Anti-Scroogenomics:
A Keynesian Celebration of Christmas *

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PRELIMINARY, PLEASE DO NOT CITE

1 Introduction

Christmas involves the exchange of gifts. Waldfogel, in a series of papers and a book, argues that this gift-giving is inefficient from a microeconomic perspective, as those who receive gifts would prefer to receive the cash equivalent instead (Waldfogel, 1993, 1996, 1998, 2005, 2009). The recipient would, then, choose to consume in a way that would give them the optimal utility. The gift giver cannot improve on this and is likely to make a much worse choice. A cash exchange would be better, though cultural norms around a cash "stigma" prevent this (Waldfogel, 2002). The best alternative is gift cards, which give the gift recipient more choices. However, gift giving may provide a way to signal the closeness of the relationship between the gift giver and the gift recipient (Prendergast and Stole, 2001). However, Ruffle and Tykocinski (2000) were not able to replicate this result, and found that gift-giving is welfare improving, and significantly so. The average recipient valued gifts at more than double their costs in their analysis. List and Shogren (1998) use an auction framework and similarly find welfare improvement from gift-giving.

In any case, this paper will argue that Waldfogel's analysis in incomplete, even if it could be shown to be correct. Firstly, because he does not consider the potential for expenditure on gifts to increase incomes through a standard Keynesian channel. The origins of Christmas are first discussed, with an eye towards the utility of the holiday along Keynesian lines, particularly in historic Europe around the winter solstice. Then, a modern data on retail sales is used to show the importance of retail sales and Christmas across different countries. Non-seasonally adjusted data of quarterly retail sales data, combined with GDP, are used to

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construct Keynesian multipliers. These are about 10 times larger on average (and 14 times larger during the fourth quarter), than the upper bound of Waldfogel's estimates of the dead-weight loss from Christmas gift-giving . Once we consider these multiplier effects, the economic benefits to spending in this period of slack more than offset the costs of gift-giving.

Next, the effect of household size on Christmas gift-giving is considered. Since it is customary to give at least one present to each other household member, declining fertility and declining population growth could reduce spending on Christmas gifts. The idea that declining population growth could reduce spending, resulting in a secular stagnation trap originates with Alvin Hansen (1939), and this effect is shown through the non-linear effect of smaller family sizes on Christmas spending. Waldfogel (2022) argues that, since 2000, holiday gift-giving has fallen in real terms even as real income has risen, which is evidence of gift-giving becoming an inferior good. However, Waldfogel does not correct for the effect of declining family size on the number of gifts given, and so these estimates of income elasticities based on real values will be incorrectly estimated. The case for Scroogenomics is poor. This paper provides a Keynesian celebration of Christmas from several angles.

2   Origins of Christmas

While some have asked whether the Fed caused Christmas, its origin are far older (Carlstrom and Gamber, 1990). The European celebration of Christmas evolved as an amalgamation of rituals related to the Roman festival of Saturnalia and the Germanic festival of Yule (Sokolova, 2020). Indeed, this Christian holiday which is ubiquitous today was often attacked for its pagan roots or anti-Christian practices (Nothaft, 2011). Saturnalia was celebrated around the winter Solistice, and was a bacchanal closer to modern celebrations of Carnaval than Christmas. The festivities included sacrifices, gift-giving, as well as a reversal of Roman social hierarchies, with slaves being served by their masters (Fleischman, 2013). Yule was a Germanic holiday, also celebrated around the solstice, and also involving animal sacrifice, and a feast of meat. The festival included toasts to Odin and the other gods, as well as the King (Miles, 1976).

