas

Answer:

1. All of our major trade partners¹, through the use of sample surveys and in the majority of cases, rolling or rotating samples, experience error and normal variation in their official employment statistics. This is unanimously expressed through the use of standard error, which is used to create the 95% confidence interval, the range into which the real value is 95% certain to fall. This is attached to estimates and used as a measure of volatility.

The Australian Bureau of Statistics has always been highly transparent about any and all potential sources of error in our estimates. We believe that our Labour Force Survey estimates are of high quality, are internationally respected, are consistently reliable, and are fit for purpose.

¹ Japan, Korea (Republic of), New Zealand, Singapore, the United Kingdom, and the United States. Data for China was unavailable.

Further detail

To address this question on notice, we have sought to provide a broad overview of the labour force collections of our major trading partners. These include, in alphabetical order, China, Japan, Korea (Republic of), New Zealand, Singapore, the United Kingdom and the United States.

The below tables provide basic information about the title of each survey, the agency responsible for collection, the objectives and the official uses of each survey; followed by the frequency, size, scope, sampling and collection methodology; and finally the basic information about the estimation process, including benchmarking to the larger population, measures and extent of error, and the methods by which revision of estimates can take place.

Information has been provided where publically accessible. Select information for some collections is not available publically and therefore is not included.

Australia

	Australia				
		Country:	Australia		
	Statistical agency responsible:		Australian Bureau of Statistics		
	Title:		Monthly Population Survey (This comprises the Labour Force Survey, plus the labour supplementary surveys which are run in conjunction with the Labour Force Survey usually on an annual basis.)		
Survey	Objectives:		 The LFS is designed to provide timely information on the labour market activity of the usually resident civilian population aged 15 years and over. The supplementary surveys provide additional information about particular sub-groups of the population or issues of interest. 		
	Produces official estimates for:		employment: yesunemployment: yesearnings: nohours of work: yes		
		Frequency:	Monthly		
		Size:	29,000 dwellings (0.33% of population)		
	Basic details	Collection:	 Computer-assisted personal interview for first month Computer-assisted telephone interview for the rest On-line self-completion option available Interviewed every month for 8 months Participation compulsory 		
		Scope:	 Civilian population 15 years and over usually resident in Australia excluding foreign diplomatic and military personnel (and their families) 		
Methodology	Sample design:		 Sampling frame based on an area-based list of dwellings, partially base on Population Census Updated every 5 years Rolling sample, interviewed up to 8 times in 8 months Sample fully refreshed every 8 months (1/8 per month) Approximately 82% remain in sample for two consecutive surveys 		
		Benchmarking:	Benchmarked to ERP by Age, Sex and State/Territory of residence.		
	Accuracy and quality	Measures of error: Revision of estimates:	 Standard Error provided for sampling error This is used to construct 95% confidence intervals Relative Standard Error² Total unemployment rate: 2 % Total employment: 0.3 % Total unemployment: 2.5 % Original estimates are generally not revised. Seasonally adjusted and Trend estimates are revised slightly every month through the time series adjustment process. All estimates are rebased when the 		
		estimates:	time series adjustment process. All estimates are rebased when th ERP is revised after each census.		

² These RSEs are as last provided to the ILO. They may not be up to date and are for illustrative purposes only.

China

Country:			China
	Statistical agency responsible:		National Bureau of Statistics of China
Survey	Title:		Annual Sample Survey on Labour Force
Sur	Objectives:		N/A
ŕ	Produces official estimates for:		N/A
	Basic details	Frequency:	Yearly
		Size:	N/A
		Collection:	N/A
g		Scope:	Entire population
010,		эсорс.	• 16 years and over
000	Sample design:		N/A
Methodology		Benchmarking:	N/A
Σ	Accuracy and	Measures of	N/A
		error:	IV/A
	quality	Revision of estimates:	N/A

