



Drinking trends by age and over time among baby boomers and older drinkers

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Conflict of interest

The authors declare no conflict of interest.

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Summary

- Previous work has found that overall alcohol consumption in Australia has declined, primarily due to a decrease in consumption in young people.
- However, it is possible that this decline in consumption in younger drinkers could be masking an increase in older drinkers, and some evidence of this has been found in cross-sectional studies.
- Rather than individual older drinkers increasing their consumption, it has been hypothesised that baby boomers are failing to decrease their consumption as they age at the same rate as the generation before them.
- In order to test this hypothesis, annual longitudinal data from the Household Income and Labour Dynamics in Australia, was collected between 2001 and 2016.
- Between 4,396 and 6,274 Australians born between 1928 and 1964 from each yearly survey were analysed.
- Abstainer rates appeared to increase as people got older, but at a similar rate in all cohorts.
- The quantity of alcohol consumed per occasion decreased over time, but again, at the same rate for all cohorts.
- Frequency of consumption appeared to increase with age up until the age of 80, again at a similar rate among cohorts.
- While some younger cohorts, under the age of 50 in 2002, did increase their consumption between 2002 and 2008, when per capita consumption was increasing, it ceased to increase between 2009 and 2016.
- Meanwhile, consumption did decrease between 2009 and 2016 in multiple older age groups.
- The results of the current study do not find evidence for baby boomers failing to decrease their consumption at the same rate as older cohorts.
- Given the significant harm from alcohol consumption being faced by baby boomers, health promotion efforts or policy changes that could facilitate a decrease in consumption in this group (similar to that of younger drinkers) would be beneficial.

Introduction

Alcohol is a leading cause of death and disability in Australia, responsible for 5.1% of deaths and 4.1% of disability-adjusted life years lost (1). In Australia, alcohol consumption is thought to be the cause of fifteen deaths per day (2), and four per cent of cancer deaths can also be attributed to alcohol use (3). In 2016, 17% of Australian adults consumed alcohol at a level that puts them at increased risk of long-term harm (4).

Per capita alcohol consumption in Australia has declined by around 10% since 2007/08, after a steady increase through the first years of the 2000s (5). This decrease has been predominantly driven by substantial reductions in drinking among teenagers and young adults (6). There are many theories as to the reasons behind these declines, and work is underway internationally to explain them (7).

In contrast, recent analyses of national survey data in Australia have identified increases in rates of risky drinking among older age groups (6). For example, the proportion of drinkers aged 30-59 that consumed 20 standard drinks or more in a drinking occasion increased significantly between 2001 and 2013. Similarly, there were increases in regular risky drinking (five or more standard drinks per occasion) for those aged between 60 and 69 and reductions in abstinence rates for the same age group. When sex-specific data are examined, there appear to have been sharp increases in risky drinking for women aged 50-59 (8).

These increases in risky drinking among older age groups have only been identified in one Australian data source – the National Drug Strategy Household Survey and seem worthy of further investigation. Given traditional life-course patterns of drinking involve substantial reductions with age (9), it is unlikely that the data discussed above represent increases in drinking within specific individuals. Instead, we suggest a possible explanation: the generation of people aging into their fifties and sixties during the early 2000s (the baby boomers) may simply be not slowing down their drinking with age as previous generations have. In other words, baby boomers in their fifties may reduce their drinking less as they age into their sixties, while for older generations the decline was more marked.

We aimed to test this theory using a unique source of longitudinal data on Australian drinking, the Household, Income and Labour Dynamics in Australia (HILDA) study. We will use the HILDA data to analyse the drinking habits of baby boomers from 2001 to 2016 and compare their drinking patterns across the life course with those of previous generations. It is hypothesised that baby boomers are not decreasing their consumption at the same rate as drinkers from the silent generation before them.

