Subject: Using tfr2 to Calculate age specific marital fertility rate
Posted by Michaelo on Fri, 17 Nov 2017 05:31:52 GMT
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I am using tfr2 for the first time and I find it much more flexible and user friendly for a novice stata user. Thanks Bruno
I will be most grateful if you could kindly describe how I can use tfr2 to calculate Age-Specific Marital Fertility Rate(ASFMR) Which refers to number of marital births per 1,000 married women of a specific age group. This will require the computation of Number of marital births for each age group of the married women. Similarly Age-Specific non Marital Fertility Rate(ASFMR)is expected to be calculated using the number of non-marital births in the specified age group.

By convention, I have observed from some publications that the Age-Specific Marital Fertility Rate (ASMFR) could be derived by dividing the age-specific fertility rates by the proportion of women currently married in each age group. However, I guess this may be more valid in societies where births occur mostly within marriages. How do we account for the contribution of the never married as compared to the ever married? Your help needed.
In using the tfr2, the command "by v502, sort: tfr2, awf(awfactt)" gives the TFR as per marital status, this I guess should be different from ASMFR.

Thanks
Michaelo

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by Michaelo on Sat, 18 Nov 2017 14:35:41 GMT
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Dear dhs users, I observed the command
tfr2,entry(v509)
gives the marital fertility rates, but how do one get the non-marital fertility rate or the fertility rate for the never married?,
your kind response will be appreciated
Thanks

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by schoumaker on Sat, 18 Nov 2017 20:31:16 GMT
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Hello,

For marital fertility rates, when you use

tfr2, entry(v509)

only births occuring after first marriage and exposure after first marriage are used in the computation of fertility rates. This is equal to marital fertility rates if people remain married from that time. This is usually fine at low ages, but less at higher ages, since some people are no longer in union at the time of the survey.

you could select a subsample (for instance people married or living together at the time of the survey) - that should lead to slightly higher rates.

tfr2, entry(v509), if v501==1 | v501==2

There is no direct way to compute non marital fertility rates with tfr2 - but with a simple trick you should be able to get them:

Here is what I would do:

* you create a variable dates that is equal to the date of first marriage if marriage occured, and the date of survey if the marriage has not occured. So you will only keep observtions before that date (before marriage, and until the survey if the person married).

gene dates=cond(v509!=., v509, v008)

* you create a date of entry that is equal to the date of the survey(v008) minus the number of months (36 if you want to compute rates over the last 3 years)

gene entry=v008-36

* next, you compute the rates between the start of the period (entry) and the dates variable (date of marriage or date of survey if not married).

tfr2, entry(entry) dates(dates)

I tested it in a few countries and it looks fine. But I would be glad to have your feedback.

Hope this helps.

Best,

Bruno

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by Michaelo on Sun, 19 Nov 2017 02:18:28 GMT
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Many thanks Bruno for the prompt response.
I am using the Ghana dataset. For The marital fertility rate using, . tfr2, entry(v509), if v501==1 | v501==2 was higher than the tfr2,entry(v509) . eg using the 2008 dataset GHIR5HFL.DTA", gives 6.195775 as compared to 5.850916. Thanks so much.

However, trying the non-marital fertility rate with "GHIR5HFL.DTA", gives this error message
Maximum number of iterations exceeded.
r(498);
Besides, I observed, the period covered to have been 10 years earlier, that is 12/1995 to 11/1998 is instead of 2005-2008
I used:

gene dates=cond(v509!=., v509, v008)
gene entry=v008-36
tfr2, entry(entry) dates(dates)

This worked for the 2003 Ghana dataset but again, the period was 10 years ahead. 1990-1993, instead of 2000-2003
The output obtained was:

tfr2, entry(entry) dates(dates)
weight variable is v005
Preparing table of events and exposure for 3 year(s) preceding the survey
Period covered: 5/1990 to 4/1993
Central date is 1991.8359
Number of cases (women): 1851
Number of person-years (weighted): 3925.2241
Number of events (weighted): 80.825775

