

National Time Accounting and National Economic Accounting

J. Steven Landefeld and Shaunda Villones,
Bureau of Economic Analysis

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Measuring the Nation's Economy.



National Economic Accounts

- National Income and Product Accounts developed to address gap in measurement and to address related policy need
 - Absence of comprehensive and unduplicated account of economic activity
 - Depression and World-War II planning needs

Characteristics of National Economic Accounts

- Comprehensive Measure of Economic Activity of Total and Parts
 - Final Expenditures
 - Incomes
 - Value-Added
- Market Valuation:
 - Provides “consistent” weights for aggregation
 - Also based on business records, thereby avoiding problems of household surveys
 - Avoids explicit or implicit weights in other indexes
 - Based on well-developed index number literature

Characteristics of National Economic Accounts

- Market Valuation:
 - Provides comparability across components, and when combined with deflators (and PPP measures) comparability over time and across countries.
 - Quite useful in scorekeeping and analysis of events and programs with multiple effects across industries, commodities, incomes, regions, and countries (SNA).

Characteristics of National Economic Accounts

- Double-entry accounting
 - Supply and Use Tables that are useful in tracing effects of tax changes and other economic events and across the three measures of economic activity.
- Timely Estimates
 - Use of data collected for other purposes combined with interlocking structure of NIPA's allowed relatively low cost and accurate estimates extrapolated from benchmark data.

Characteristics of National Economic Accounts

- Relevant and Up to Date Estimates:
 - Trend and cycle uses require frequent updating to reflect changes in the economy
- NIPAs provide the rigor of a comprehensive and consistent framework for evaluating the overall impact of alternative policies and economic events.

Problems With National Economic Accounts

- Impact of distribution of income and externalities on prices and aggregation
- Many key near-market inputs to production excluded (Nature's Numbers and Beyond the Market)
 - Natural resources and environmental inputs
 - Investments in human and health
 - Household production
 - Investments in R&D and other intangibles.
- Many key determinants of utility not included
 - "Money can't buy you happiness"

National Economic Accounts



October 1995



IF THE GDP IS UP, WHY IS AMERICA DOWN?

by CLIFFORD COBB, TED HALSTEAD, AND JONATHAN ROWE

*Why we need new measures of progress,
why we do not have them, and how they would change
the social and political landscape*



Non-Market Production Accounts

- Earlier efforts have focused on near-market production activities in satellite accounts. For example, household production accounts are:
 - Combination of market and non-market inputs (ATUS data) to produce output
 - Valued at market value or proxy for market value
 - Double-entry accounts (and detailed I-O accounts)

Non-Market Production Accounts: Household Production

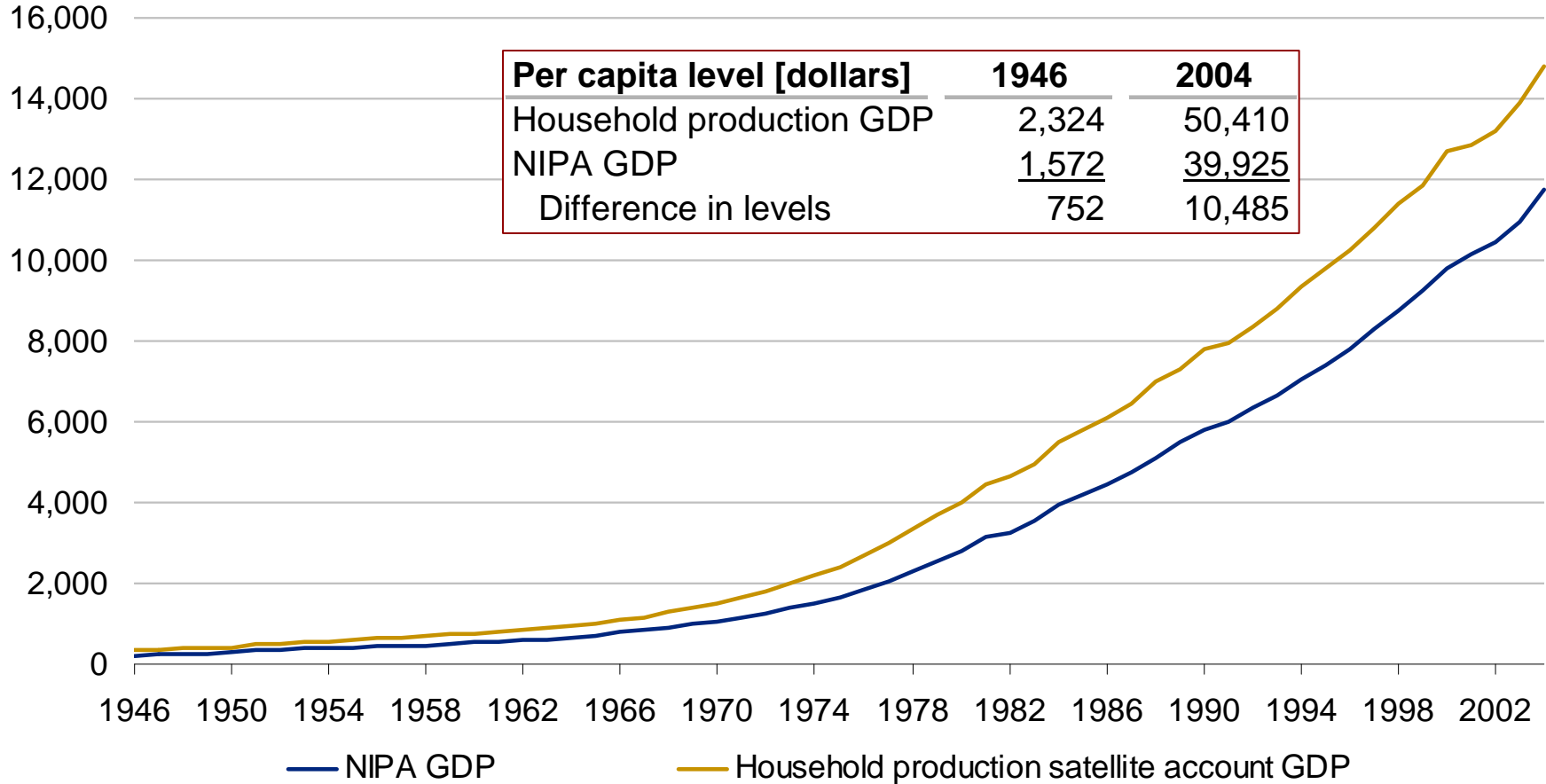
- Value:
 - More complete picture of sources of growth, determinants of demand for goods and services (trade off market vs. nonmarket); and over the business cycle.
 - Useful for a number of score-keeping and policy activities:
 - Rise in overall growth in production and living standards, not as dramatic as measured market GDP and GDP per capita.