Japan

		Country:	Japan
	Statistical agency		Ministry of Internal Affairs and Communications
	responsible:		·
		Title:	Labour Force Survey
Survey		Objectives:	To elucidate the current state of employment and unemployment in the country every month.
Sur			- employment: yes
	Droduces of	official estimates	- unemployment: yes
	Troduces c	for:	- earnings: yes
		<i>joi.</i>	- hours of work: yes
	Frequency:		Monthly
		Size:	40,000 dwellings (0.1% of population)
		Collection:	Personal interviews at households.
	Basic		Entire population
	details		• 15 years and over
		Scope:	usually resident in Japan
			excluding foreign diplomatic and military personnel
			(and their families)
			Sampling frame based on Population Census
	Sample design:		Updated every 5 years
			Rolling sample, interviewed 4 times in 16 months
			(Enumeration districts, included for 4 months, out for
(bo ₎			8 months, in for 4 months. For the 4 month periods,
lop			half the ED is surveyed in first 2 months, and the other half in the second 2 months)
Methodology			Sample fully refreshed every 15 months
Me			Approximately 50% remaining in sample for two
			consecutive surveys
			Benchmarked to population estimates by Age, Sex and area
		Benchmarking:	of residence
			Standard Error provided for sampling error
			 This is used to construct 95% confidence
	Accuracy and quality	Measures of error:	intervals
			Relative Standard Error ³
			- Total employment: 0.1 %
			- Total unemployment: 0.8 %
			- Total economically active population: 0.1 %
		Revision of	Most data are seasonally adjusted.
		estimates:	most data die sedsondily dajusted.

³ These RSEs are as last provided to the ILO. They may not be up to date and are for illustrative purposes only.

Korea, Republic of (South)

Country:			Korea, Republic of (South)
Survey	Statistical agency responsible:		Bureau of Social Statistics, Employment Statistics Division
		Title:	Economically Active Population Survey
	Objectives:		The primary purpose is to collect up-to-date information on the economic status of the population and on changes in the structure of the labour force.
	Produces official estimates for:		employment: yesunemployment: yesearnings: nohours of work: yes
		Frequency:	Monthly
		Size:	32,000 households (0.2% of the population)
	Basic	Collection:	Personal interviews at households using a paper form.
	details	Scope:	 Entire population 15 years and over Excluding armed forces
Methodology	Sample design:		 Sampling frame based off population census Rolling sample, interviewed up to 36 times Sample fully refreshed every 36 months Approximately 97% remaining in sample for two consecutive surveys
tho		Benchmarking:	,
Met	Accuracy and quality	Measures of error:	 Standard Error provided for sampling error This is used to construct 95% confidence intervals Relative Standard Error⁴ Total unemployment rate: 3.2 % Total employment: 0.4 % Total unemployment: 3.2 % Total economically active population: 0.4 %
		Revision of estimates:	Most data are seasonally adjusted.

⁴ These RSEs are as last provided to the ILO. They may not be up to date and are for illustrative purposes only.

New Zealand

Country:			New Zealand
Survey	Statistical agency responsible:		Statistics New Zealand
		Title:	Household Labour Force Survey
	Objectives:		To produce each quarter a comprehensive range of statistics relating to the employed, the unemployed and those not in the labour force who comprise New Zealand's working age population.
	Produces official estimates for:		employment: yesunemployment: yesearnings: nohours of work: yes
		Frequency:	Quarterly (March, June, September and December)
		Size:	15,000 households (1% of the total population)
	Basic details	Collection:	 Computer-assisted personal interview and computer-assisted telephone interview Interviews conducted every 3 months for a total of 8 interviews Participation compulsory
		Scope:	Usually resident population present at interview15 years and over
Methodology	Sample design:		 Sample frame based off the population census Updated every 5 years Rolling sample, interviewed up to 8 times Sample fully refreshed every 24 months Approximately 87.5% remaining in sample for two consecutive surveys
Ž	Accuracy and quality	Benchmarking:	Estimates are benchmarked to Census counts by age, sex and whether a Māori person.
		Measures of error: Revision of	 Standard Error provided for sampling error This is used to construct 95% confidence intervals Relative Standard Error⁵ Total unemployment rate: 6.7 % Total employment: 1 % Total unemployment: 6 % Total economically active population: 0.9 %
		estimates:	Most data are seasonally adjusted.

