
THE U.S. CURRENT ACCOUNT: THE IMPACT OF HOUSEHOLD WEALTH

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ABSTRACT

Household wealth is shown to have a substantial impact on the current account through the wealth effect on savings. Private savings and wealth are estimated to share a negative relationship in the long run. Further, the impact of wealth changes on private savings takes several years, given an adjustment half-life of nearly 2 years. The reductions in private savings, due to changes in household wealth, reduce domestic savings. The increased inflow of foreign savings from the reduction in domestic savings is shown to have a negative effect on the current account balance.

Two simulations demonstrate that small changes in the growth rate of wealth can have sizeable impacts on current account movements, altering the current account as a percent of GDP by as much as two percentage points. For the period 1998:Q3 through 2005:Q3, the difference in the actual and simulated current account deficit as a percent of GDP is 6.47 percent versus 8.83 percent, respectively. This difference is attributed to a difference between the actual growth rate of wealth over this period (0.82 percent) and the simulated growth rate (one percent). During the large increase in wealth, 1995:Q1 through 1999:Q4 (average actual wealth growth rate of 2.3 percent versus the simulated one percent growth rate), the actual current account deficit was 2.87 percent and the simulated deficit was 0.86 percent. Therefore, policies that impact wealth or saving can potentially affect the current account balance.

INTRODUCTION AND LITERATURE REVIEW

The current account deficit stood around 800 billion dollars, or approximately 6.5 percent of GDP, in 2005. “The United States current account records exports and imports of goods and services, unilateral transfers (gifts), U.S. earnings on investment abroad, and income payments to foreigners from their U.S.

assets” (Humpage, 1998). But many analysts see the current account more broadly as the measure of international trade, because net exports contribute the largest portion. The current account has been steadily falling, creating a deficit, since an upswing in the early 1990’s. This lasting current account deficit would seem to indicate that the United States has not exported enough to cover the amount of goods imported. A trade deficit is not an inherently bad thing, so the creation of such a large deficit would seem to speak of something more. It begs the question: is the lack of exports or the large amount of imports the only contributor to the current account deficit?

One contributing factor to the large trade deficit may be the decreased private household savings relative to foreign savings, since the current account balance is the difference between domestic savings and domestic investment. “In the United States, national savings is currently quite low and falls considerably short of U.S. capital investment. Of necessity, this shortfall is made up by net foreign borrowing...” (Bernanke, 2005). Therefore, the reduction in private savings, holding all else constant, leads to a decrease in the current account (an increase in the current account deficit).¹ The private savings rate is the amount of income left after households have paid their bills, as a percentage of income this savings rate declined until in January 2006 it reached 0.7 percent. Given the large current account deficit, a substantial increase in private savings is one means to reduce this imbalance (Lansing, 2005).

Others look beyond the diminished savings rate into the calculation of private household savings. The reported private savings rate in the United States does not take into account increases in assets such as equities and homes (Marquis, 2002). Many see the increases in the value of these equities as a substitute for savings, i.e. the wealth effect. Marquis notes that one reason for the declining savings rate in the U.S. may be due to large increases in wealth. Lansing (2005) suggests that the decline in personal savings rates are attributed to the rising equity and housing prices.

From the end of the second quarter of 1994 to the beginning of the third quarter of 1997 the value of household wealth increased to about 5.2 trillion dollars, roughly doubling in the process. Ludvigson and Steindel (1999) examine a possible link between wealth and savings. By increasing consumption the individual is automatically choosing to reduce the amount of their savings by that same amount, holding all else constant. Further, Ludvigson and Steindel show graphically that with the dramatic increases in the wealth-to-disposable-income ratio there has been

a marked decline in the private savings rate. Therefore, falling private savings and rising private consumption has a direct correlation to the rise in household wealth.

The recent research suggests this increase in household wealth may cause a decrease in the private savings rate, and thus contribute to the current account deficit experienced by the U.S. With the rise in household wealth there has been a large decline in private savings to a point where the average private savings rate was negative for all 2005 in the United States.

Therefore, the large increase in wealth may lead to reductions in private savings. A decrease in private savings will create a subsequent decrease in domestic savings, holding government savings constant. It is this reduction in domestic savings that can lead to a fall in the current account, since it creates an inflow of foreign savings to fund domestic investment. This research provides the link between wealth and the current account. The results here demonstrate that small changes in the growth rate of wealth can lead to large swings in the current account due to the wealth effect on private savings.

