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The Impact of Gifts and Bequests on Aggregate Saving and Capital Accumulation

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The role of intergenerational transfers in aggregate wealth accumulation has received a substantial amount of attention and generated considerable controversy. The modern literature on this subject begins with the classic paper by Laurence Kotlikoff and Lawrence Summers.¹ In their own words, their paper has two goals: “The first is simply to answer an accounting question: namely can life-cycle savings alone account for the U.S. capital stock? The second goal is to answer an economic question: If, *ceteris paribus*, there were no intergenerational transfers, how large would the U.S. capital stock be? That is, if all such transfers were taxed in a confiscatory way, by how much would capital accumulation be reduced?”

Kotlikoff and Summers conclude that what they call “life-cycle saving” cannot account for more than 20 percent of U.S. capital formation, and intergenerational transfers therefore play a dominant role in wealth accumulation, accounting for 80 percent or more of observed wealth.² They also estimate that each dollar of reduced private intergenerational transfers due to tax policy reduces aggregate wealth in the steady state by 70 cents. Thus their

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1. Kotlikoff and Summers (1981, p. 707).

2. Kotlikoff and Summers (1981).

estimates imply that if all transfers were abolished, aggregate wealth would fall by more than half.

Subsequent to Kotlikoff and Summers, a sizable literature has attempted to address various aspects of these issues. Franco Modigliani sharply criticizes the Kotlikoff and Summers methodology and conclusions.³ Alan Blinder, Denis Kessler, and André Masson provide insightful critiques of the debate.⁴ As discussed below, a variety of other researchers propose modifications and extensions of the findings.

At the most general level, this literature is aimed at two key questions: What motivates people to accumulate wealth and give transfers? What are the effects of government policies on wealth accumulation? Our conclusions regarding this literature are somewhat mixed: On the one hand, it is difficult to quarrel with Kotlikoff and Summers's conclusions that intergenerational transfers play an important role in wealth accumulation and need to be studied more carefully. It is also clear that the methodology and findings in Kotlikoff and Summers deserve credit for sparking interest in these broad and important issues and for spurring a research growth industry. Researchers have made significant progress in the past twenty years in understanding both the motivations for saving and the effects of public policies on wealth accumulation. Other papers in this volume attest to this finding.

But it is also the case that the methodology developed by Kotlikoff and Summers and their estimates, as well as the estimates in the subsequent literature on transfers and aggregate wealth accumulation, provide only limited guidance on the two key questions: First, estimates of the magnitude of "life-cycle wealth" or its counterpart, "transfer wealth," in overall wealth have proven difficult to pin down empirically. Second, even if transfer wealth and life-cycle wealth were known with precision, that information would not be sufficient to distinguish among the different motives for why people accumulate wealth. Third, the effects of government policies regarding wealth accumulation, for example estate tax policy, depend in large part on the *motives* for transfers on the margin.⁵ Thus estimates of the size of aggregate transfer wealth and life-cycle wealth are useful in motivating and framing the relevant questions, but by themselves they do not provide sufficient information to address the motivations for wealth transfers or the effects of government policies on wealth accumulation.

The paper is organized as follows: In the first section, we review the original

3. Modigliani (1988a, 1988b).

4. Blinder (1988); Kessler and Masson (1989).

5. Kaplow (2001); Gale and Perozek (2001).

Kotlikoff and Summers paper. Next, we discuss empirical estimates of life-cycle wealth and transfer wealth. The third section discusses the extent to which those estimates help answer the two key questions regarding motivations for saving and the impacts of public policies, followed by a short conclusion.

Conceptual Framework

Kotlikoff and Summers provide a two-part theoretical framework for analyzing the importance of transfers for wealth accumulation.⁶ The first part of the framework defines life-cycle wealth and transfer wealth. The second part estimates the impact of transfers on total wealth accumulation.