⁵ These RSEs are as last provided to the ILO. They may not be up to date and are for illustrative purposes only.

Singapore

Country:			Singapore
	Statistical agency responsible:		Ministry of Manpower
		Title:	Labour Force Survey
Survey	Objectives:		To collect data on economic activities of the population, including detailed information on employment and unemployment, characteristics of the labour force and economically inactive persons.
	Produces official estimates for:		 employment: no⁶ unemployment: yes earnings: no hours of work: no
		Frequency:	Yearly (June)
	Basic	Size:	33,000 dwellings (3% of population)
		Collection:	Computer-assisted telephone interview
	details	Scope:	Usual residents of Singapore either present or temporarily absent excluding persons living in some special dwellings such as institutions, worksites or dormitories.
	Sample design:		Based off the National Database of Dwellings in Singapore.
og)		Benchmarking:	
Methodology	Accuracy and quality	Measures of error:	 Standard Error provided for sampling error This is used to construct 95% confidence intervals Relative Standard Error⁷ Total unemployment rate: 2.2 % Total employment: 0.3 % Total unemployment: 2.1 % Total economically active population: 0.3 %
		Revision of estimates:	Unemployment estimates are seasonally adjusted

⁶ Data on employment in Singapore is chiefly obtained through administrative records rather than surveys. See Labour Market, First Quarter 2014, p.A21 for further detail.

⁷ These RSEs are as last provided to the ILO. They may not be up to date and are for illustrative purposes only.

United Kingdom

Country:			United Kingdom
	Statistical agency responsible:		Social Surveys Division of the Office for National Statistics (ONS) in Great Britain and the Central Survey Unit in Northern Ireland.
		Title:	Labour Force Survey
Survey	Objectives:		The main purpose of the quarterly LFS is to provide information needed to develop, manage, evaluate and report on labour market policies. Its main strengths are that it provides a self-contained, integrated source of information about the Labour market activity (or inactivity) of the whole (household) population, based on a large sample size, and that it uses the internationally standard definitions of employment and unemployment recommended by the International Labour Organization (ILO).
	Produces official estimates for:		N/A
	Basic details	Frequency:	Continuous, weekly.
		Size:	53,000 households (0.1% of the population)
		Collection:	Face-to-face personal interview (paper and pencil) for the first interview, telephone interview paper and pencil) for the following
		Scope:	Entire population, excluding persons living in institutions.
ology	Sample design:		Based off an Address RegisterSample fully refreshed every 15 months
Methodology	Accuracy and quality	Benchmarking:	Estimates benchmarked to the <i>Business Register and Employment Survey</i>
N		Measures of error:	 Standard Error provided for sampling error This is used to construct 95% confidence intervals
		Revision of estimates:	 Most data are seasonally adjusted. More extensive annual adjustments may take place where there is a review of the seasonal adjustment process

United States

Country:			United States
	Statistical agency responsible:		U.S. Census Bureau
		Title:	Current Population Survey (CPS)
vey		Objectives:	Collect timely labour force information.
Survey	Produces official estimates for:		employment: yesunemployment: yesearnings: yeshours of work: yes
		Frequency:	Monthly
		Size:	60,000 dwellings (0.055% of the population)
	Basic	Collection:	Computer assisted personal interview
	details	Scope:	 Whole population 16 years and over Excluding armed forces, persons in institutions and homeless people
Methodology	Sample design:		 Master address file based on Decennial Census Continually updated Sample fully refreshed every 16 months Approximately 75% remaining in sample for two consecutive surveys
>		Benchmarking:	
	Accuracy and quality	Measures of error:	 Standard Error provided for sampling error This is used to construct 95% confidence intervals Relative Standard Error⁸ Total unemployment rate: 0.2 % Total employment: 0.1%⁹
		Revision of estimates:	Data are seasonally adjusted

 $^{^8}$ This RSE is as last provided to the ILO. It may not be up to date and is for illustrative purposes only. 9 Sourced from ABS Annual report rather than information provided to the ILO.