DATA AND EMPIRICAL METHODS

The data used comes primarily from the Bureau of Economic Analysis (BEA, 2006). Gross private savings, disposable personal income, gross government savings, and gross domestic investment come from Table 5.1 (“Savings and Investment”). Wealth is collected from the Federal Reserve’s Balance Sheet of the United States (Table B.100) (Board of Governors of the Federal Reserve System, 2006). All series are deflated using the personal consumption deflator, which is also available from the BEA.² The data range is 1952:Q1 through 2005:Q3.³

The method used to measure the current account follows that of Humpage (2001). Equation (1) is derived from the National Income and Products Accounts identity. In equation (1), SP is gross private savings, SG is gross government savings, I is gross domestic investment, and CA is the current account.⁴ In any period, t , the current account is the sum of private and government savings less domestic investment.

$$SP_t + SG_t - I_t = CA_t \quad \text{Formula (1)}$$

The U.S. current account deficit has been negative in every quarter since 1982:Q2 except for one (1991:Q1). Therefore, since 1982:Q2, investment has exceeded national savings.⁵ This persistent current account deficit can be attributed,

in part, to the decline in savings. Private savings reached a high of 21.6 percent (percent of GDP) in 1982:Q2. Since that time, private savings as a share of total income has steadily declined to sample lows of thirteen to fifteen percent from 2001 through 2005. Government savings, as a percent of GDP, jumps around zero in the latter part of the sample (although it is negative in most periods). Therefore, this steady decline in the current account, on the savings side, can be directly attributed to the decline in private savings, given the minute changes in government savings.

As shown in recent research concerning the wealth effect, changes in aggregate household wealth can have an impact on household consumption and savings behavior. A one dollar change in wealth is estimated to increase consumption around four cents in the long run.⁶ Marquis (2002) suggests that wealth may also play an important role in determining household savings behavior. The sharp increase in wealth during the latter part of the 1990s coincides with a steep reduction in private savings. Thus, it appears that a negative relationship exists between private, household savings and accumulated wealth.

Examining the data used here, the great increase in wealth starting in the 1980s and ending in 2000 is associated with falling private savings over the same period. Further, this decline in personal savings temporarily stops (and actually increases) during the large decrease in wealth from 2000 through 2003. Thus, the circumstantial evidence supports the notion that personal savings and wealth are negatively related. Therefore, increases in wealth that reduce private savings may also reduce national savings (holding all else constant). This decrease in national savings may potentially lead to a decrease in the current account balance (i.e., an increase in the current account deficit).

The next section investigates the relationship between wealth, private savings, and disposable personal income in the long-run and the short-run. This research employs time-series econometric methods to empirically estimate the relationship between private savings and investment. First, the long run relationship between private savings, disposable income, and wealth is estimated using the method of Johansen (1995). Then, the short-run dynamics of private savings is estimated using an error-correction model. These techniques will allow the simulation of wealth changes on private savings and the current account. More importantly, it permits the construction of scenarios to demonstrate the potential effect of alterations in the growth of household wealth on the current account.

Cointegration is tested between personal savings, wealth, and disposable personal income. All three variables were tested for the presence of a unit root,

which the tests fail to reject.⁷ The Johansen test suggests one long run relationship. The test results are provided in Table 1a, and are normalized on personal savings.⁸

Number of Cointegrating Vectors	Trace Statistic	95% Critical Value
Zero	41.18	29.80
Less than One	11.65	15.49
Less than Two	1.52	3.84

Private Savings	Disposable Income	Wealth	Constant
1.000	-0.526	0.065	-94.295
	(0.027)	(0.005)	

Standard errors in parentheses. Eight lags used in the cointegration test.

The results in Table 1b suggest that personal (household) savings and wealth share a negative relationship over the sample period. The effect of a one dollar increase in wealth is a 6.5 cent reduction in personal savings in the long run. This is similar to previous research examining the wealth effect on consumption where a one dollar increase in wealth creates a four cent increase in consumption in the long run. Finally, increases in disposable income leads to greater savings in the long run, as expected.

The results in Table 1b are used to construct the error-correction term (ECT). An error-correction model is estimated to uncover the short-run dynamics of personal savings and its adjustment to the long run equilibrium relationship given in Table 1b. The error-correction model estimated is given in Equation (2). Included in the error-correction model is the previous period change both government savings and domestic investment. The results from Equation (2) are provided in Table 2.

$$dSP_t = a_0 + a_1 dSP_{t-1} + a_2 dY_{t-1} + a_3 dW_{t-1} + a_4 ECT_{t-1} + a_5 dSG_{t-1} + a_6 dI_{t-1} + e_t \quad (2)$$

where:

$$ECT_{t-1} = SP_{t-1} - 0.526Y_{t-1} + 0.065W_{t-1}$$

d denotes the first-difference ,

The results in Table 2 suggest a slow dynamic adjustment of private savings to changes in wealth. The ECT parameter of -0.105 (or adjustment parameter) implies that 10.5 percent of the disequilibrium created from a change in wealth or income is eliminated in each period. Therefore, a one dollar increase in wealth creates a 6.5 cent reduction in private savings in the long run, so in the following period private savings falls 0.68 cents.⁹ The slow adjustment of private savings means that a one-time change in wealth can have a lasting impact on private savings. Further, this change in private savings affect national savings (holding government savings constant) and the current account balance. The next section of this paper uses these estimates of the relationship between private savings and wealth to simulate how small shocks to wealth can impact the current account.