The feasting on meat can be found in other holiday traditions. The largest holiday for Muslims, Eid Al-Adha, honors the willingness of Ibrahim to sacrifice his son, Ismail, based on the will of Allah. Due to his faith, the Almighty provided a lamb instead to sacrifice rather than his son. The slaughter of an animal is central to the holiday, and the meat is split into three portions, devoted to family, friends and relatives, and for the indigent, respectively (Ahmed, 2020). Given that livestock must be fed when alive and return

the favor when they are not, "savings" over the winter would be wasteful, and having a feast when nutrition and calories were most important serves a clear role. This helps to explain the serving of meat for Christmas dinner. In the limited diets of a Malthusian world, this institution provided essential sustenance in a frigid climate. The feast would also lift one's spirit in the darkness of the winter solstice. With expensive and limited options for lighting at night, seasonal depression would have taken its toll in these dark months, and not just the economic kind.

The *Fable of the Bees* scandalized Europe when it came out (Mandeville, 1724). In this poem, Mandeville flipped traditional morality on its head, arguing that vices were in fact virtues, in an inversion similar to Saturnalia's inversions. Indeed, the second half of the title is: "Private vices, public benefits." Prosperity for the bees was based on the working of all sorts of vices and the self-interest of the bees. When the virtues of thrift and abstinence were introduced, disaster resulted, as economic exchange collapsed, and economic destitution resulted (Lamprecht, 1926; Chalk, 1966).

We can see this reversal of virtues and vices in a Christmas classic: *A Christmas Carol* (Dickens, 2003). The character flaws of Ebenezer Scrooge are often misinterpreted however. His sin is not avarice or greed, but miserliness. He does not enjoy consuming his vast wealth, he enjoys the act of saving, e.g. not spending. Dickens gets it exactly right that this is the true sin on Christmas. The supposed virtue of thrift is, in actuality, a vice. Ebenezer Scrooge refuses to help Tiny Tim, and he hounds his creditors on Christmas. But a merchant like Scrooge with a Cornhill warehouse in the center of London's commercial heart should have known better. Tiny Tim's death will not help Scrooge's business in the slightest, and Scrooge opening his wallet to provide for Tiny Tim's medical care will mean more sales from a warehouse like Scrooge's. The debtors Scrooge is hounding will have to cut back elsewhere, further cutting into sales. Better to give them a reprieve for Christmas, so they can visit the Christmas markets near Cornhill. As with the Bees, a gluttonous Scrooge would be more virtuous, bring joy to others and prosperity to the merchants of Cornhill for the Christmas season.

Agriculture in Europe is seasonal, and there is little work to be done in the winter in a time before inexpensive and convenient lighting sources. This slack makes for a welcome time for new expenditure. While the elves are mythical, there is real work to be done in Santa's workshops, and none to be found in the fields. The Christmas markets must be staffed, and this comes at a time when there is no diversion of effort from raising crops. Given the high degree of slack, the multiplier effect would have been significant, providing plenty of work and income to make it through the long winter months. Without any new crops until spring, the threat of starvation in the midst of cold loomed large, but a new round of Yuletide spending

would provide new income to purchase what was needed over the winter. The positive multiplier effect would certainly outweigh any deadweight loss here, especially given the small range of potential gifts that would be given before the explosion of gift types in the modern era.

Simple cash transfers would have negligible effects on spending, and would still leave those who were unlucky to have insufficient income to make it through the winter to misery, or worse. Indeed, as we know from Keynes's paradox of thrift, rather than benefiting from consumer sovereignty and the the ability to choose to save the cash, overall savings and wealth may be higher due to Christmas spending (Keynes, 1936). Given the large degree of slack in the winter months in an agricultural economy, Christmas spending would have been a widow's cruse, ensuring a warm and jolly winter, like the plump Santa Claus, rather than a cold and frail winter of Jack Frost (Keynes, 1930). Just like the Grinch's heart, the economy too can grow three sizes that day through the miracle of Christmas (Seuss, 1957).