ASFRs - TFR

events	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Rate_1519	.0178312	.002676	6.66	0.000	.0125864	.0230761
Rate_2024	.0328445	.0056704	5.79	0.000	.0217306	.0439583
Rate_2529	.004697	.0041574	1.13	0.259	-.0034514	.0128454
Rate_3034	.0071107	.0087363	0.81	0.416	-.0100121	.0242335

```
   Rate_3539 |    .024647   .0254917     0.97   0.334    -.0253158    .0746099
   Rate_4044 |   2.40e-09          .        .       .           .           .
   Rate_4549 |   7.74e-09          .        .       .           .           .
         TFR |   .4356522   .1398883     3.11   0.002     .1614763    .7098282
-------------------------------------------------------------- ------------------
```

I would be grateful if you could kindly advise
Thanks so much
Michael

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by schoumaker on Sun, 19 Nov 2017 07:36:38 GMT
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Thanks for your feedback,

for non-marital fertility rates:

You are right, the reported time period is not correct.

You should specify that the rates are to be estimated only if dates>entry. You will get the same rates, but the time period will be correct. I had not anticipated this use of tfr2 - and I will correct it in a further version.

tfr2 if dates>entry, entry(entry) dates(dates)

If you get the message "maximum number of iterations exceded", this is probably because there are no events in some age groups. tfr2 uses Poisson regression and will run into this kind of problems with small samples.

You could use tabexp

tabexp if dates>entry, entry(entry) dates(dates) rates

You will get the number of events, exposure, and rates in each age groups (computed by dividing events by exposure).

if you find the number of events is 0 in th upper age groups, you could restrict you analyses with tfr2 to a smaller age range (for instance 15-39).

For instance

tfr2 if dates>entry, entry(entry) dates(dates) mina(15) maxa(39)

For marital fertility rates, When you select v501==1 | v502==2, check if these categories refer to women in union.

Best,

Bruno

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by Michaelo on Tue, 21 Nov 2017 08:14:11 GMT
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Thank you Bruno for the feedback. It has been so helpful.
Michael

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by Mercysh on Tue, 27 Aug 2019 12:58:47 GMT
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Hi Bruno

Is it possible to calculate the number of cases for age specific fertility rates using tfr2?

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by schoumaker on Tue, 27 Aug 2019 17:11:11 GMT
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If you use tabexp, you will get the number of births and exposure for each age group and time period.
Best,
Bruno

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by Mercysh on Thu, 29 Aug 2019 09:34:39 GMT
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Thank you

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate

Posted by Mercysh on Mon, 30 Sep 2019 08:21:08 GMT
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Good day

I am trying to decompose ASFR for ages 15-19 years,and one of the steps is to calculate the national ASFR from proportion of adolescents aged 15-19 years and the disaggregated ASFR e.g. urban/rural (v025). Unfortunately the national ASFR I get does not add up to the national one obtained from using tfr2, the same one from the report,

I use tabexp to get cases (women) for (1) current ages 15-19 using:
tabexp if v012 <=19 & v025 ==1
tabexp if v012 <=19 & v025 ==2

and(2)including individuals currently aged 20-24 and contributed to the Person Years using:
tabexp v025, minage(15) maxage(19)

I still do not get consistent results.

Kind regards;

Mercy

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by schoumaker on Mon, 30 Sep 2019 11:26:06 GMT
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Hello,
What is the name of the data file you use?
Best regards,
Bruno

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by Mercysh on Wed, 02 Oct 2019 08:57:41 GMT
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Good day

I am using South Africa 2016 IR file.

Kind regards;

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate

Hello,

If I understand correctly what you want to do, you should use

. tabexp v025, rates mina(15) maxa(19)
weight variable is v005
Preparing table of events and exposure for 3 year(s) preceding the survey
Period covered: 8/2013 to 7/2016
Central date is 2015.0982
Number of cases (women): 2335
Number of person-years (weighted): 4482.1265
Number of events (weighted): 318.67191

v025	period	ageg	events	exposure	centry	rate	se_r
urban	0	15	178.119	2852.75	2015.098	.0624375	.0046783
rural	0	15	140.553	1629.376	2015.098	.086262	.0072761

You get the adolescent fertility rate in each place of residence, and you obtain the weighted exposure and weighted number of births.