BEA Household Production Satellite Accounts

- Overall level of measured economic activity in 2004 is estimated to have been over \$3 trillion, or 26 percent, higher if household production were added to GDP
 - GDP per capita is raised by \$10,000 from \$40,000 to \$50,000
- Accounting for household production lowers the long-term growth rate from 7.1 to 6.8 percent
 - Market production grew faster as women entered the labor force, but household production grew at a slower rate

GDP Trend Growth

[Billions of dollars]



Source: BEA NIPA tables 1.1.5 and authors' calculations.

Non-Market Production Accounts

- Useful baseline for expanded welfare analysis and policy:
 - If large external benefits to household production, may want to “add” on and use in consideration of tax incentives, health and child care programs, etc.
- Problem: still really don't address RFK's concerns about GNP:
 - “It measures everything in short, except that what makes life worthwhile.”
 - “beauty, integrity, wit, strength, courage, joy, wisdom, learning, compassion, and devotion”

How NTAs Compare to NEAs: Need

- Like the NEAs, the NTS clearly address a long-standing measurement gap.
 - Kuznets (1934) warned of the misuses of the economic accounts in the analysis of welfare.
 - The problem has been in finding a means of developing a comprehensive, consistent and objective index that goes beyond GDP and measures welfare.
 - BEA experience with environmental accounting in the 1990s suggest that political decision makers are skeptical of quantitative measures for non-market phenomena.
- Unlike the demand for national economic accounts created by the depression and WWII, the policy-need for, and applicability of, NTS estimates may be perceived as longer-term and less pressing.

How the NTAs Compare to NEAs: Comprehensiveness

- Like the NIPAs are a comprehensive measure of market activity and its components, the NTAs are a comprehensive measure of total utility and its parts.
 - Covers all activities over the course of 24 hours.
 - Designed to covers the range of utility emotions from “happy” to “unhappy” with a broad variety of emotions.
 - Might focus on (1-U index) rather than U-index
 - Presents an unduplicated count of activities and associated emotions that allows analysis of how the parts affect the total U-index.
 - How is utility that doesn't quite fit into the episode-based happiness-unhappiness index covered?
 - Meritorious vs. hedonic measures (see Kennedy's list)?
 - Other external factors (War or recession)?
 - Another source of differences in subjective vs. episode-based measures?

How do the NTAs Compare to NEAs?

Rank of activities in terms of average enjoyment

Activity	DRM (Enjoy)	Juster Enjoy/ Dislike
Child care	9	2
Commuting from work	12	11
Commuting to work	13	13
Cooking	8	9
Dinner	3	3
Housework	10	12
Lunch	4	4
Phone at home	7	10
Relaxing	2	1
Socializing after work	1	7
Socializing at work	6	5
Watching TV	5	6
Working	11	8

Source: (Table 4.1) Krueger, Kahneman, Schkade, Schwarz and Stone

How the NTAs Compare to NEAs: Consistent Valuation and Aggregation

- Consistent Valuation/Aggregation:
 - Avoids long-standing problem of putting a subjective value on happiness
 - Use individual's own evaluations by activity during specific blocks of time
 - Aggregated using blocks of time

How the NTAs compare to the NEAs: Consistent Valuation and Aggregation

- What does time aggregation imply about extreme emotions?
 - What does it imply about the ability to aggregate?
 - With prices, lots of room to express different valuations other than happy, neutral, and unhappy.
- What does time aggregation imply about comparisons over time?
 - Individuals are able to adapt to a wide range of circumstances.
 - Evidence from cross-section, cross-country, and time series data suggest a lot of adaption toward some common level of happiness.