3 Christmas and the business cycle

While we no longer have a predominantly agricultural economy, the spending boost to the economy from Christmas still persists. But how big is the Keynesian multiplier associated with Christmas spending? Waldfogel (1993) estimates that the deadweight losses of Christmas gifts are one-tenth to one-third of the value of the gifts. That means that the Keynesian multiplier must simply exceed 0.1-0.33, which is on the low end of multiplier estimates, especially given the economic slack prevailing at that time of year. Christmas provides a significant economic boost. Barsky and Miron (1989) provide data for 1948-1985. The third quarter of the year sees a declines in GNP of a half percent, in consumption of almost a percent, of which durables see a 5% decline. By contrast, the fourth quarter, with much worse weather, sees increases in GNP of 5% and Consumption of 7% , with the subcomponent of durables rising 13 %, and non-durables rising 12%. Despite the adverse, dreary weather, economic activity surges around Christmastime, allowing for a seasonal pattern similar to the second quarter, when the weather is mild and pleasant, and workers have not yet left for summer vacations.

Indeed, the use of seasonal adjustment obscures the centrality of Christmas to economic fluctuations (Ghysels, 1994). Every December, the American economy sees a massive economic boom, while the rest of the winter sees a major slump, with low utilization of labor and capital (Braun and Evans, 1998). While this is not acknowledged by the national accounts, these seasonal fluctuations are important for overall economic fluctuations, accounting for about half of over business cycle fluctuations (Wen, 2002). The Christmas season

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is central to business cycle (Barsky and Miron, 1989). This is true in both the Northern and Southern hemispheres, and affects countries where Christians are a minority of the population and Christmas is generally not celebrated (Miron and Beaulieu, 1992).[1]

3.1 International Comparisons

Table 1: Average monthly retail sales growth

Month	USA	Japan	China	Turkey	Israel
1	-23.6	-18.8	-8.1	-28.7	-8.9
2	-0.3	-5.7	-4.4	-0.1	-5.5
3	13.7	18.5	-3.9	17.7	*16.0*
4	-1.5	-7.3	-1.1	1.0	-3.1
5	5.9	-1.8	5.2	7.7	-0.1
6	-2.3	-0.3	1.0	2.9	-1.3
7	-0.1	6.7	-1.2	0.6	4.2
8	2.5	-7.3	1.8	0.8	5.3
9	-6.5	-1.4	6.9	1.9	-3.2
10	3.4	3.0	6.4	-0.7	-3.4
11	2.1	1.1	0.6	-0.4	1.1
12	**17.0**	**20.8**	**12.1**	**19.3**	**8.9**

Notes: December growth in retail sales are bolded. Data through 2022, beginning in 2005 for Turkey, 1995 for Israel, 1993 for China, and 1992 for the USA.

Retail sales are a key way that Christmas spending on gifts affects the economy. Retail sales were estimated in 2005 to increase by $6.50 per day in the Christmas shopping season (Basker, 2005). The behavior of retail sales around Christmas can be compared for the USA, Japan, China, Turkey, and Israel by looking at the average monthly percent growth in non-seasonally adjusted retail sales. This is shown in Table 1. The USA has a strong Christmas effect, with most of the population celebrating the holiday. Do other similarly industrialized countries that do not celebrate Christmas to the same degree see the same seasonal economic patterns? Japan sees a strong spike in retail sales in December. Despite not being a predominately Christian country, Christmas is celebrated in Japan.

Turkey has a population that, generally, does not celebrate Christmas, as the Turkish population is almost entirely Muslim. Nevertheless, Turkey does see a spike in retail sales in December, though a smaller one than other similar countries where Christmas is more widely celebrated.[2] These spikes are due to a combination

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[1]The dominance of this European holiday for the global economy is telling in terms of the economic and cultural power that Europe and its colonial offshoots exert across the globe.

[2]Islam follows a lunar rather than a solar calendar, which means that Muslim holidays will be held at different times of the

of some celebrations of Christmas, as well as an integration of these economies with the economies of the North Atlantic/Europe, where Christmas is widely celebrated. Even if Christmas is not celebrated in these countries, exports to countries where Christmas is celebrated would increase local incomes, which would translate into local retail sales following a Keynesian multiplier process.