You can check that the weighted mean of the rates (exposure used as weights) is equal to the rate at the country level : 2852,75*0,0624375+1629,376*0,086262=0,0710984

. tabexp, rates mina(15) maxa(19)
weight variable is v005
Preparing table of events and exposure for 3 year(s) preceding the survey
Period covered: 8/2013 to 7/2016
Central date is 2015.0982
Number of cases (women): 2335
Number of person-years (weighted): 4482.1265
Number of events (weighted): 318.67191

period	ageg	events	exposure	centry	rate	se_r
0	15	318.672	4482.126	2015.098	.0710984	.0039828

****

In contrast, if you do

tabexp if v025==1, rates
tabexp if v025==2, rates

or

by v025, sort: tabexp, rates

the rates will be the same, but weighted events and exposure will not be the same as in the previous example, because the weights are normalized so that their sum is equal to the sample size. So, doing it separately by place of residence will not allow you to estimate the share of exposure in each place of residence. If sampling weights were all equal to 1, the two approaches would lead to the same results.

Since you mentioned you tried also the following command, I will briefly comment on this.

. tabexp if v012 <=19 & v025 ==1

Here, you are not computing events and exposure beetween 15-19, but among women aged 15-19 at the time of the survey. By default, the minimum age in tabexp and tfr2 will be 15. So, three years before the survey, you will only get events and exposure among women 15-16. So, if you want to work on a specific age group, use minage and maxage options, but do not select people on the age at the time of the survey.

Best,

Bruno

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by Mercysh on Thu, 03 Oct 2019 07:47:11 GMT
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Thank you for the detailed response. My concerns are addressed.

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by Mercysh on Thu, 03 Oct 2019 11:39:59 GMT
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Just to say the following gives me number of events (weighted) - 318.67 not national ASFR:

You can check that the weighted mean of the rates (exposure used as weights) is equal to the rate at the country level : 2852,75*0,0624375+1629,376*0,086262=0,0710984

Thank you

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by schoumaker on Thu, 03 Oct 2019 11:45:57 GMT

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Yes, sorry, you should divide by the total exposure (2852,75+1629,376).
Best, Bruno

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by Mercysh on Thu, 03 Oct 2019 12:22:03 GMT
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Noted, thank you.

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by Mercysh on Thu, 10 Oct 2019 15:03:00 GMT
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Dear Bruno

A follow-up question-

How can one decompose ASFR given the following:
1. That the rate refers to mid-point of the 3 years before the survey but all the potential independent variables' reference is at the time of the survey
2. That the denominator here is the PY(exposure) not the total population -although the total cases (number of women) are available using tfr2 but I could not get the numbers disaggregated for each variable.

Your help will be much appreciated.

Kind regards;

Mercy

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by waqas on Tue, 11 Jul 2023 09:37:38 GMT
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Dear Bruno!

I have used tfr2 package extensively on different rounds of Pakistan Demographic and Health Surveys (PDHS).

Tfr2 uses awfact for different subgroups. In this regards, five major variables of awfact for u/r, regions, education, wealth quintiles and total samples are constructed and provided with IR data

file in DHS.

Can I have tfr2 package that accumulates only ever married women samples instead of awfact. It can help to calculated marital age specific fertility rates and marital TFRs.

Secondly, DHS report CS28 "Gora Mboup and Tulshi Saha. 1998. Fertility Levels, Trends and Differentials. DHS Comparative Studies No. 28. Calverton, Maryland: Macro International Inc." page#3 (https://www.dhsprogram.com/pubs/pdf/CS28/CS28.pdf) provides details on how MTFR can be calculated. we also need to have another filter of age 24-29 years marital duration to be incorporated in by definition.