Definitions of Life-Cycle and Transfer Wealth

The level of net worth held by individuals in an economy at a point in time can be decomposed into the difference between sources of wealth (earnings and gifts received) and uses of wealth (consumption and gifts given). This accounting identity can be expressed as:

$$W_s = E_s + I_s - C_s - B_s, \quad (1)$$

where W_s = aggregate net worth at time s , E_s = the accumulated value of lifetime earnings by individuals alive at time s , I_s = the accumulated value of lifetime gifts and inheritances received by people alive at time s , C_s = the accumulated value of lifetime consumption by individuals alive at time s , and B_s = the accumulated value of gifts and lifetime bequests given by people alive at time s .⁷

By combining a particular source of wealth with a particular use of wealth, Kotlikoff and Summers define two variables: “aggregate life-cycle wealth” and “aggregate transfer wealth.” Aggregate life-cycle wealth is the net accumulation of earnings in excess of consumption to date for all people alive at time s . Dropping the time subscript, life-cycle wealth can be expressed as:

$$L = E - C. \quad (2)$$

Aggregate transfer wealth is defined as the accumulated value of net transfers received by all people alive at time s :

6. Kotlikoff and Summers (1981).

7. Accumulation occurs at market rates of return. E , I , C , B , and the rate of accumulation should be considered in after-tax terms. Transfers from public agencies or private charities and donations to private charities could easily be added without changing the results. I and B differ only because of transfers in earlier periods between people who are alive at time s and people who are not alive at time s .

$$T = I - B. \quad (3)$$

Substituting the definitions in equation 2 and equation 3 into equation 1, aggregate net worth can be expressed as the sum of life-cycle wealth, L , and transfer wealth, T :

$$W = L + T. \quad (4)$$

Equation 4 shows that all wealth existing in an economy at a given point in time can, in an accounting sense, be described either as life-cycle wealth—an accumulated excess of wages over consumption—or transfer wealth, an accumulated excess of transfers received over transfers given among people who are currently alive. As discussed below, Kotlikoff and Summers estimate that life-cycle wealth is at most 20 percent of net worth.

Determining the Impact of Changes in Transfers on Wealth

To evaluate the economic impact of changes in transfers, Kotlikoff and Summers note that using equations 2 and 4, the expression for wealth can be rewritten as the sum of transfer wealth and lifetime earnings less consumption:

$$W = T + E - C. \quad (5)$$

Taking derivatives with respect to T indicates how total wealth will respond to changes in transfer wealth:

$$\frac{dW}{dT} = 1 + \frac{dE}{dT} - \frac{dC}{dT}. \quad (6)$$

Equation 6 says that a one-dollar reduction in transfer wealth affects net worth directly by means of the reduction in transfer wealth, and indirectly by means of the effect of lower transfer wealth on earnings and consumption.⁸ Dividing each side of equation 6 by the share of transfer wealth in total wealth yields the elasticity of total wealth with respect to changes in transfer wealth:

$$\frac{T}{W} \frac{dW}{dT} = \left(1 + \frac{dE}{dT} - \frac{dC}{dT} \right) \frac{T}{W}. \quad (7)$$

8. Earnings are the product of wages times hours worked. Kotlikoff and Summers assume that wages are constant, and hence interpret dE/dT as the negative of the change in leisure induced by transfers.

The elasticity shows the percentage change in overall wealth from a given percentage change in transfer wealth. It is equal to the product of the effect of a one-dollar change in transfer wealth on net worth, as in equation 6, and the share of transfer wealth in overall wealth.

To calculate the elasticity requires estimates of T , W , dC/dT and dE/dT . Estimates of T and W are discussed in the next section. To derive estimates of the effect of transfer wealth on consumption (dC/dT) and on earnings (dE/dT), Kotlikoff and Summers assume that households' utility is separable between consumption and leisure on the one hand, and intergenerational transfers on the other. This means that changes in households' preferences or in taxes on transfers that change the level of transfer wealth, but do not affect the relative price of consumption and leisure, affect consumption and leisure only through income effects. In the model, the income effect depends on the difference between the interest rate and growth rate. If the interest rate and growth rate are equal, the income effect is zero. If the interest rate exceeds (falls short of) the growth rate, a reduction in transfer wealth reduces (raises) consumption.⁹

Using equation 6, the assumption that the interest rate is 1 percentage point higher than the growth rate, and a particular parameterization of a life-cycle model, Kotlikoff and Summers estimate that the change in wealth from a one-dollar change in transfer wealth (dW/dT) is about 70 cents. Combined with an estimate that the share of transfer wealth in overall wealth, T/W , is at least 0.8, their findings imply that abolishing all transfers by means of taxation would reduce aggregate wealth by at least 56 percent in the long run.¹⁰

Estimates of Life-Cycle Wealth and Transfer Wealth

If aggregate wealth is known, then an estimate of life-cycle wealth is sufficient to establish the size of transfer wealth and vice versa. However, because of data problems, estimates of both life-cycle wealth and transfer wealth separately can be informative.