There is a significant spike in retail sales in December in China too, reflecting celebrations of Christmas, increased export sales, as well as some gift purchases before the Lunar New Year. The industrialized economy that has the weakest Christmas effect is where Jesus of Nazareth was born. Israel's retail sales dummies have the lowest Christmas effect of any developed country. Given that Christmas is little celebrated, and as a result Hannukah is less celebrated in Israel relative to the USA, this is perhaps unsurprising (Abramitzky et al., 2010). March sees a bigger effect in Israel, which can be seen in other countries as the weather improves, with a Passover effect in Israel likely explaining some of this effect too.

3.2 Multiplier calculations

Table 2: Deadweight loss vs. Keynesian multipliers

Retail Multiplier	Average	Christmas (Q4)	Q4 net of Q1
Level	3.1	4.3	1.6
Ratio to Waldfogel (2013) DWL upper-bound	9.2	13.0	4.7
Ratio to Waldfogel (2013) DWL lower-bound	30.8	43.3	15.5

Notes: The multiplier is calculated as ratio of the change in quarterly GDP (NSA) and quarterly retail sales (NSA)

The main estimates of the multipler come from the USA. While we might expect that the first quarter would perhaps see a smaller pullback without Christmas, the multiplier on economic activity in this slack period is certainly larger than 0.5, and there's every reason to believe that Q4 would look more like Q1, which is similarly cold and dreary, and that Q4 would decline from Q3. Retail sales data is where one can see the Christmas effect most clearly, as most gift purchases are sold at retail. Unfortunately, there is no real series which is not seasonally adjusted, so I use nominal data here. The relevant Keynesian multiplier would be calculated using nominal GDP. More specifically, the multiplier is the ratio of the change in quarterly GDP and quarterly retail sales, both of which are not seasonally adjusted. Both series are available starting in 1992Q2, and I end the series in 2019Q4 to avoid the effects of the COVID pandemic. This results in a Keynesian multiplier of a bit above 3, so that for each dollar increase in retail sales over the quarter, GDP increases by 3 times as much. If we focus just on Q4, the quarter including Christmas, the multiplier is about

year on a solar calendar. This makes seasonal adjustment difficult, yet another reason to avoid seasonal adjustment here (Alper et al., 2004).

4 and a third. The larger multiplier for Christmas is consistent with the argument that slack in this period increases the multiplier so that retail sales in the fourth quarter have a larger spillover effect in creating more income through increased spending.

One might argue that this multiplier works in both directions, both up and down, and that the decline in retail sales in Q1, immediately after Christmas when economic activity recedes, will simply offset the Christmas effect. However, the multiplier is smaller than average in Q1, by about 2 and three quarters. Even subtracting the Q1 multiplier from the Q4 multiplier, a net multiplier of 1.6 is obtained. Given that Waldfogel's deadweight losses are at most one third, the multiplier estimate for Christmas is about 13 times larger than the upper-bound for the deadweight losses estimated by Waldfogel, more than an order of magnitude larger. For the lower bound that Waldfogel found, of about 10%, the multiplier effect is over 43 times larger. This can be seen in Table 2. Even the net multiplier is about 5-15 times larger than Waldfogel's estimates of the costs to gift-giving. Even if we assume there is some substitution of retail sales from Q1 and that not all of the effect of Christmas comes from gift-giving, the Keynesian multiplier effect almost certainly more than offsets the deadweight loss effect. Even if we value gifts less than the cash equivalent, the institution of gift-giving at Christmastime increases our income by a much larger amount, leaving us much better off by the institution of Christmas gift-giving. The macroeconomic effects outweigh the microeconomic effects here, as they often do. As James Tobin famously said, "it takes a heap of Harberger triangles to fill an Okun Gap" (Tobin, 1977, p. 486). In the case of Christmas, filling stocking can help fill the seasonal Okun gap around the winter solstice.

4   A simple model of household gift-giving

Next, a model of household gift-giving is outlined. We start with a simple case where everyone gives a single present which costs p to every other member of their family and does not give a gift to themselves or to any non-family members. The number of gifts exchanged this way in a family of size n will be $n(n-1)$. Quite simply, each family member, of which there are n, exchanges gifts with all other members but themselves, of which there are (n-1). This can be seen for the cases of 2 parent households, one without children and one with 2 children, in Figure 1 The value of presents exchanged will then be $pn(n-1)$.