Methods

SAMPLE AND SURVEY

All data is taken from the first thirteen waves of the HILDA study. This household-based panel study is administered annually, starting in 2001. The first wave was administered to 13,969 individuals aged 15 and over living in 7,682 households. All members of the household are followed and in the event that they move house, they are followed to their new address. New members of HILDA household are also recruited to the study. A top-up sample was added to the study in 2011, however as the focus of the current study was on following respondents over time, these respondents were not included.

Each year multiple surveys are completed in participating households. One is specific to the entire household, another is administered to the individual and a third, the self-completed questionnaire, is completed by each household member aged 15 or over in their own time after the initial interview. These questionnaires are then collected later. The questions on alcohol are in the self-completed questionnaire. Retention rates, the proportion of respondents from the wave before who participated in each wave, were excellent. Retention rates for the survey overall and response rates for the self-completed survey (among those who completed the survey that wave) are shown in Table 1.

In the current study, baby boomers are defined as those people born between 1946 and 1964. Respondents were included in the current study if they met this criterion. Furthermore, those born in the 18 years prior to 1946 are included in some analyses in order to ascertain if baby boomers are aging out of their heavy alcohol consumption in a different way to those in previous cohorts. Respondents were removed from the data set if they completed fewer than seven waves of the survey. This was so that we could get the consumption rates of people over time.

As noted above respondents needed to complete the alcohol-related questions to be included in this study. These questions included *“Do you drink alcohol?”* with respondents then asked to provide the frequency of their consumption. A follow-up question for drinkers asks *“On a day that you have an alcoholic drink, how many standard drinks do you usually have?”* with it made clear to respondents that the response frame is the last twelve months. Please note that the response options for the frequency question changed after Wave 1, remaining consistent from Wave 2 to Wave 13 with more response options included. Previous work comparing HILDA estimates to per capita consumption indicates that this has not impacted on results (10).

Respondents are designated as abstainers in a given year if they state that they drank no alcohol in the past twelve months. Volume is the product of the mid-point quantity per occasion and the frequency expanded to represent drinking occasions per year (i.e., a respondent who stated that they drank 5-6 drinks 1-2 times per week was designated $5.5 * 1.5 * 52 = 429$ occasions per year. Units of interest for analyses depicting total volume or quantity per occasion uses Australian standard drinks (ASD; 10g ethanol) for drinks.

Table 1. Sample size and response rates for this study per wave.

| YEAR | N | RR | SCQ RR |
|------|------|-------|--------|
| 2001 | 6274 | - | 93.5 |
| 2002 | 6265 | 86.9 | 93 |
| 2003 | 6154 | 90.4 | 92.3 |
| 2004 | 5856 | 91.6 | 91.9 |
| 2005 | 5697 | 94.4 | 89.9 |
| 2006 | 5584 | 94.9 | 90.8 |
| 2007 | 5344 | 94.7 | 89 |
| 2008 | 5061 | 95.2 | 87.6 |
| 2009 | 5006 | 96.3 | 86.9 |
| 2010 | 5027 | 96.4 | 89.1 |
| 2011 | 4893 | 96.5 | 87.8* |
| 2012 | 4767 | 96.2* | 88.7* |
| 2013 | 4622 | 96.4* | 88.1* |
| 2014 | 4536 | 96.5* | 89.2* |
| 2015 | 4447 | 97.0* | 88.5* |
| 2016 | 4396 | 97.0* | 92.1* |

***Rates are calculated without the top-up sample included as these participants were not included in the current study.**

RR = Retention Rate; SCQ RR = Self Complete Questionnaire Response Rate (see sample and survey section for more information).

ANALYSIS

All data analysis was conducted in Stata version 14.2. For ease of interpretation, results from every second year of birth are shown in the Figures below. In order to look for differences in consumption among the same age group at different survey times, repeated measures t-tests were used.

Results

The drinker rate, the proportion of people who had consumed alcohol in the previous twelve months, is shown in Figure 1. As can be seen, the rate of decline is fairly steady among the different cohorts for both genders, with a slight decrease in drinker rates over time. With the rate of abstinence steadily increasing it was decided that the abstainers would be included in all the following analyses as it will provide more intuitive results.

