Social Security Needs "Unemployment Insurance"
John S. Atlee and Richard Atlee
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Social Security's basic financial problem -- The problem is the irresponsible management of the economy -- not the Social Security system or its level of benefits. The charts below clearly demonstrate the close correlation of Social Security finances with the unemployment rate. This, combined with the Social Security Trustees' acknowledgement of permanent solvency for the system at reasonably low levels of unemployment, provides the basis for an "unemployment insurance" mechanism for the system, analogous to that for individuals, with no cuts needed.

"Budget cutting" of Social Security benefits is inappropriate. The benefits are not a tax-financed budgetary "entitlement." They are a government-sponsored, primarily self-financed, **off-budget** pension program -- like many employer-sponsored pension programs. Social Security's Trust Fund was built up over decades by **contributions** (not "taxes") from people who expect -- as with any pension program -- to receive the benefits they paid for.

No "bankruptcy" at reasonably low unemployment -- The Social Security annual report [1] includes a chart of three different 75-year projections of Social Security Trust Fund finances, based on different economic assumptions [2]:

Figure 1

(SS annual report, 2010; unemployment assumptions added)
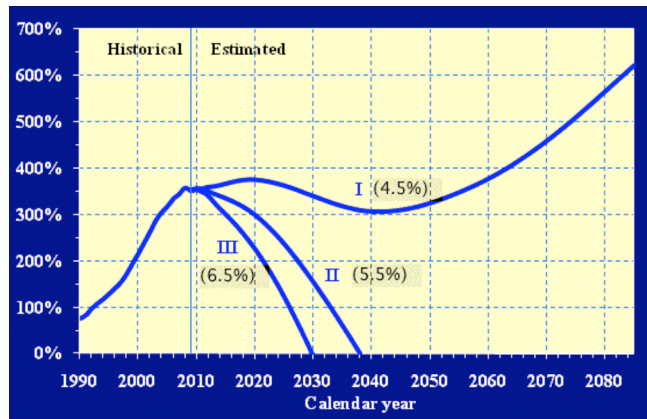
In Figure 1 [3], the "High-Cost" Projection III assumes an average 6.5% unemployment and goes bankrupt in 2029. "Intermediate" Projection II assumes 5.5% unemployment and goes bankrupt in 2037. In any case,

> **the notion that the nation should -- or even could -- tolerate
> 5.5% unemployment for 75 (or even 25) years is unconscionable.**

But the "Low-Cost" Projection I, which assumes 4.5% unemployment, is solvent indefinitely. Yet it **is ignored in virtually all public discourse** -- which tends to focus on Projection II.
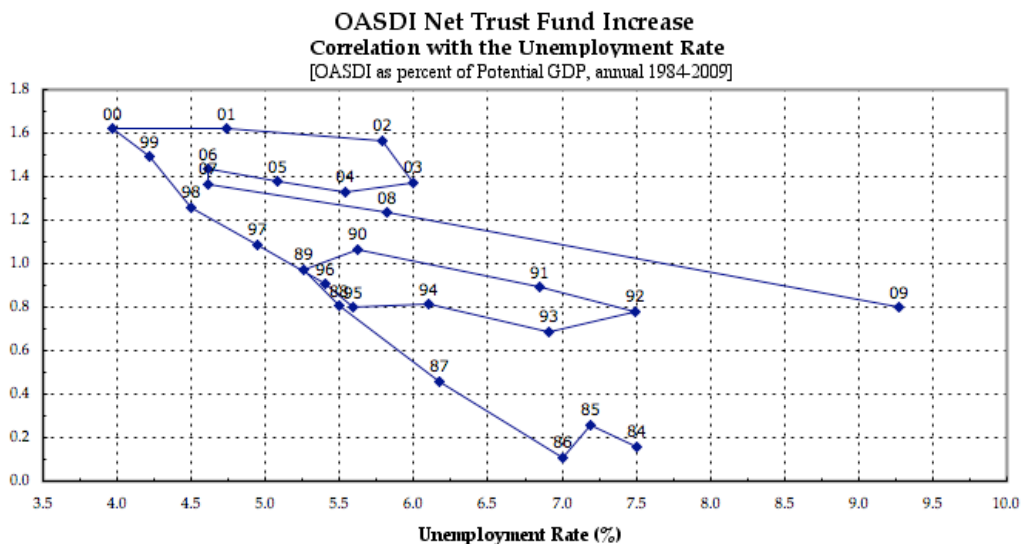
Unemployment and inflation -- It is often erroneously believed that low unemployment would be inherently inflationary. However, in all four post-1950 periods of 4.5%-or-less unemployment, inflation was low to moderate [4], and there is no credible reason why our economy, using appropriate stabilization tools [5], cannot be managed so as to maintain stable full employment without significant inflation.