Take the case of a nuclear family with a mother and a father. We will not consider the case of divorce or of death of the parents and child's age, though parents will eventually die, their children will become parents themselves, and grandchildren will be born. Taking a simple case, assume all the children have been born.

Figure 1: Example of gift-giving
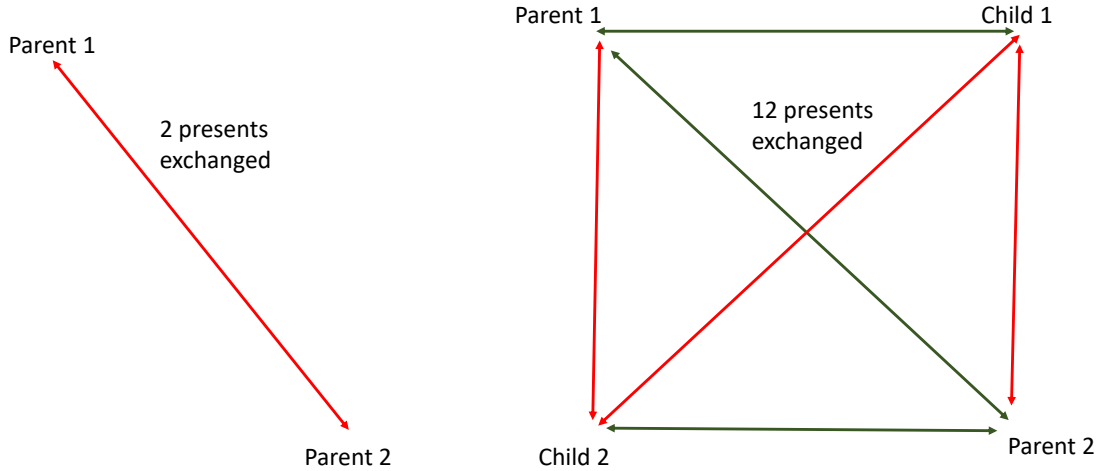
Notes: Number of gifts given is n(n-1), where n is the number of household members.

If we take the fertility rate per woman to be f then each family has f children and the total population of each family is $2 + f$. This implies the number of gifts exchanged is $(2 + f)(1 + f) = 2 + 3f + f^2$.[3] The additional presents exchanged at a higher fertility rate f_2 relative to a lower fertility rate f_1 is

$$(2 + 3f_2 + f_2^2) - (2 + 3f_1 + f_1^2) = 3(f_2 - f_1) + (f_2^2 - f_1^2) = 3(f_2 - f_1) + (f_2 + f_1)(f_2 - f_1) =$$

$$(3 + f_2 + f_1)(f_2 - f_1) \tag{1}$$

To take a specific case, if the number of children drops from 3 to 2, then number of gifts exchanged falls from 20 to 12, and if the number of children falls from 2 to 1, the number of gifts exchanged falls in half, from 12 to 6. With no children, only 2 gifts are exchanged.

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[3]In the case of divorce where one parent remains with the children at Christmas, then the number of gifts exchanged is simply $f^2 + f$.

This assumes that only 2 generations live under one roof. However, many societies have 3 generations living under one roof, with grandparents living with their children and their grandchildren. Assuming a constant fertility rate and that a child is as likely to live in their spouses household as they are to live in their own household, we obtain family sizes of $2 + f + \frac{f^2}{2}$. Here, if each woman has 2 children, family sizes are 6, while if each woman have 4 children, family sizes are 14, reflecting a population pyramid with a wider base. This magnifies the effect of an increase in fertility. We could also loosen the assumption that the fertility rate is the same in each generation, with the fertility rate in the parents generation being f_p and the fertility rate for the grandchildren's generation being f_g, we obtain:

$$2 + f_p + f_g \frac{f_p}{2} \tag{2}$$

This implies that the number of presents exchanged in 3-generation households is $(2 + f_p + f_g \frac{f_p}{2})(1 + f_p + f_g \frac{f_p}{2})$.