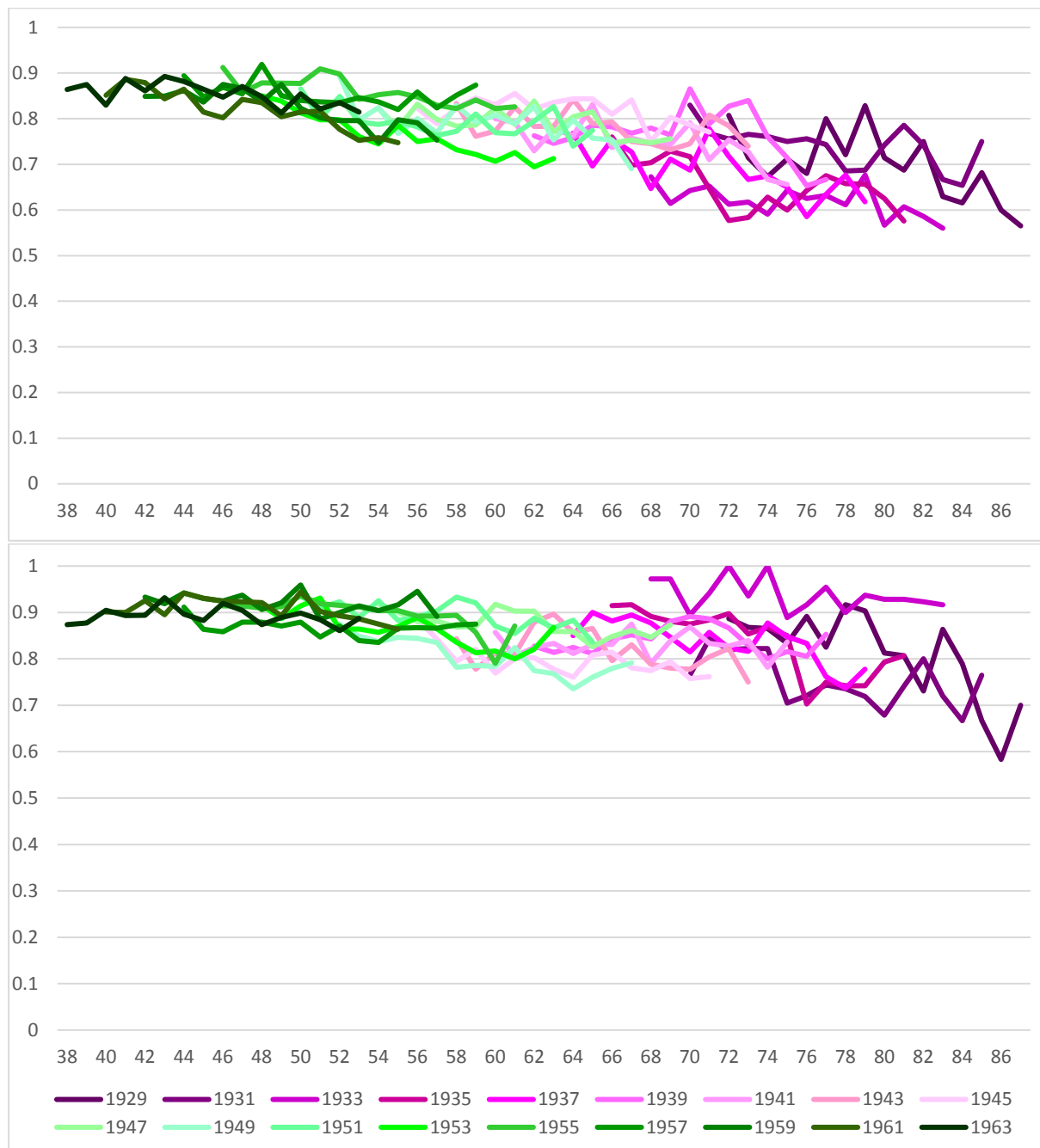


Figure 1. Percentage of females (top) and males (bottom) and age, per cohort, that reported consuming alcohol in the year prior to survey.