Table 2: ECM Results			
Variable	Parameter Estimate	Standard Error	P-Value
Lagged Change in SP	-0.197	0.116	0.091
Lagged Change in Y	-0.065	0.118	0.583
Lagged Change in W	0.016	0.008	0.058
ECT	-0.105	0.034	0.002
Lagged Change in SG	0.102	0.118	0.388
Lagged Change in I	-0.044	0.116	0.705
Constant	7.31	4.47	0.104
Adjusted R-Squared	0.147		

Standard errors are adjusted using the method of Newey-West (1987).

CURRENT ACCOUNT CHANGES AND HOUSEHOLD WEALTH

Two lines of data are created for each simulation, one in which wealth grew at the constant growth rate of one percent, and the other uses actual growth rate of

wealth. The simulated movement in wealth is used to construct simulated private savings and current account using the results in Tables 1 and 2 and Equation (1). All other variables are held at their historical level; therefore the difference between the two current account series (historical and simulated) is the difference in aggregate wealth.¹⁰ Two time periods were chosen to highlight the impact that wealth may have on the current account, 1998:Q1 through 2005:Q3 and 1995:Q1 through 1999:Q4.

From the first quarter of 1998 to the third quarter of 2005 the actual growth rate of wealth was 0.82 percent on average, an amount lower than our simulated (constant) increase in wealth of one percent. Using the model developed in the previous section, simulated private savings is 15.8 percent lower than actual (\$1,409.3 billion versus \$1,674.1 billion in 2005:Q3). The result is a simulated current account deficit that is larger than the actual current account deficit. The simulated current account deficit equaled \$988.9 billion dollars during this period while the actual current account deficit totaled \$724.1 billion dollars in the third quarter of 2005. The 0.18 percent difference in the growth rates between actual wealth and simulated wealth causes a difference in the total current account deficit of 36.6 percent [(difference in current account deficit in 2005:Q3 as percentage of GDP of 8.83 percent (simulated) versus 6.47 percent (actual)].

The second simulation covers the period between the first quarter of 1995 through the fourth quarter of 1999. The actual growth rate of wealth averaged 2.3 percent (versus the simulated, constant growth rate of one percent). The result is a simulated level of private savings that is 14.3 percent larger than actual (\$1,547.9 versus \$1,354.2 in 1999:Q4). The larger growth rate of actual wealth (and the smaller level of simulated savings) leads to a current account deficit that is larger than the simulated current account balance. The actual current account deficit equaled \$276.9 billion dollars while the simulated deficit was \$82.3 billion dollars in the fourth quarter of 2004. The 1.267 percentage point difference in wealth's actual growth rate resulted in a difference of 69.94 percent between the actual and simulated current account deficits [difference in current account deficit in 1999:Q4 as percentage of GDP of 0.86 percent (simulated) versus 2.87 percent (actual)].

CONCLUSION

Results suggest that wealth and the current account share a negative relationship, which works through the negative relationship between private savings and wealth. The decline in the private savings can be partially attributed to the rise

in household wealth, and this decline in private savings may reduce the current account balance. For example, during the large decrease in wealth from 2000 through 2003 the private savings rate stopped its decline and actually had a slight increase during the same time, following the trend we expected. This decrease in national savings may have led to a decrease in the current account balance (an increase in the current account deficit). The subsequent rise in wealth since may have had the opposite and, as a result, drive the current account balance downward. Therefore, policies designed to increase the current account should consider the impacts of these policies on wealth. Also, policies that impact household wealth or saving can potentially affect the current account.

ENDNOTES

1. There is a vast literature concerning the implications of current account deficits. One often cited concern is the “sustainability” of the deficit. Humpage (2001) suggest that the relative growth between real output and the current account deficit determines the sustainability of these imbalances. Higgins and Klitgaard (1998) view the current account deficit in a more positive light. The inflows of saving into the U.S. support domestic investment and employment in those industries. It may also have substantial indirect effects in the macroeconomy.
2. This is common in the wealth effect literature. For example, see Ludvigson and Steindel (1999), Lettau and Ludvigson (2004), or Mehra (2001).
3. During the sample period, there were substantial tax code changes, which altered the return on saving and wealth. The effect of these changes on the savings-wealth relationship is not considered here.
4. Government savings is the difference between revenues and expenditures at all levels of government (federal, state, and local).
5. Here, the sum of private and government savings is referred to as “national savings”.
6. For more recent research into the relationship between wealth and consumption see Ludvigson and Steindel (1999), Davis and Palumbo (2001), Mehra (2001), and Lettau and Ludvigson (2004).