5   Declining population growth, secular stagnation, and Christmas

Alvin Hansen famously proposed his idea of secular stagnation in the late 1930s, arguing that the US economy was stuck in a low-growth equilibrium, that would require large government expenditures to escape (Hansen, 1938). Less well known is the centrality of declining population growth to Hansen's views of secular stagnation (Hansen, 1939). As the American frontier was closed, immigration had been largely ended, and fertility rates were falling, the requirement for capital accumulation were much reduced since there were many fewer Americans that needed new machines and factories when they went to work, and were homes and apartments when they returned home at the end of the day. This reduced need for investment would, *pari passu*, slow the American GDP growth rate, contributing to secular stagnation.

This paper studies a similar effect of population on declining spending on Christmas spending. It is customary for each member of a household to give a gift to each other member of a household, especially to children, who would receive multiple gifts if possible. As fertility has declined in the United States and household sizes have gotten smaller, the number of Christmas presents that one needs to give has shrunk significantly. Indeed, the baby Jesus received three presents from the visiting Magi, of whom there were also 3. While previous generations would have had many more than three people giving them gifts, more and more American children will receive gifts from fewer than three others on Christmas.[4] Tremblay and Tremblay

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[4]A similar mechanism would be at play in American families who celebrate Hannukah.

(1995) showed that children are central to the Christmas holiday, both theoretically and empirically.