Figure 2 shows the moving average of the total volume of alcohol consumed for respondents born in cohort groups at different ages. The baby boomers are shown in different shades of green, and the silent generation are shown in different shades of pink. An overall curve can be seen where respondents appear to have fairly steady, albeit variable, consumption up until their late seventies at which point consumption begins to drop off, however there are no apparent trends in the drop in consumption.

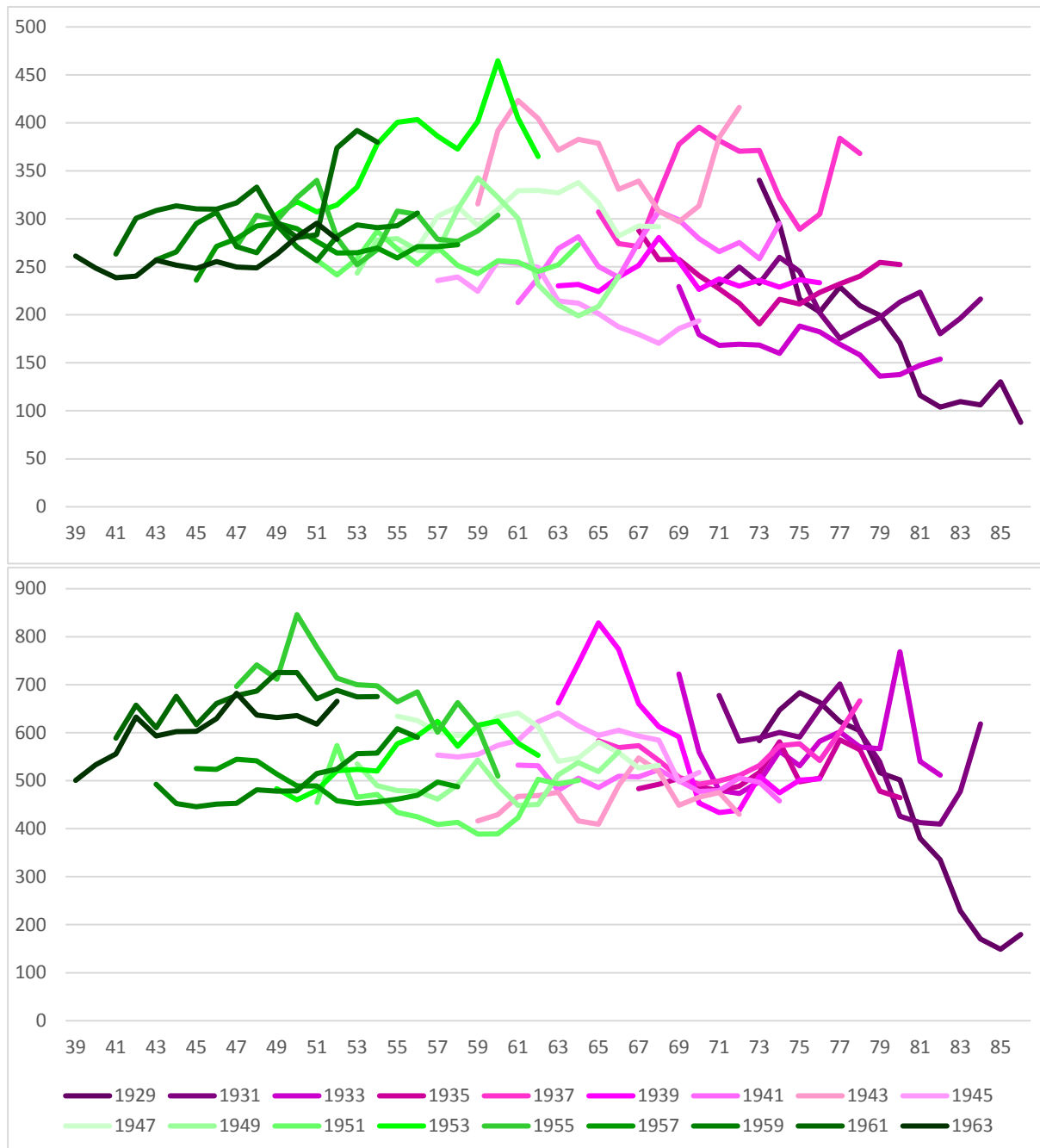


Figure 2. Moving average of total volume consumed of females (top) and males (bottom), by age and year of birth among drinkers.

The total volume shown in Figure 2 is a product of two factors, how often a person drinks (frequency of consumption) and how much they drink when they do (quantity per occasion).

In order to investigate the information presented in Figure 2, the moving average of quantity per occasion by age and year of birth is shown in Figure 3. Again, a fairly steady trend is shown, this time a steady decrease in the average number of standard drinks per occasion for both genders.