9. In a steady state economy growing at rate g , a household that receives a dollar in transfers when young, must give $\$(1+g)^n$ in transfers n years later. If the interest rate exceeds the growth rate, the household can consume some of the investment income on the transfer it receives, and still have sufficient accumulated wealth to make the required transfer n years later. If the interest rate is less than the growth rate, the household must dip into its wage income to supplement the transfer it receives in order to make the required transfer n years later.

10. Kotlikoff and Summers (1981).

Estimates of Life-Cycle Wealth

Kotlikoff and Summers provide estimates of life-cycle wealth using data on average earnings and consumption by age across different birth cohorts in the United States.¹¹ They estimate that life-cycle wealth accounts for at most 20 percent and under some assumptions less than 0 percent of U.S. net worth.¹² Modigliani adjusts the Kotlikoff and Summers calculations for a number of factors, and calculates that 80 percent or more of net worth can be explained by life-cycle saving.¹³ In particular, Modigliani argues that parents' payments for college should not be counted as part of transfer wealth, that interest accrued on previous transfers received should be attributed to life-cycle wealth, not transfer wealth, and that Kotlikoff and Summers did not adequately measure the consumption of durable goods. Betsy Buttrill White and Michael Darby reach conclusions similar to Kotlikoff and Summers, while Albert Ando and Arthur Kennickell estimate life-cycle wealth to be between 60 percent and 85 percent of net worth.¹⁴

All of these direct estimates of life-cycle wealth are sensitive to a variety of assumptions concerning the ages of retirement and death, the shape and stability over time of age-earnings and age-consumption profiles and relative wages, and the definition of durable goods as consumption or investment.¹⁵ In principle, it would now be possible to obtain better estimates of life-cycle consumption and wages by cohort because of the increase in data availability over the last twenty years. However, estimating life-cycle wealth with improved data still requires judgments about whether parental payments for higher education are considered a transfer to an adult household and hence included in transfer wealth, or an expenditure on a dependent child, and excluded from transfer wealth, and on whether interest earned on transfers is considered part of life-cycle wealth or transfer wealth. But in the absence of a coherent economic interpretation of life-cycle wealth and transfer wealth, such a judgment is vacuous. As Blinder notes, arguing over accounting definitions is probably not productive.¹⁶

11. Kotlikoff and Summers (1981).

12. Life-cycle wealth accounts for less than zero percent of observed wealth when the accumulated consumption of cohorts currently alive exceeds the cumulative wages of cohorts currently alive.

13. Modigliani (1988a, 1988b).

14. White (1978); Darby (1979); Ando and Kennickell (1987).

15. Blinder (1988).

16. Blinder (1988).

Estimates of Transfers Received

A second approach taken in the literature has compared survey respondents' net worth (W) to the amount of transfers they have received to date (I) or has used survey respondents' reports on the share of their wealth that comes from transfers received. These studies do not estimate transfer wealth, which is given by transfers received less ($I - B$). These studies generally suggest that the cumulative gross value of transfers received compose less than 20 percent of wealth.¹⁷ However, these estimates face several problems: First, they focus almost exclusively on wealth received through inheritances, and ignore *inter vivos* transfers. Second, transfers received are notoriously underreported relative to transfers given.¹⁸ Third, it is unclear how respondents define transfers, and whether they adjust the value of transfers received in earlier years to reflect the present value of these transfers.¹⁹

Estimates of Transfer Wealth

In their estimate of transfer wealth, Kotlikoff and Summers used admittedly limited data and a series of strong assumptions, and found the share of transfer wealth in total wealth was about 50 percent. This is lower than the share implied by their finding that life-cycle wealth is between 0 and 20 percent of total wealth. They note that the transfer data are poorly measured and are undoubtedly underreported, which indicates that the share of transfer wealth should be higher than 50 percent.

As Kessler and Masson note, and foreshadowing the discussion in the next section, some transfers are likely to be unintended and tend to obscure the findings of direct estimates of transfer wealth.²⁰ Treating bequests as departures from the life-cycle model would be appropriate if the bequest had been intended. However, bequests can be accidental rather than intended. In a world with uncertain lifespans and imperfect annuity markets, life-cycle savers—that is, those who intend to die with nothing in their pockets—will sometimes die earlier than expected, and end up leaving bequests.²¹ Thus including the contribution of bequests to net worth is perfectly appropriate for measuring the proportion of wealth derived from transfers, but may *not* be appropriate for determining whether the life-cycle model adequately describes aggregate wealth accumulation.