7. Unit root tests results are provided in the Appendix. The Augmented Dickey-Fuller (Dickey and Fuller 1981) and KPSS (Kwiatkowski, et. al. 1992) tests include both a constant and a time trend.
8. Table 1 presents the long run relationship in error-correction form. Therefore, a positive parameter suggests a negative long-run relationship, and a negative parameter suggests a positive long-run relationship.
9. This amount is equal to the product of 0.105 and -6.5 cents. The half-life of a change in wealth is 6.9 quarters. In other words, it takes nearly 1.75 years for half of the 6.5 cent reduction in private savings to be realized from a one dollar increase in wealth.
10. Equation (1) gives the current account identity, which gives the traditional determinants of the current account balance. There are other potentially important determinants of the current account, such as the exchange rate, domestic income, or foreign income. These are not included in this study.

APPENDIX

Appendix Table A		
Unit Root Tests Variables in Levels		
Variable	ADF Test Statistic	KPSS Test Statistic
Private Savings	-3.17	0.25
Disposable Personal Income	-0.59	0.41
Wealth	-0.43	0.41
Constant and time trend used in both tests. The ADF tests the null of a unit root, while KPSS tests the null of a stationary series. Ninety-five percent critical values for the ADF and KPSS tests, respectively, are -3.43 and 0.15.		

Appendix Table B		
Unit Root Tests Variables in First Differences		
Variable	ADF Test Statistic	KPSS Test Statistic
Private Savings	-19.49	0.06
Disposable Personal Income	-17.21	0.04
Wealth	-14.49	0.04
Constant and time trend used in both tests. The ADF tests the null of a unit root, while KPSS tests the null of a stationary series. Ninety-five percent critical values for the ADF and KPSS tests, respectively, are -3.43 and 0.15.		

REFERENCES

- Bernanke, B. (March 10, 2005). The Global Savings Glut and the U.S. Current Account Deficit. Remarks at the *Sandridge Lecture*, Virginia Association of Economics.
- Davis, M. and M. Palumbo. (2001). A Primer on Economics and Time Series Econometrics of Wealth Effects. *Finance and Economics Discussion Series*, Retrieved November 8, 2005 from Board of Governors of the Federal Reserve System.
- Dickey, D. and W. Fuller. (1981). Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root. *Econometrica*, 49, 1057-1072.
- Federal Reserve Flow of Funds Accounts*. Board of Governors of the Federal Reserve System. Retrieved January 4, 2006, from <http://www.federalreserve.gov/RELEASES/z1/>
- Humpage, O.F. (October 15, 1998). Is the Current-Account Deficit Sustainable? *Federal Reserve Bank of Cleveland Economic Commentary*.
- Humpage, O.F. (2001). International Financial Flows and the Current Business Expansion. *Federal Reserve Bank of Cleveland Policy Discussion Papers*, 2.

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- Johansen, S. (1995). *Likelihood-based Inference in Cointegrated Vector Autoregressive Models*. Oxford: Oxford University Press.
- Johnson, S. C. (March 20, 2006). Boston Fed's Minehan: Personal, Government Saving Must Increase. *Dow Jones Newswires*, from Lexis-Nexis, <http://web.lexis-nexis.com/universe/>.
- Lansing, K. (November 10, 2005). Spendthrift Nation. *Federal Reserve Board of San Francisco Economic Letter*, 30.
- Lettau, M. and S. Ludvigson. (2004), Understanding Trend and Cycle in Asset Values. *American Economic Review*, 94, 276-299.
- Ludvigson, S. and C. Steindel. (July, 1999). How Important Is the Stock Market Effect on Consumption. *Federal Reserve Bank of New York Economic Policy Review*.
- Marquis, M. (March 29, 2002). What's Behind the Low U.S. Personal Savings Rate? *Federal Reserve Board of San Francisco Economic Letter*, 09.
- Mehra, Y. (2001). The Wealth Effect in Empirical Life-Cycle Aggregate Consumption Equations. *Federal Reserve Bank of Richmond Economic Quarterly*, 87, 45-68.
- National Economic Accounts*. Bureau of Economic Analysis. Retrieved January 12, 2006, from <http://www.bea.gov/beahome.html>.
- Newey, W. K. and K. D. West. (1987). A Simple, Positive Semi-Definite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix. *Econometrica*, 55, 703-708.
- Reutman, R. (March 6, 2006). Economic storm clouds gathering. *Scripps Howard News Service*, from Lexis-Nexis, <http://web.lexis-nexis.com/universe/>.