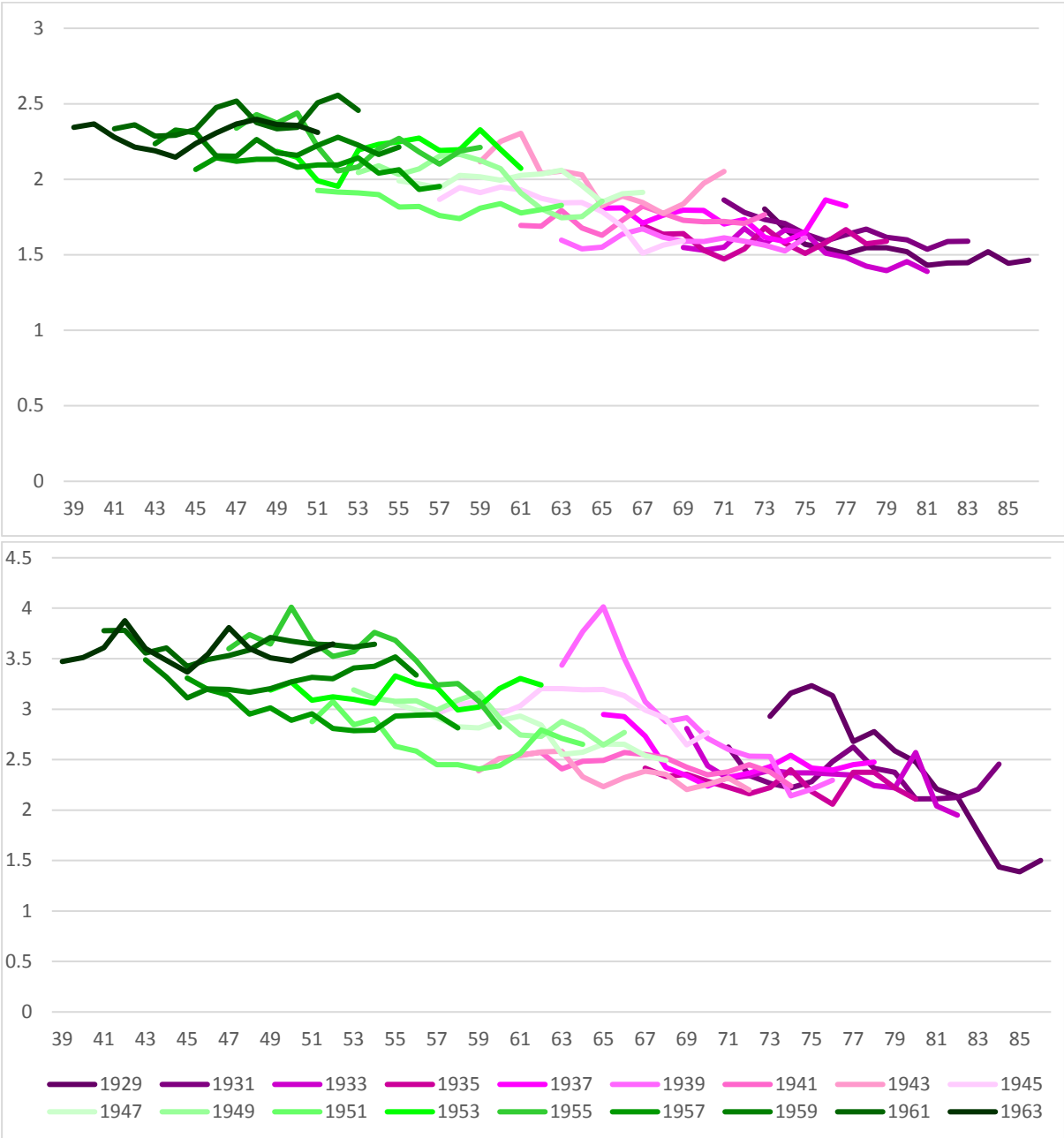


Figure 3. Moving average of quantity per occasion by age and year of birth among drinkers for females (top) and males (bottom)

Figure 4 shows the average frequency of consumption by age and year of birth. Again, a fairly steady trend can be seen with the frequency of consumption steadily increasing up until the drinker's late seventies. This is with the exception of the cohort born between 1929 and 1937, whose frequency of consumption was slightly more erratic, possibly due to the impact of the increasing abstainer rate and/or because there appears to be a sharp turning point in their early eighties where the increase in alcohol consumption might quickly downturn.