Social Security needs "Unemployment Insurance" -- This paper proposes a mechanism for giving the Trust Fund **"unemployment insurance**," that would, in a recession, transfer from the Treasury's general fund to the Trust Fund an amount equal to the difference between Social Security's current net income and the Trustees' 4.5% unemployment level. (The process could even involve transfers in the other direction -- **to** the general fund -- when unemployment is again brought down to the pre-Bush 4% level.) This document discusses the Social Security/unemployment relationship and how that relationship can be used to determine the appropriate size of such transfers.

Determining the amount of the recession "unemployment insurance" benefit -- Just as in the case of an individual worker during a recession, the aspect of the Trust Fund's finances [6] most clearly hit by unemployment is its net income -- the **Net Trust Fund Increase (NTFI)**. Figure 2, below, shows the unemployment rate on the horizontal axis and the NTFI on the vertical axis. Inherent in the NTFI are two factors not present in unemployment: a growth trend (of the economy) and inflation. These two factors make comparisons of NTFI values across time periods -- or with unemployment -- invalid, so they been filtered out by dividing the NFTI by a data series that contains these same factors: Potential GDP (PGDP) [7]. The NTFI values used here are annual data from 1984 -- the year following the major reorganization of Social Security finances by the Greenspan Commission [8] and Social Security Amendments of 1983 [9] -- to 2009 (the most recent data in the Trustees' 2010 report).

Because changes in policy and other factors can alter relationships between statistical series over time, Figure 2 connects the data points and labels each with the year it represents:

Figure 2

OASDI Net Trust Fund Increase
Correlation with the Unemployment Rate
[OASDI as percent of Potential GDP, annual 1984-2009]

OASDI data from Trustees' 2010 Annual Report, Table VI.A4
Potential GDP from Congressional Budget Office

Presented in this way [10], the data exhibits numerous near-straight-line periods. Observation of the NTFI's component financial series [6] reveals six optimum periods of correlation:

  A: 1986-89   B: 1990-92   C: 1995-2000   D: 2000-02   E: 2004-06   F: 2007-09

Regression lines for these periods are shown in Figure 3:

Figure 3

OASDI Net Trust Fund Increase
Correlation with the Unemployment Rate
[OASDI as percent of Potential GDP; annual 1984-2009]

Unemployment Rate (%)

- - - Recession
—— Recovery

OASDI data from Trustees' 2010 Annual Report, Table VI.A4
Potential GDP from Congressional Budget Office
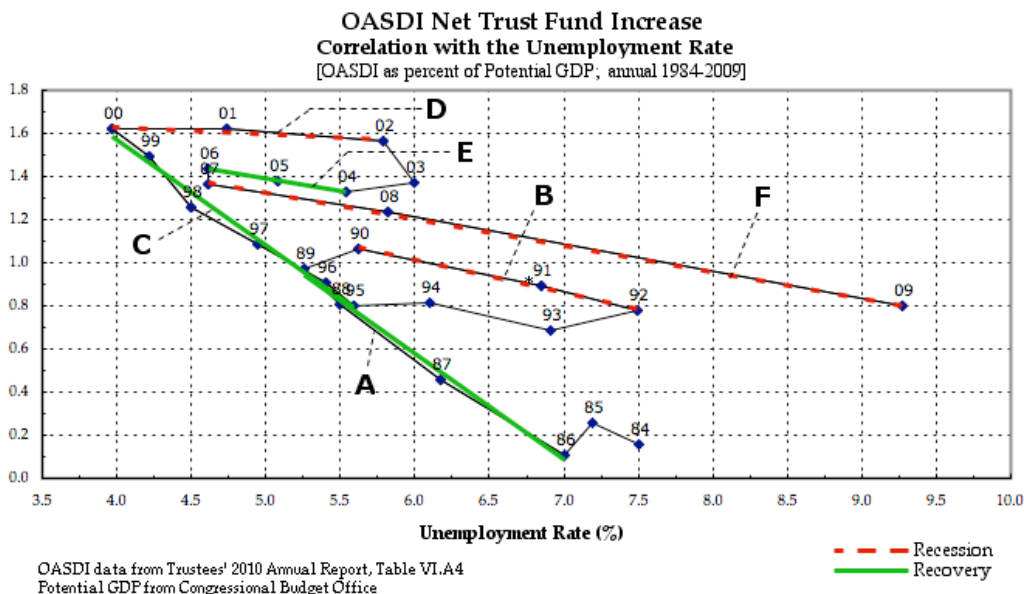
To aid in analysis, the regression lines for periods of recession (defined here as increasing unemployment, plot "moving right") are shown in dashed red, those in periods of recovery (decreasing unemployment, plot "moving left") are shown in solid green. The regression values for these lines, which are shown in Table 1 (the bold letters identify the lines) --- are:

* the **R-square (R^2) value** (correlation coefficient), which measures the closeness ("fit") of the points to the line, and the degree to which variation in the NTFI is explained by changes in the unemployment rate; values in the 99% range indicate a close correlation.
* the **slope**, which indicates how much vertical distance (NTFI effect) corresponds to a unit of horizontal distance (one percent unemployment).

Table 1

R-squared Value Color Codes

99%+	95-98%	<95%

	Year Interval	Net Trust Fund Increase			
		R^2	Slope	PGDP (avg,bil$)	Shortfall (bil$/%-UR)
A	86-89	0.9932	-0.4195	4959.7	20.8
B	90-92	0.9959	-0.1504	6173.6	9.3
C	95-00	0.9834	-0.4913	8398.3	41.3
D	00-02	0.7838	-0.0329	10030.4	3.3
E	04-06	0.9987	-0.1169	12485.2	14.6
F	07-09	0.9994	-0.1221	14576.5	17.8

The NTFI shortfall: how much? -- Table 1 shows the results of calculating [11] the NTFI shortfall in billions of dollars for each percent of excess unemployment, by combining the slope value and Potential GDP. The total shortfall -- i.e., the appropriate "unemployment benefit"

amount -- can then be calculated by applying to this per-%-unemployment figure the difference between the actual unemployment rate and the base rate (4.5%).

The kind of unemployment benefits envisioned here for Social Security would be, like the more traditional unemployment benefits, part of the economy's **automatic stabilizers**, which tend to increase federal deficits during periods of high unemployment and depressed economic activity, and increase surpluses in good times. They are part of the cost of the federal government's failure to maintain stable full employment. Over $250 billion is being *automatically* added to the deficit [12] each year at the present level of unemployment in excess of 4.5%. Table 1 indicates that at this present level of excess unemployment, the yearly transfer to Social Security would amount to another approximately $80 billion, adding to the existing financial incentive for the federal government to end the recession.

The need for further investigation -- In all but one of the six periods of correlation the closeness of fit is striking. However, many other aspects invite further study. For instance, why are the regression lines for the 86-89 and 95-00 recovery periods, which constitute essentially a single line, so different from the 04-06 recovery period, the slope of which is instead similar to the virtually parallel 90-92 and 07-09 recession periods?

From the purely practical point of view, what factors lie beneath the periods of non-correlation, and what is the significance of 2000 as the intersection point of two radically different lines? If compensation is provided at the time the year's data is finalized, there must be a mechanism for correcting that later when/if it turns out the year is part of a not-yet apparent future trend.

The purpose of this paper is merely to raise awareness of the unemployment/Social Security relationship, suggest the logic of an "unemployment compensation" program, and point out the need for further study. Making use of the relationship to create a functional compensation program requires in-depth analysis of the economic, demographic, and policy factors underlying both the periods of correlation and the transitional periods of apparent non-correlation between them. Those who wish to pursue this line of inquiry may find useful the spreadsheet [13] used in this study.

Conclusion -- The close inverse correlation between the unemployment rate during periods that cover 85% of the 1984-2009 period strongly suggests the appropriateness of providing Social Security with "unemployment compensation" -- both to guarantee its solvency and to fulfill the financial good-faith obligation of the federal government to the participants in that pension program, rather than penalize them for damage to the system created by the economic policies of that same government.

Dr. John Atlee has over 60 years of teaching and research experience in macroeconomics, and is the founder of the Institute for Economic Analysis. Richard Atlee is a writer and research assistant.