Glossary and abbreviations

Benchmark

O Benchmarks are a method of ensuring that the data from sample surveys (which have higher margins of error than a census) are weighted to reflect the overall population. This can be based on various sources, such as Census counts or Estimated Resident Population, and can use various benchmarks, such as certain age groups, sex, certain sub-populations, location of residence, or (often) a combination of the above. Estimates from labour force surveys are weighted so as to align to totals of these benchmarks and provide accurate estimates for these groups.

• ERP – Estimated Resident Population

- This is the best available estimate of the population. This is based on Census information, but incorporates other sources of data (such as migration, births or deaths) to estimate the population at a point in time. This is then often used to project and back-cast population estimates between these fixed points.
- ILO International Labour Organisation
- N/A Not available
 - This is used where information is either not applicable to the survey, or (more commonly) where it is not available in the public domain.
- RSE Relative Standard Error
 - The Relative Standard Error is obtained by expressing the Standard Error (SE) as a percentage of the estimate.
 - As per SE, two times the RSE percent either side of the estimate will give the 95% confidence interval.
 - For example, an estimate of 100 with an RSE of 2%, we could be 95% confident that the true value was within +/- 4%, or between 96 and 104.

Sample design

• The structured process by which a sample of the population is selected for enumeration.

• SE – Standard Error

- This is a measure of sampling variability. That is, the survey estimates may differ from those that would have been produced had all persons been included in the survey.
- There are about two chances in three (66% confidence interval) that a sample estimate will differ by less than one standard error from the figure that would have been obtained if all dwellings had been included in the survey, and about nineteen chances in twenty (95% confidence interval) that the difference will be less than two standard errors.
 - For example, for an estimate of 100 with an SE of 5, we could be 95% confident that the true value was within +/- 10, or between 90 and 110.
- 95% confidence interval See SE and RSE.

Bibliography

Australia

- International Labour Organisation Bureau Library and Information Services, Australia, Survey Methodology 1,
 - http://www.ilo.org/dyn/lfsurvey/lfsurvey.list?p_lang=en&p_country=AU>">http://www.ilo.org/dyn/lfsurvey/lfsurvey.list?p_lang=en&p_country=AU>">http://www.ilo.org/dyn/lfsurvey/lfsurvey.list?p_lang=en&p_country=AU>">http://www.ilo.org/dyn/lfsurvey/lfsurvey/lfsurvey.list?p_lang=en&p_country=AU>">http://www.ilo.org/dyn/lfsurvey/lfsurvey/lfsurvey.list?p_lang=en&p_country=AU>">http://www.ilo.org/dyn/lfsurvey/lfsurvey/lfsurvey/lfsurvey.list?p_lang=en&p_country=AU>">http://www.ilo.org/dyn/lfsurvey/lfsurv
- Labour Force Survey, Australian Bureau of Statistics, (cat.no. 6202.0) http://www.abs.gov.au/ausstats/abs@.nsf/mf/6202.0
- Labour Statistics: Concepts, Sources and Methods, Chapter 20 Labour F Force Survey, Australian Bureau of Statistics, (cat.no. 6102.0.55.001)

China

- International Labour Organisation Bureau Library and Information Services, China, Survey Methodology 1,

http://www.ilo.org/dyn/lfsurvey/lfsurvey.list?p_lang=en&p_country=CN>

Japan

- International Labour Organisation Bureau Library and Information Services, Japan, Survey Methodology 1,
 - http://www.ilo.org/dyn/lfsurvey/lfsurvey.list?p_lang=en&p_country=JP
- Labour Force Survey, 3. About the Labour Force Survey Sampling Method,
 Estimation Method, and Sampling Errors of Estimates
 http://www.stat.go.jp/english/data/roudou/>