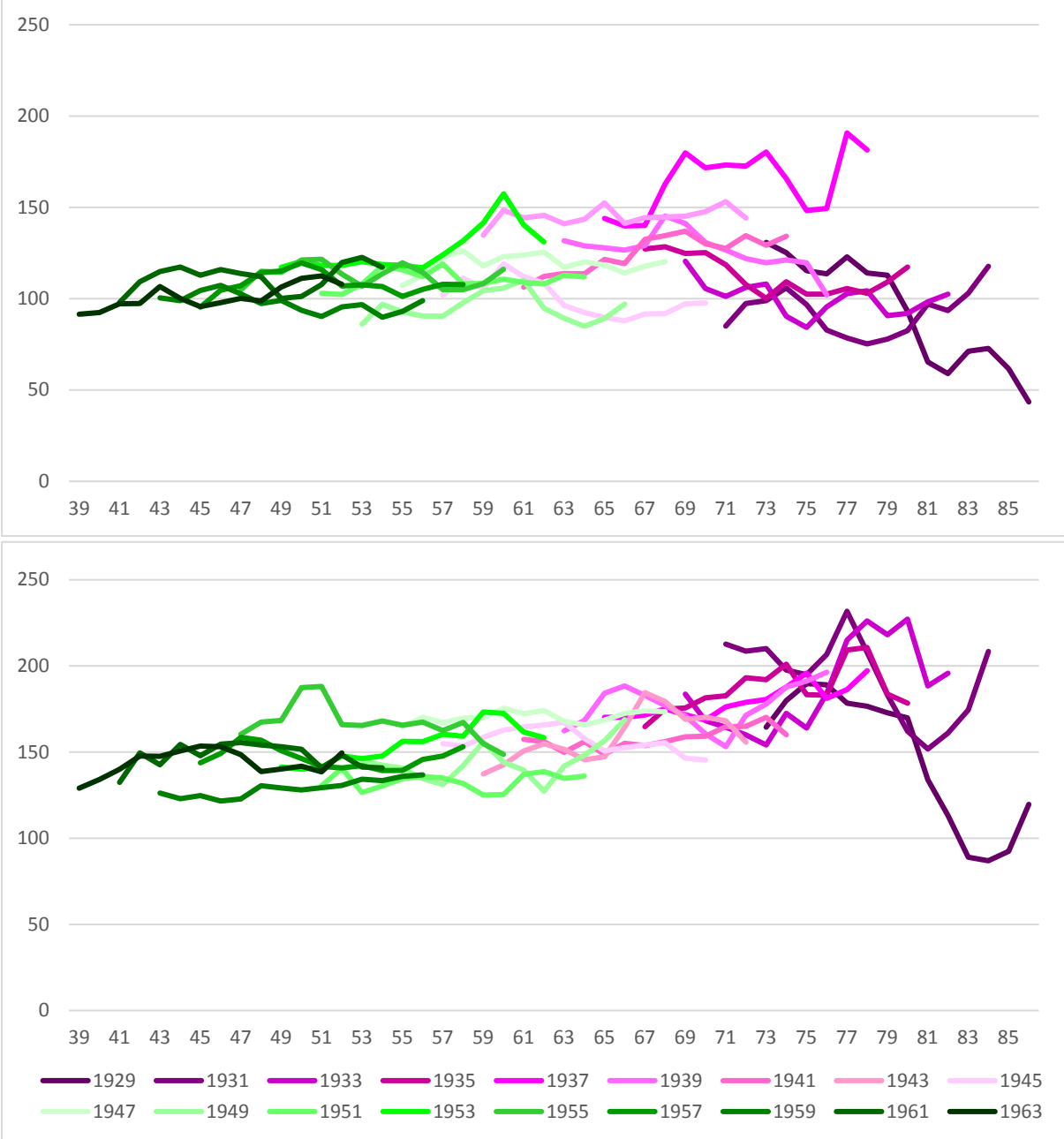


Figure 4: Moving average of frequency per occasion by age and year of birth among drinkers for females (top) and males (bottom)

While the figures above can help us visualise the trends in consumption over time, it is also worth testing for significant shifts in consumption within cohorts over time. Per-capita estimates of consumption (5) indicate a peak in consumption around 2009 that may be masking some of the results shown above. Therefore, in Table 2, the average consumption for respondents in given age groups in 2002 and 2008 are shown and the average consumption for respondents in given age groups in 2009 and 2016 are shown in Table 3.

Between 2002 and 2008, consumption among 35 -39 and 45-49 year olds increased by 13% and 7% respectively while consumption among 70-79 year olds decreased by 17-18%. However, between 2009 and 2016 the increase in consumption among those aged under 50 was not found while consumption for those aged 60-64 and 70-79 decreased at a similar rate that was found from 2002 to 2008. Combined with Figures 1 to 3 these results do not support the hypothesis that older drinkers are failing to decrease their consumption at the same rate as older cohorts.