17. Modigliani (1988b); Hurd and Mundaca (1989).

18. For a discussion, see Gale and Scholz (1994).

19. Kessler (1989).

20. Kessler and Masson (1989).

21. Davies (1981); Abel (1985); Hurd (1987).

William Gale and John Karl Scholz address this concern, and provide the first microeconomic estimates of aggregate transfer wealth, by distinguishing intended transfers—such as gifts from parents to adult children living in a separate household—from possibly unintended transfers.²² Using the 1983 and 1986 Surveys of Consumer Finances, they find that intended *inter-vivos* transfers are the source of at least 20 percent of aggregate wealth, and that transfers are highly concentrated among wealthy families. Actual wealth due to all intended transfers is likely to be higher, since bequests accounted for about 30 percent of net worth in their estimates, and at least some bequests are likely to be intended.

Jeffrey Brown and Scott Weisbenner use data from the 1998 Survey of Consumer Finances and find that transfer wealth accounts for approximately one-fifth to one-quarter of aggregate wealth and is highly concentrated.²³ These estimates include both bequests and *inter-vivos* transfers. One reason these results differ from Gale and Scholz is the substantial increase in equity markets and overall net worth between 1986 and 1998.

Simulation Estimates of Life-Cycle Wealth and Transfer Wealth

Another strand of the literature is based on simulation models of the behavior of overlapping generations.²⁴ This approach is useful for showing, in a particular model, how the shares of life-cycle and transfer wealth in total wealth depend on assumptions concerning behavioral elasticities, credit market constraints, and other factors. However, these models have generated such a wide range of estimates that simulations have done little to reduce the range of plausible estimates.

Discussion

The previous section shows that estimates of life-cycle and transfer wealth vary widely. For the rest of the paper, however, we assume that aggregate values of life-cycle and transfer wealth are known with certainty. The analysis below asks how economists' understanding of the real world would be changed if the true values of life-cycle and transfer wealth were known, or if their true values changed. We focus on three aspects of this question: What is

22. Gale and Scholz (1994).

23. Brown and Weisbenner (2002).

24. Andre Masson (1986); John Laitner. 1990. "Random Earnings Differences, Lifetime Liquidity Constraints, and Altruistic Intergenerational Transfers." University of Michigan (October 12). Mimeo; Lord and Rangazas (1991).

the economic content of life-cycle and transfer wealth? What does knowledge of life-cycle and transfer wealth imply about motives for wealth accumulation and the giving of transfers? What does knowledge of life-cycle and transfer wealth imply about the effects of government policy?

The Economic Content of Life-Cycle Wealth and Transfer Wealth

Although the accounting definitions of life-cycle and transfer wealth may be clear, their economic content is not. The definitions of life-cycle wealth in equation 2 and transfer wealth in equation 3 require that all transfers received are either saved or paid out as transfers, but not consumed, and that all wages earned are either saved or used for consumption, but not devoted to transfers. That is, as constructed, the definitions rule out the possibility that wage income might be saved in order to provide transfers or that transfer income might be consumed by the recipient.

This is problematic on a theoretical level. Since wealth is fungible, the assignment of one particular source of wealth to one particular use of wealth requires some further justification. It is also problematic on an empirical level. Substantial empirical evidence indicates that households consume a portion of the transfers they receive by means of increased leisure and increased consumption.²⁵

These facts confound interpretations of life-cycle wealth and transfer wealth in several ways: First, as defined by the Kotlikoff-Summers model, life-cycle wealth does not correspond in general to what the life-cycle model indicates wealth should be. As a result, comparing life-cycle wealth as defined by Kotlikoff and Summers to total wealth does not inform the question of whether the life-cycle model—even if it is augmented to allow for unintended bequests—adequately explains aggregate wealth accumulation. It is true that if transfers were equal to zero, the measure of life-cycle wealth would correspond to wealth accumulation in the life-cycle model. But once transfers are introduced, the life-cycle model indicates that some transfers received might be consumed or result in changes in labor supply, or that some wages might be used to give transfers. This implies that no correspondence necessarily exists between life-cycle wealth as defined by Kotlikoff and Summers, and what the life-cycle model would predict.