Can you kindly help me on how can i achieve MTFRs!

Your response is import for me to understand fertility trends in Pakistan.

Thank You
Waqas Imran

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by schoumaker on Wed, 12 Jul 2023 11:46:26 GMT
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Hello,

Thank you for your message.

By default, tfr2 uses awfactt to compute ASFRs. However, if you want to compute marital fertility rates, awfactt should not be used.

You can simply create a new all-women factor variable that is constant and equal to 100 (as in surveys with all women), and can compute marital fertility rates among ever married women in the following way.

```
gene awfac_cons=100
tfr2, entry(v509) awf(awfac_cons)
```

the DHS report you mention refers to duration-specific marital fertility rates. Unfortunately, the Stata command tfr2 does not allow computing fertility rates by duration of mariage. I could think of including it in a revised version (but probably not very soon).

I hope this helps.

Best regards,

Bruno

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by waqas on Thu, 13 Jul 2023 04:38:55 GMT
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Hi Bruno!

Thankyou for your timely response over my query.

I have executed as your suggested. There is problem with age specific rates here. None of figure matches with rates published in final report of Pakistan Demographic and Health survey 2006-07 (FR200 Table 4.3 page 44). Although TMFR deviates slightly by 0.1-0.2 births (It is 6.6 TMFR published vs 6.5 TMFR calculated from you suggested commends).

Also guide me whether should is use selection of v025==1 for urban and v025==2 for urban and rural samples respectively as below:-

tfr2 if (v025==1), entry(v509) awf(awfac_cons)
tfr2 if (v025==2), entry(v509) awf(awfac_cons)

Your expert suggestion is needed here.

Thankyou
Waqas Imran

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by schoumaker on Thu, 13 Jul 2023 07:19:47 GMT
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Hello,

Thank you for your useful feedback. I checked the 2006 Pakistan report to replicate the published results (FR200, Table 4.3).

Here is the code that gives exactly the same results as those published in the report.

gene awfac_cons=100 // creating an artificial all women factor
gene v509c=v509-1 // removing one month from the date of first union
tfr2, entry(v509c) awf(awfac_cons), if v501==1 // for the total
tfr2, entry(v509c) awf(awfac_cons), if v501==1 & v025==2 // in rural areas
tfr2, entry(v509c) awf(awfac_cons), if v501==1 & v025==1 // in urban areas
tfr2, entry(v509c) awf(awfac_cons), if v501==1 & v026==0 // in major city

tfr2, entry(v509c) awf(awfac_cons), if v501==1 & v025==1 & v026!=0 // in other urban

So, the differences with the previous code are that:

1. the rates are computed among currenttly married women (v501==1)
2. the date of marriage is changed to the previous month.

I need to check why in the date of first union needs to be changed for the results to match perfectly. But in this way you will be able to replicate the results, and use the same approach with more recent data to look at trends in marital fertility.

Best regards.

Bruno

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by waqas on Thu, 13 Jul 2023 07:57:50 GMT
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Many thanks Bruno,

I have tried and it perfectly matches with report.

I have one more query relevant to it. What change in command will be need to restrict analysis for different number of years preceding the survey. Currently it is producing results for 3 years preceding the survey.

Regards
Waqas Imran

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by schoumaker on Thu, 13 Jul 2023 08:11:03 GMT
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Hello,

You can change the number of years preceding the survey with the 'length' option.

For instance

tfr2, entry(v509c) awf(awfac_cons) len(5), if v501==1 // for the total

will compute rates for the 5 years preceding the survey.

You can also use calendar years instead of years preceding the survey, with the option cy.

tfr2, entry(v509c) awf(awfac_cons) len(5) cy, if v501==1 // for the total

Best regards,

Bruno

Subject: Re: Using tfr2 to Calculate age specific marital fertility rate
Posted by waqas on Thu, 13 Jul 2023 08:52:05 GMT
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Hi!

Now i can confidently move towards other surveys where it is not calculated.

Many thanks for your timely response

Regards
Waqas Imran