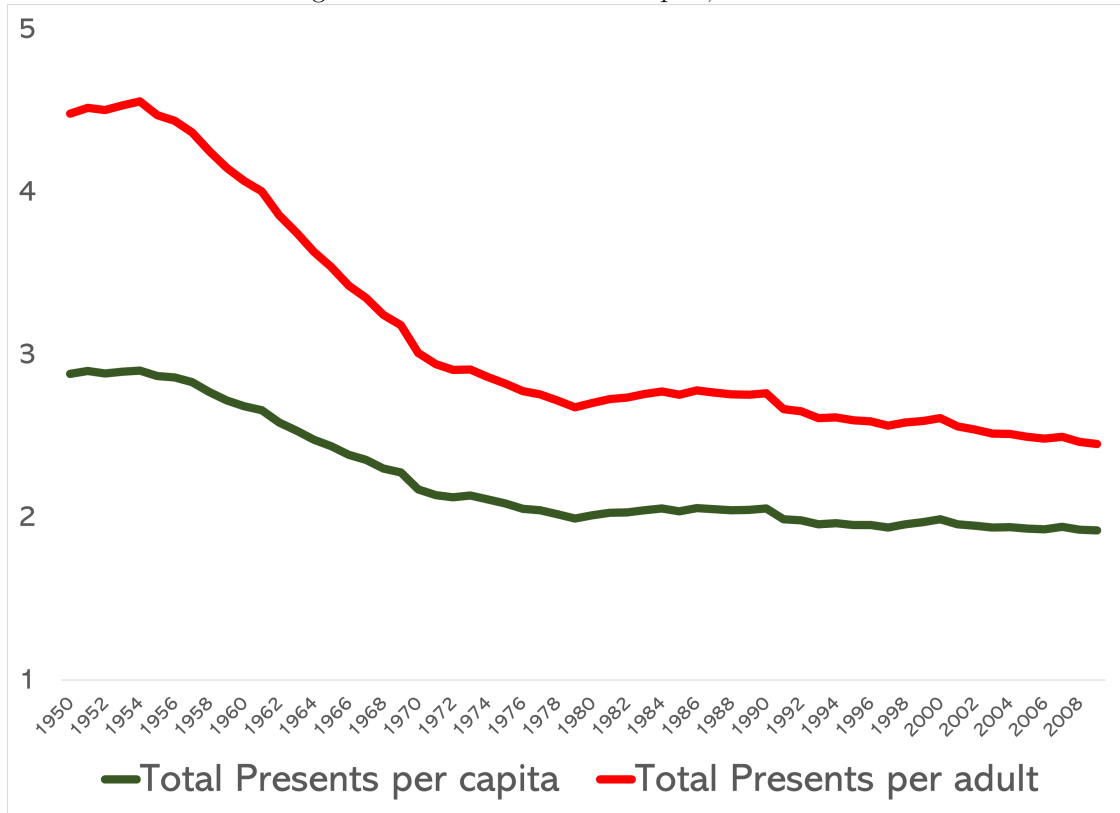Figure 2: Total Presents Per Capita, Method I
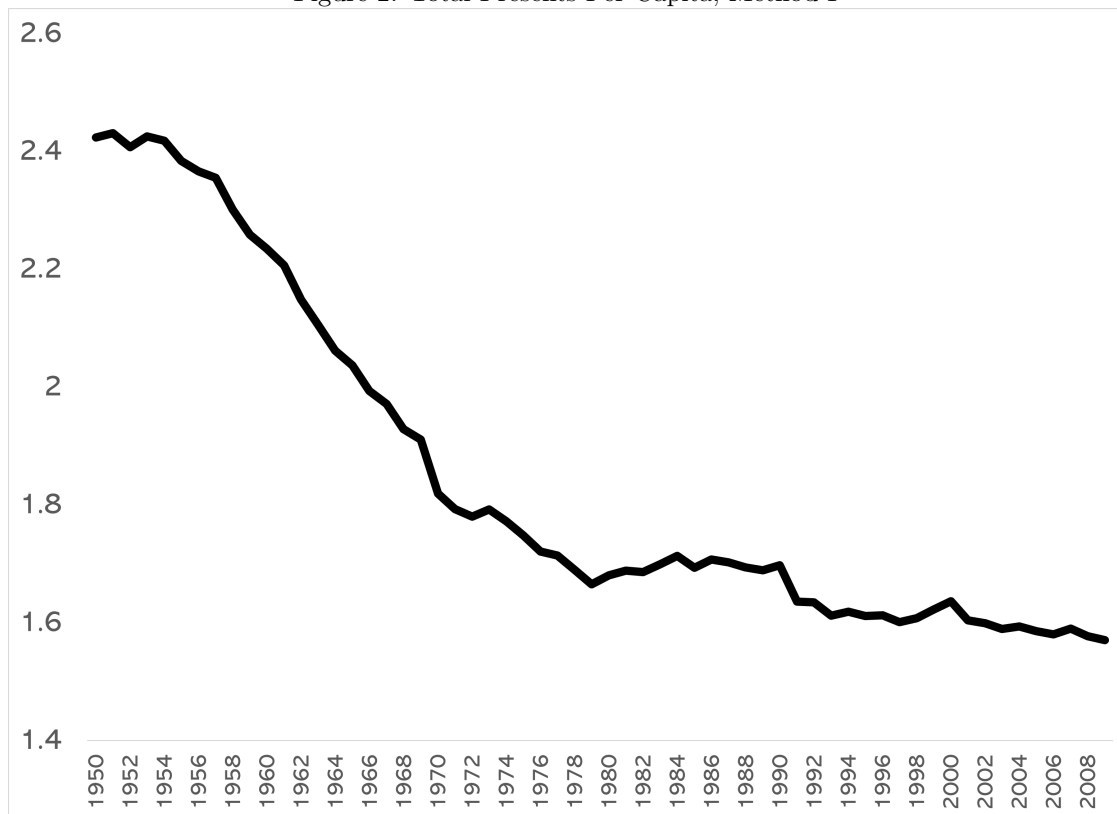
Notes: See text for method of calculation. Each household member gives one present to each other household member for Christmas.