Second, differences in life-cycle wealth and transfer wealth across households or societies do not provide information about the relative strength of life-cycle versus other saving motives. As Alan Auerbach notes, suppose two

25. See, for example, Brown and Weisbenner (2002); Holtz-Eakin, Joulfaian, and Rosen (1993, 1994a, 1994b); Joulfaian and Wilhelm (1994); Weil (1994).

households have the same wages and have received the same transfers, but one has a higher propensity to consume out of inherited wealth. A natural conclusion would be that the household that consumes more of its transfer wealth has less net accumulated transfer wealth and hence by any plausible definition has less transfer wealth than the other.²⁶ Using the Kotlikoff-Summers methodology, however, all of the consumption out of inherited wealth would be subtracted from earnings to form life-cycle wealth. As a result, the Kotlikoff-Summers methodology would show a household with a higher propensity to consume out of inherited wealth to have less overall wealth, but a *higher* share of wealth from transfers compared to the other household.

Third, the accounting definition of transfer wealth does not allow for households to spend transfer wealth on their own, or anyone else's consumption. This definition thus requires that a household's transfer wealth either accrues interest, which raises aggregate transfer wealth over time, or is given to another household, and accrues interest there. Either way, using the accounting definition of transfer wealth, aggregate transfer wealth—the sum of transfer wealth over all households—must rise continually over time. This property stems solely from the accounting definition of transfer wealth, and it holds regardless of whether people consume or save the transfers they receive.

This property leads to the following *reductio ad absurdum*: Suppose that 1 cent (in 2001 dollars) was transferred in year zero and has earned 3 percent real interest per year since then. The transfer wealth from that penny would now total more than \$10²³, numerous orders of magnitude larger than current world wealth. Thus if one takes the accounting definition of transfer wealth seriously, and goes back in time far enough, transfer wealth should be virtually infinite, since it accrues continuously over time. This example illustrates that, because people can in fact consume out of existing transfer wealth, applying compound interest to initial transfer values can create values that are difficult to interpret in a meaningful way.

This issue is related to the appropriate treatment of interest on previously received transfers. Modigliani argues that the interest earned on net transfers received should count as life-cycle wealth.²⁷ Kotlikoff and Summers, Blinder, Gale and Scholz, and Brown and Weisbenner attribute the interest received

26. Alan J. Auerbach. 2001. "Comments on Jeffrey Brown and Scott Weisbenner, 'Is a Bird in Hand Worth More than a Bird in the Bush?'" University of California, Berkeley (July). Mimeo.

27. Modigliani (1988a, 1988b).

to transfer wealth.²⁸ The Modigliani view denies that a transfer received in the past is more valuable to the recipient than a transfer of equal real (inflation adjusted) value received today. The others' view leads to the *reductio ad absurdum* mentioned above. The fact that either treatment of interest leads to an economically absurd conclusion suggests that the underlying concept is not well specified.

Finally, it is not even possible to retreat to the view that life-cycle and transfer wealth decompose wealth into parts that are earned and parts that are gifts. A worker's earnings, for example, depend on cognitive ability (a genetic transfer), acquired education (possibly a transfer), work habits and effort (some part of which may be inherited) and other factors that might be considered transfers, such as social connections or jobs in the family business. Likewise, not all transfers are gifts. In the exchange models of Kotlikoff and Avia Spivak; Douglas Bernheim, Andrei Shleifer, and Lawrence Summers; and Donald Cox transfers represent payment for goods or services provided and hence are earned.²⁹

In summary, then, it is difficult to assign any economic interpretation to life-cycle and transfer wealth as defined by the accounting identity, except the fact that life-cycle wealth would be an estimate of what the life-cycle model would predict if transfers were zero. Once it is acknowledged that transfers do exist, however, the definitions of life-cycle and transfer wealth have no meaningful economic analogue. As a result, the findings in the next two sections—that life-cycle wealth and transfer wealth provide no information about motives for saving or gifts or about the effects of government policies—should not come as a surprise.

Motivations for Wealth Accumulation and Transfers

Kotlikoff and Summers note the difference between accounting and economic definitions, but nevertheless assert that empirical estimates of life-cycle wealth and transfer wealth provided key information in distinguishing motives for saving.³⁰ They write that “. . . comparing total wealth with life-cycle wealth indicates whether the life-cycle model alone can explain aggregate U.S. capital formation.” In a similar vein, they note that their “first goal is to establish the relative magnitudes of the two components T and L, and

28. Kotlikoff and Summers (1981, 1988); Blinder (1988); Gale and Scholz (1994); Brown and Weisbenner (2002).

29. Kotlikoff and Spivak (1981); Bernheim, Shleifer, and Summers (1985); Cox (1987).

30. Kotlikoff and Summers (1981).

thereby determine whether U.S. wealth holdings can be predominantly explained by life-cycle savings.”³¹