(endnotes follow)

Notes
(with page references to the material being noted)

1. 1 *Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds.* The 2010 report is at http://www.ssa.gov/OACT/TR/2010/index.html

2. 1 **75-year projection chart** for 2010 can be found at http://www.ssa.gov/OACT/TR/2010/II_project.html#114904
The **data** for this chart can be found in the report's Table VI.F.8, at http://www.ssa.gov/OACT/TR/2010/VI_OASDHI_dollars.html#99498
The **versions** of this chart from each of the reports of the last ten years are collected at http://www.iea-macro-economics.org/ss_trust_fund_projections_2000-10.html

3. 1 **Assumptions:** Table II.C1, http://www.ssa.gov/OACT/TR/2010/II_assump.html#97250

4. 2 Based on quarterly data, the average unemployment and inflation (GDP Deflator) rates during the four periods of 4.5%-or-less unemployment since 1950 was as follows. This general pattern holds even if inflation is assumed to lag 1, 2, or 3 quarters.

Period	Unemp	Inflation
1950:Q4-1953:Q4	3.2%	1.5%
1955:Q1-1957:Q3	4.2%	3.2%
1965:Q3-1970:Q1	3.8%	4.0%
1998:Q2-2001:Q2	4.2%	1.9%

5. 1 **Full-employment tools:** http://www.iea-macro-economics.org/annot_policy_tools.html

6. 2 **Trust Fund summary series:** The historical summary financial data series that govern the Trust Fund's level of assets -- the level projected in Figure 1, above -- are shown in the annual report's Table VI.A4 at http://www.ssa.gov/OACT/TR/2010/VI_cyoper_history.html#190685.
This data includes both Social Security programs -- Old Age And Survivors Insurance (OASI) and Disability Insurance (DI) -- known collectively as OASDI. The series are:

> **Net Trust Fund Increase**
> Total Trust Fund Income
> Income excluding Interest (i.e., contributions, taxes)
> Interest [14]
> Cost (98-99% of which is benefits)

The NTFI's component income and cost series, listed here below it, are important analytically in determining what is affecting the NTFI, but are not relevant in determining "benefit" amounts. They are treated in a separate paper at http://www.iea-macro-economics.org/ss_unemp_correlations_detail.html

7. 2 **CBO Potential GDP** (1949-2019, quarterly and annual) is contained in the spreadsheet *Supplemental Information on Key Assumptions* in CBO's *Projections of Potential Output*, available at http://www.cbo.gov/ftpdocs/105xx/doc10521/Table2-2-SupplementalInformation.xls , linked from the CBO's page *The Budget and Economic Outlook: An Update, August 2009* available at http://www.cbo.gov/doc.cfm?index=10521&zzz=39446

8. 2 **Greenspan Commission:** http://www.ssa.gov/history/greenspn.html

9. 2 **SS Amendments 1983**: http://www.govtrack.us/congress/bill.xpd?bill=h098-1900

10. 2 **Date-ordered two-variable plot** construction:

http://iea-macro-economics.org/date_ordered_2var_plot.html

11. 3 **Table 1 calculations:** As noted, the slope of the regression line shows how much NTFI effect corresponds to each percent of unemployment during a period. However, since the NTFI effect in Table 1 is expressed as "shortfall," the slope's sign must be reversed. And since the charted NTFI effect is measured as a percent of Potential GDP, rather than the original billions-of-dollars value, conversion from %-PGDP to $billions requires multiplying by PGDP/100:

Shortfall per percent unemployment = - Slope x Potential GDP / 100

In regular use, the particular value of PGDP for the relevant year would be applied; however, here the average PGDP over each regression period is used for a ballpark figure.

12. 4 **Automatic deficits:** http://www.iea-macro-economics.org/unemp_deficit.html

13. 4 **Spreadsheet:** http://www.iea-macro-economics.org/data/ss_table_iv_a4_2010.xls

14. 5 **The role of interest** -- The key to the long-term solvency of Social Security, or of any pension fund, is the compounding of interest on the principal. The reason for the rapid collapse of the "High-Cost" and "Intermediate" projections (Figure 1) is an acceleration of decline caused by the loss of interest on declining principal. In examining the contributions/benefits behavior of Social Security, it can be useful to look at the effect on the NTFI of excluding interest -- one of the series shown on the details page [6].
Note: In the Trustees' table, the column heading for the Interest data used here is "Net Interest." However, despite the term "net," almost all of that is the interest income on the Trust Fund assets. A detailed explanation of the factors that make the published figure a "net" one can be found at
http://www.ssa.gov/OACT/TR/2010/VI_cyoper_history.html#30.