Waldfogel (2022) tests for the income elasticity of gift giving in the United States, and argues that gift-giving has become an inferior good since 2000. However, Waldfogel did not consider the effect of household size on Christmas gift-giving, instead focusing on aggregates. As household size has fallen since the 1960s, the number of presents given would have fallen as well, likely moving the date when gift-giving became an inferior good back earlier in time. In the calculations that follow, I will assume that each household member is expected to give one present to each other household member, but the same calculations would apply if multiple presents are given, just scaled by the number of presents given. This implicitly assumes that every American celebrates Christmas, which likely understates the decline in Christmas gift-giving, as the United States has become more religiously diverse over time. All figures are from the Federal Reserve Economic Database or the Census Bureau.[5] First, the number of households is divided by the total US population.

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[5]Total U.S. Population is Series POPTOTUSA647NWDB, Total Households are from Series TTLHH, and the Number of Children (17 years old and younger) is from the Census Bureau Current Population Reports.

The number of household members per household is then entered into the formula for presents per household of n(n-1), yielding presents per household. This figure is then multiplied by the number of households to obtain total presents, which is then divided by total population to obtain total presents per capita. This series is plotted in Figure 2.

Figure 3: Total Presents Per Capita, Method II

Notes: See text for method of calculation. Each household member gives one present to each other household member for Christmas.

There is a better method, however. We know the number of children who are under 18 in the USA, so by subtracting the number of children from the total number of people, we obtain the total number of adults. We also know the number of households with children, so we can calculate the number of children per household that way. I will assume that the number of adults per household is the same across all households, and so will divide the number of adults by the total number of households. For households without children (the difference between total households and families with children), they will just have the average number of adults per household in them. For those with children, they have the sum of average children and average adults per household. Then the standard formula for family gift giving, n(n-1), is applied to each type of family. Then the number of presents per household for each household type is multiplied by the number of

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those households, and both are summed to get total presents in the US. This is then divided by the total population to get total presents per capita, or by total adults, to get total present per adult.

Both methods are fairly similar, and show a declining number of expected presents per capita. The drop is fastest from 1950 to about 1970, with a slower decline after 1980. This means that even if spending per present is stable in real terms, the overall value of Christmas gift spending will tend to fall. This will bias estimates of the income elasticity of gift giving if this effect is not taken in to account, as it is not in Waldfogel (2022). More importantly, this will create a secular trend towards less Christmas spending, consistent with Alvin Hansen's theory of secular stagnation driven by declining population growth.

6   Conclusion

Waldfogel is a series of papers and books has made the case for Scroogenomics, that the practice of gift-giving around Christmas makes us worse off. This paper has made the case for the benefits of gift-giving on Keynesian grounds. While there can be a deadweight loss from gift-giving, it is more than offset by the stimulative effects of this spending on the economy. While for every $1 of spending, there is a deadweight loss of $0.10 to $0.33, national income rises by $1.55-$4.33 from the Keynesian multiplier, so overall we are much better off due to Christmas spending. However, this effect is tending to shrink over time due to declining population growth, consistent with Alvin Hansen's formulation of secular stagnation. Waldfogel also does not correct for the effects of declining family size in his estimates of the income elasticities of gift-giving. This would tend to reduce the number of gifts given in a non-linear way as families shrink, independently of changing income-elasticities, thus overstating the declining magnitude of the income-expenditure elasticity.

But a more serious issue looms for Scroogenomics. Given that the gift-giving of Christmas is focused on children, the idea that paternalism creates welfare losses does not apply in the same way as it would for adults. Almost all of the spending of children is made by their parents, especially when they are young when Christmas is most important. The idea of consumer sovereignty applies to adults, but this idea that children are sovereign is alien to most of us (Persky, 1993). The idea that children would be better off to spending money as they see fit is incongruous with the actual choices made by parents, and so we must believe that making choices about spending on their behalf is welfare improving and that any deadweight-loss effects are outweighted by other factors. In any case, parents can just peak at their children's Christmas lists, and get a very good sense of their preferences. If the deadweight loss of Christmas gift-giving were really so serious, we should see more people making Christmas lists. Setting this aside, when we add in the other Keynesian

effects of gift-giving, the case for Christmas gift-giving becomes iron-clad, even if the effect is waning over time. The weather outside may be frightful, but hang your stockings with care, Santa Claus is bringing prosperity for Christmas!

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