In fact, because the definitions of life-cycle wealth and transfer wealth are devoid of economic content, estimates of life-cycle and transfer wealth do not help distinguish different motives for saving or for giving gifts. A low value of life-cycle wealth relative to total wealth does not constitute evidence against the dominance of life-cycle motives for saving, because the transfers may be “accidental.” In the accidental bequest model, people face uncertain lifespans and accumulate assets to provide for retirement. They do not plan or desire to give bequests—that is, they save for their own future consumption. But because of imperfect or missing annuity markets, or because they are also saving for precautionary reasons against, say, uncertain future health expenses or uncertain lifespan, people do not annuitize their wealth, as would occur in a simple life-cycle model. Under these assumptions, people will generally have positive asset holdings when they die, even if they do not plan to give bequests. The key point is that accidental bequests can account for a large fraction of aggregate wealth.³² Thus even if transfer wealth is large, the operative model may be a life-cycle framework with uncertain mortality and imperfect annuity markets.³³

It is likewise tempting, but equally wrong, to conclude that low values of transfer wealth mean that intentional transfer motives are not an important motivation for saving. Transfer motives refer to *behavior at the margin*. An individual can have a bequest motive at the margin without leaving large bequests. For example, a household may very much like to leave a bequest but not be able to earn enough money to provide for its basic needs, and at the same time make a sizable bequest. Yet, on the margin, that household would have a strong bequest motive.

The difficulty of using aggregate measures of life-cycle wealth and total wealth to distinguish motives for saving and transfers is highlighted by the plethora of microeconomic studies that do examine these issues. Substantial evidence from patterns of *inter-vivos* giving, life insurance purchases, and annuity choices shows that a significant portion of transfers are intended.³⁴

31. Kotlikoff and Summers (1981, p. 707–09).

32. Abel (1985).

33. See also Dynan, Skinner, and Zeldes (2000).

34. Bernheim (1991); Bernheim, Lemke, and Scholz (2001); Gale and Scholz (1994); Kotlikoff (1989); Laitner and Juster (1996); McGarry (1997); Benjamin R. Page. 1997. “Bequest Taxes, Inter-Vivos Gifts, and the Bequest Motive.” Congressional Budget Office (September). Mimeo.

The existence of estate planning and tax avoidance techniques further suggests that not all bequests are accidental.

Another group of studies tries to distinguish among different types of intentional transfers and finds evidence to support particular motives for saving or transfers. In the pure altruism model, parents care about their own consumption and the utility of their children.³⁵ Parents make transfers and leave bequests until the marginal cost in terms of their own forgone consumption is equal to the marginal benefit to the parents of the increase in their children's consumption. In this model, the size of bequests differs across children to compensate for differences in their endowments or outcomes. Variations of altruism, with and without a mechanism that allows a parent to commit to a given transfer level, are examined in Neil Bruce and Michael Waldman; Assar Lindbeck and Jörgen Weibull; and Maria Perozek.³⁶

Nigel Tomes, and Becker and Tomes, provide support for the altruistic model.³⁷ But other researchers have found no evidence for various empirical implications of altruism. First, Joseph Altonji, Fumio Hayashi, and Laurence Kotlikoff show that the division of consumption between parents and children is not independent of the division of income between parents and children, contrary to the predictions of an altruism model with operative transfers.³⁸ Second, several studies find that, among families where parents make transfers to children, a one-dollar increase in parents' resources coupled with a one-dollar reduction in children's resources does not raise transfers by a dollar, although it should under altruism.³⁹ Third, under altruism, siblings with lower incomes should receive larger inheritances than siblings with higher incomes, but typically they do not.⁴⁰ In fact, equal division of estates among children appears to be the norm. Bernheim and Sergei Severinov show that this norm can arise if parental altruism is combined with the assumptions that bequests are observable, that a child derives utility from her perception

35. Barro (1974); Becker (1974).

36. Bruce and Waldman (1990, 1991); Lindbeck and Weibull (1988); and Maria G. Perozek. 1996. "The Implications of a Dynamic Model of Altruistic Intergenerational Transfers." University of Wisconsin. Mimeo.

37. Tomes (1981, 1988); Becker and Tomes (1979, 1986).

38. Altonji, Hayashi, and Kotlikoff (1992).

39. Altonji, Hayashi, and Kotlikoff (1997); Cox (1987); and McGarry and Schoeni (1995). Although, see McGarry (2000b), who considers a model of altruism where parents and children interact for several time periods and concludes that this test is misspecified.