Korea, Republic of (South)

 International Labour Organisation Bureau Library and Information Services, Korea, Republic of, Survey Methodology 1,

http://www.ilo.org/dyn/lfsurvey/lfsurvey.list?p_lang=en&p_country=KP

New Zealand

- International Labour Organisation Bureau Library and Information Services, New Zealand, Survey Methodology 1,
 - http://www.ilo.org/dyn/lfsurvey/lfsurvey.list?p_lang=en&p_country=NZ">http://www.ilo.org/dyn/lfsurvey/lfsurvey.list?p_lang=en&p_country=NZ
- Household Labour Force Survey, Statistics New Zealand,
 http://www.stats.govt.nz/survey-participants/a-z-of-our-surveys/household-labour-force-survey.aspx>
- Household Labour Force Survey: March 2014 quarter, Data quality, Statistics New Zealand, http://www.stats.govt.nz/browse_for_stats/income-and-work/employment_and_unemployment/HouseholdLabourForceSurvey_HOTPMar14 qtr/Data%20Quality.aspx>
- Household Labour Force Survey: March 2014 quarter, Commentary, Statistics New Zealand, http://www.stats.govt.nz/browse_for_stats/income-and-

- work/employment_and_unemployment/HouseholdLabourForceSurvey_HOTPMar14
 qtr/Commentary.aspx>
- Household Labour Force Survey: March 2011 quarter, Technical notes, Statistics New Zealand, http://www.stats.govt.nz/browse_for_stats/income-and-work/employment_and_unemployment/HouseholdLabourForceSurvey_HOTPMar11_qtr/Technical%20Notes.aspx

Singapore

- International Labour Organisation Bureau Library and Information Services, New Zealand, Survey Methodology 1,
 - http://www.ilo.org/dyn/lfsurvey/lfsurvey.list?p_lang=en&p_country=SG">http://www.ilo.org/dyn/lfsurvey/lfsurvey.list?p_lang=en&p_country=SG>
- Labour Market, First Quarter 2014, Manpower Research and Statistics Department, Ministry of Manpower, Singapore
 - http://stats.mom.gov.sg/Pages/ExploreStatisticsPublications.aspx#PublicationSearch ?topic=employment>

United Kingdom

- International Labour Organisation Bureau Library and Information Services, United Kingdom, Survey Methodology 1,
 - http://www.ilo.org/dyn/lfsurvey/lfsurvey.list?p_lang=en&p_country=GB>
- Labour market Statistics, June 2014, Accuracy of the Statistics: Estimating and Reporting Uncertainty, http://www.ons.gov.uk/ons/rel/lms/labour-market-statistics/june-2014/statistical-bulletin.html#tab-Accuracy-of-the-Statistics-Estimating-and-Reporting-Uncertainty>
- Labour market Statistics, June 2014, Revisions,
 http://www.ons.gov.uk/ons/rel/lms/labour-market-statistics/june-2014/statistical-bulletin.html#tab-Revisions>
- Labour market Statistics, December 2013, Background notes, http://www.ons.gov.uk/ons/rel/lms/labour-market-statistics/december-2013/statistical-bulletin.html#tab-background-notes

United States

- International Labour Organisation Bureau Library and Information Services, United States, Survey Methodology 1,
 - http://www.ilo.org/dyn/lfsurvey/lfsurvey.list?p_lang=en&p_country=US">http://www.ilo.org/dyn/lfsurvey/lfsurvey.list?p_lang=en&p_country=US
- Australian Bureau of Statistics Annual report 2010-11, (cat.no. 1001.0),
 http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/1001.0Main+Features12010-11?OpenDocument>