Table 2. Comparison of total volume consumed within cohorts between 2002 and 2008 by age.

| 2002 AGE | 2008 AGE | 2002 | 2008 | CHANGE | t | df | p |
|--------------|--------------|--------------|--------------|-------------|--------------|------------|-----------------|
| 35-39 | 41-45 | 347 | 392.3 | 13% | -3.69 | 661 | <.001 |
| 40-44 | 46-50 | 343.8 | 363.5 | 6% | -1.89 | 724 | 0.059 |
| 45-49 | 51-55 | 353.3 | 378.6 | 7% | -2.17 | 652 | 0.031 |
| 50-54 | 56-60 | 376.3 | 375 | 0% | 0.12 | 567 | 0.908 |
| 55-59 | 61-65 | 380.7 | 381.4 | 0% | -0.05 | 509 | 0.964 |
| 60-64 | 66-70 | 397.4 | 381.5 | -4% | 1.14 | 413 | 0.255 |
| 65-69 | 71-75 | 371 | 362.6 | -2% | 0.45 | 341 | 0.650 |
| <i>70-74</i> | <i>76-80</i> | <i>348.3</i> | <i>289.6</i> | <i>-17%</i> | <i>2.86</i> | <i>238</i> | <i>0.005</i> |
| <i>75-79</i> | <i>81-85</i> | <i>360.6</i> | <i>294.9</i> | <i>-18%</i> | <i>3.16</i> | <i>125</i> | <i>0.002</i> |

Significant increases are shown in bold and significant decreases are shown in italics.