40. Paul Menchik (1980, 1988); and Wilhelm (1996).

of parental affection toward her relative to her siblings, and that bequests are viewed as signals of parental affection.⁴¹

A variety of “exchange” models posit that bequests or transfers are the payment for some good or service provided by children. In the strategic bequest model, parents care about their own consumption, their children’s utility, and services obtained from children.⁴² These services may represent standard market goods or services (lawn mowing, for example) or more personal goods, such as visits, attention, or children’s choices regarding marriage, childbearing, education, career, and location of residence. In the exchange model, parents pay for services with bequests, rather than *inter-vivos* transfers. By delaying payment, parents can control a child’s actions for a longer period, and extract the entire amount of services that the child is willing to provide for a given bequest amount. Cox presents a model in which parents buy services from their children by means of *inter-vivos* gifts, and the exchange may be mutually beneficial.⁴³ In Kotlikoff and Spivak, families act as annuity markets: children ensure a flow of resources to parents who are in danger of outliving their resources, and the parents pay for this service by making *inter-vivos* transfers and bequeathing any resources they have at the end of their lives.⁴⁴ Empirical tests of exchange models have generated mixed results.⁴⁵

In a third model of motives for transfers, James Andreoni argues that people obtain utility from the act of giving itself.⁴⁶ Other specifications simply assume that households acquire utility directly from wealth or from the after-tax bequest they leave. This specification is sometimes offered as a structural model. Henry Aaron and Alicia Munnell; Gurdip Bakshi and Zhiwu Chen; and Christopher Carroll, for example, argue that pre-estate-tax wealth may enter the utility function as a separate argument, above and beyond the conventional consumption goods it can finance, because wealth may also provide social status, power, social connections, and so forth.⁴⁷ A related case occurs if households care directly about the size of the after-tax bequest they provide.⁴⁸ Alternatively, the specifications using pre- or post-tax wealth may be thought of as reduced form models consistent with different structural

41. Bernheim and Severinov (2000).

42. Bernheim, Shleifer, and Summers (1985).

43. Cox (1987).

44. Kotlikoff and Spivak (1981).

45. Bernheim, Shleifer, and Summers (1985); Cox (1987); and Perozek (1998).

46. Andreoni (1989).

47. Aaron and Munnell (1992); Bakshi and Chen (1996); Carroll (2000).

48. Blinder (1976); Carroll (2000).

motivations for transfers. Carroll presents casual evidence consistent with the utility-of-wealth model, but no formal tests of either model exist.⁴⁹

For purposes of this paper, the noteworthy point is that because the economic content of life-cycle and transfer wealth is difficult to sort out, virtually all values of life-cycle wealth and transfer wealth are consistent with virtually all transfer motives discussed above.

Effects of Government Policies

The second key question that motivates the study of transfers is understanding how changes in transfers would affect overall wealth accumulation. One of the few issues on which Kotlikoff and Summers, and Modigliani, appear to agree is that it should be possible to evaluate the economic effects of transfers independent of whatever accounting norms or definitions are used. While their point is correct in principle, it does not ease the concerns noted above that life-cycle and transfer wealth lack economic content unless the two types of wealth are placed in the appropriate economic framework.

We make two main points regarding the Kotlikoff and Summers estimates of the economic effects of changes in transfers: First, the economic framework used by Kotlikoff and Summers described above to assess the impact of transfer wealth is problematic. Second, plausible variations and extensions in the *economic* framework are likely to produce huge variation in the estimates of the importance of transfers for wealth accumulation. As a result, we conclude that the findings in Kotlikoff and Summers are not helpful for determining the impact of changes in transfers on wealth accumulation.⁵⁰

We have at least four concerns with the underlying economic framework that Kotlikoff and Summers use to assess the impact of transfers on wealth accumulation: The most important is that Kotlikoff and Summers never specify *how* changes in transfers come about. One can imagine many sources for changes in transfers. People could have an exogenous shift in preferences away from giving or receiving transfers. The government could require annuitization of all wealth. The government could tax transfers. Certainly, each of these policies would have a different effect on wealth accumulation.⁵¹ Yet, the

49. Carroll (2000).

50. Kotlikoff and Summers (1981).

51. Nor is there any reason to believe that such interventions would necessarily be effective in eliminating all transfers. For example, even if the government forced annuitization of all wealth upon retirement, people could still make sizable transfers by using their annuity income to pay premiums for life insurance policies that listed children as the beneficiaries. Yaari (1965); and Bernheim (1991).

framework used by Kotlikoff and Summers does not distinguish the effects of these alternative policies.

The second problem is that to the extent that the analysis is intended to deal with changes in transfers due to taxes on transfers, it does not account for the revenues that are collected.⁵² While it is useful and important in any analysis of tax incidence to keep track of the revenues, it is particularly important in this case.⁵³ Due to the assumptions about functional form—that is, a separable utility function—in the Kotlikoff and Summers model noted above, changes in transfer taxes only have income effects on consumption and leisure.⁵⁴ But the aggregate income effects of the tax change would be zero if the revenues were recycled into the model, and this could fundamentally change the results. For example, if the revenues from a transfer tax were recycled by giving each household a lump-sum equal to the transfer taxes it paid, the income effect would be zero for all households and hence no change in consumption, leisure or wealth, would take place regardless of the values of life-cycle and transfer wealth.

The third problem is that the framework used by Kotlikoff and Summers is based on a partial equilibrium model. In another work, Kotlikoff shows that the partial equilibrium results for capital intensity can substantially overstate analogous general equilibrium outcomes.⁵⁵

The fourth problem is that the motive for transfers can also affect the impact of transfer taxes on wealth. Kotlikoff and Summers use a utility function in which consumption and leisure are collectively separable from transfers.⁵⁶ Transfers are specified to affect utility either through an additive term that measures the log of transfers or an additive term that measures the utility of the next generation. Thus Kotlikoff and Summers build in a utility-of-bequests motive or an altruistic model in order to develop their estimate. But, as noted above, the literature provides literally no evidence to support

52. We thank Peter Diamond for bringing the importance of this point to our attention.

53. Indeed, as Kotlikoff and Summers (1981) note in footnote 9, the compensated rather than uncompensated changes are the appropriate way to measure the impact of tax changes. One might think that with a 100 percent tax on transfers, transfers and revenues would be zero. However, to the extent that bequests are accidental, as defined above, taxable transfers would be positive even with a 100 percent tax.

54. Kotlikoff and Summers (1981).

55. Kotlikoff (1979). In the case of private transfers, however, there may be reason to believe that the general equilibrium effects could amplify the partial equilibrium effects. We thank Laurence Kotlikoff for several discussions on this point.

56. Kotlikoff and Summers (1981).

the former specification and much evidence to oppose the latter. If bequests were motivated by exchange considerations, as in Bernheim, Shleifer, and Summers, a separate argument—the services provided by the child—would need to be included in the utility function.⁵⁷ Alternatively, if bequests were accidental, in the sense described above, or if households obtain utility from the holding of wealth, different utility functions would need to be specified. Thus the formulation of the utility function specified by Kotlikoff and Summers does not enable the model to adequately capture all transfer motives, nor does it imply that the results are independent of transfer motives.⁵⁸

Different motives for transfers can imply radically different effects of transfer taxes or government policies on wealth accumulation. The implications of different transfer motives for public debt policies are well known.⁵⁹ Gale and Perozek show that different transfer motives translate into different impacts of the estate tax on wealth accumulation. For example, with accidental bequests, changes in estate tax rates have no effect on saving by potential transfer donors. If bequests are altruistic, estate taxes will typically reduce saving by potential transfer donors. In both cases—for the estate tax and for public debt—the effects can vary dramatically by transfer motive.⁶⁰

Conclusion

Estimates of the relative magnitude of life-cycle wealth and transfer wealth have stimulated substantial new research on intergenerational transfers, aimed at understanding both the motives for household saving and transfers, and the impact of government policies on such behavior. The focus on intergenerational transfers has proven to be a fertile research ground. Yet, with twenty years of hindsight, it is fair to say that the methodology used to develop estimates of aggregate life-cycle and transfer wealth appears to be unlikely to resolve either of the two key issues that Kotlikoff and Summers pose at the beginning of their paper, namely the motivation for household saving and transfers, and the impact of government policies on wealth accumulation.⁶¹ The testing of hypotheses about alternative motives for saving and transfers, and direct tests of the impact of policies on behavior seem to be more promising avenues for future research.

57. Bernheim, Shleifer, and Summers (1985).

58. Kotlikoff and Summers (1981).

59. See Barro (1989); and Bernheim (1989).

60. Gale and Perozek (2001).

61. Kotlikoff and Summers (1981).