Table 3. Comparison of total volume consumed within cohorts between 2009 and 2016 by age.

| 2009 AGE | 2016 AGE | 2009 | 2015 | CHANGE | t | df | p |
|--------------|--------------|--------------|---------------|-------------|-------------|------------|-----------------|
| 35-39 | 42-46 | 321.2 | 307.8 | -4% | 0.96 | 594 | 0.340 |
| 40-44 | 47-51 | 401.7 | 389.8 | -3% | 0.81 | 637 | 0.421 |
| 45-49 | 52-56 | 378.7 | 377.7 | 0% | 0.11 | 750 | 0.915 |
| 50-54 | 57-61 | 359.4 | 358.6 | 0% | 0.08 | 701 | 0.940 |
| 55-59 | 62-66 | 368.4 | 355.7 | -3% | 1.10 | 607 | 0.273 |
| <i>60-64</i> | <i>67-71</i> | <i>381.7</i> | <i>336.2</i> | <i>-12%</i> | <i>3.63</i> | <i>567</i> | <i><.001</i> |
| 65-69 | 72-76 | 393.8 | 370.8 | -6% | 1.80 | 415 | 0.072 |
| <i>70-74</i> | <i>77-81</i> | <i>371.7</i> | <i>319.4</i> | <i>-14%</i> | <i>3.95</i> | <i>275</i> | <i><.001</i> |
| <i>75-79</i> | <i>82-86</i> | <i>278.7</i> | <i>233.05</i> | <i>-16%</i> | <i>2.02</i> | <i>158</i> | <i>0.045</i> |

Significant increases are shown in bold and significant decreases are shown in italics.

Discussion

Contrary to expectations, little evidence was found from this study of baby boomers failing to decrease their consumption at the same rate as those before them. The total volume of alcohol consumed over the past 15 years consistently shows a pattern of steady consumption until approximately 70 years old, at which point consumption decreases. Looking more closely, the number of drinks per occasion decreased steadily from the late thirties onwards, but this was offset, at least before drinkers' mid-seventies, by an increase in drinking frequency.

In a more direct comparison, drinkers in their late thirties and late forties in 2008 increased their consumption while a similar increase was not found between 2009 and 2016. Meanwhile, drinkers aged over 70 decreased their consumption at a similar rate between 2002 and 2008 as they did between 2009 and 2016.

The longitudinal nature of the data available in the HILDA study allows for a more detailed look at changing consumption at the individual level over time. However, the quantity-frequency based questions on alcohol consumption underestimate consumption more than the graduated frequency measure used in most of the articles mentioned in the introduction. As such, the measure used in this study, may miss irregular heavy drinking occasions of the kind that were found to be on the increase (6). It is worth noting that other analyses of repeated cross-sectional survey data from the National Health Survey did not identify marked increases in drinking among older people after 2007 (10). In fact, this study reported marked declines for 50-69 year olds between 2007 and 2014, which suggests the trends identified in the NDSHS for these age groups may not reflect actual behavioural changes.

The results from the current study do not find evidence for baby boomers failing to decrease their consumption at the same rate as older cohorts. However, there is significant harm from alcohol consumption that is experienced from this generation. For instance, people aged 50-59 are the demographic group that are the most commonly picked up demographic group for alcohol related harm (2). Health promotion efforts or policy changes that could facilitate a decrease in baby boomer consumption similar to that found in young adults could decrease the significant harm from alcohol that this generation experiences. Given that older drinkers consume most of their alcohol in the home (11), health promotion campaigns that focus on heavy home drinking or price-based policy changes that increase the price of alcohol purchased for consumption outside of licensed premise, such as a minimum unit price, could help to decrease the consumption and thus harm to older drinkers.

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