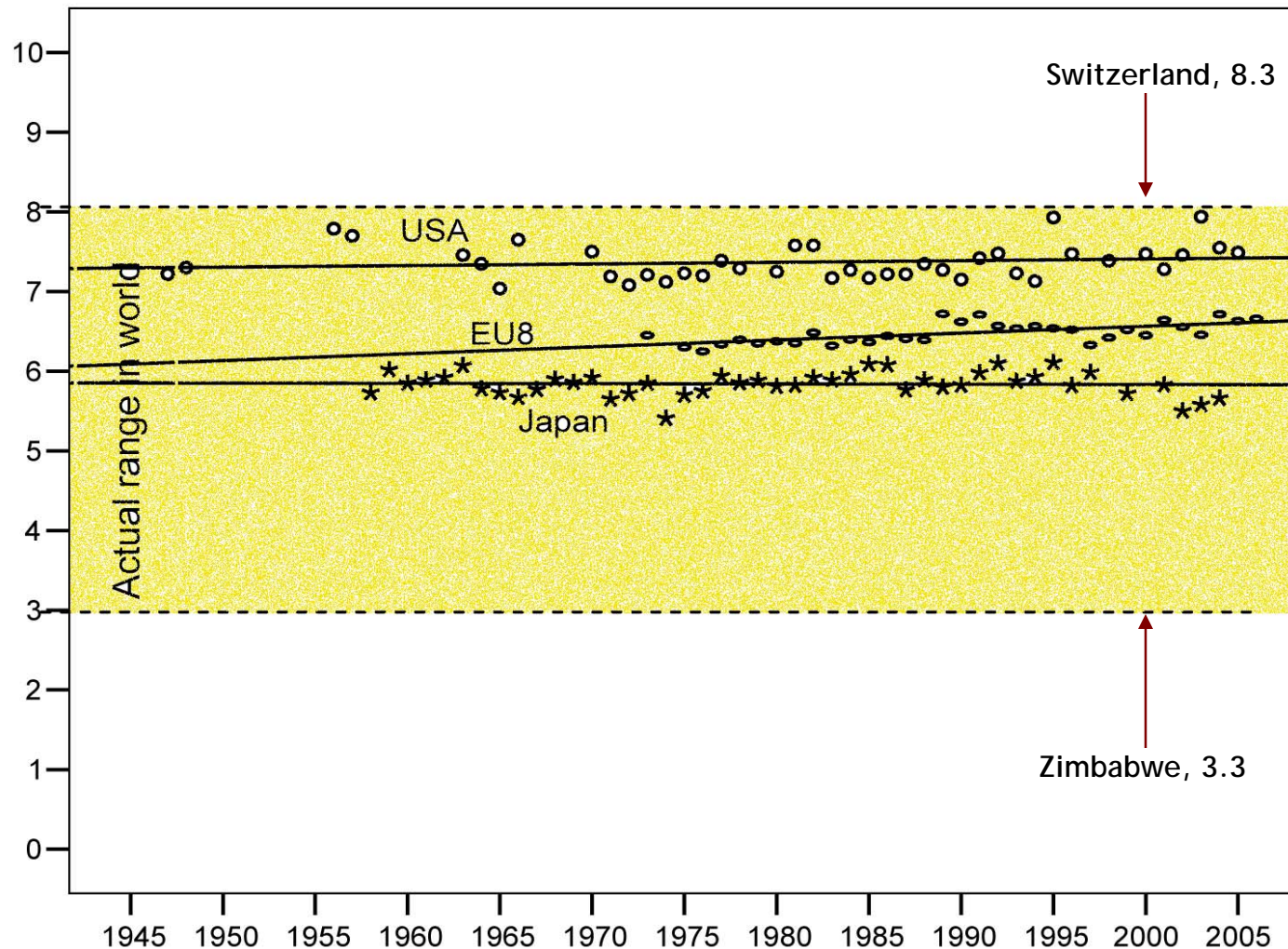
How the NTAs Compare to NEAs

U-Index and allocation of time across activities

<i>Focal Activity</i>	U-index per activity	Percent of time
Walking	0.04	0.63%
Making love	0.05	0.77%
Exercise	0.06	0.88%
Playing	0.07	1.47%
Reading, non-work	0.09	2.97%
Eating	0.10	5.22%
Prayer	0.11	1.70%
TV	0.12	7.07%
Relaxing	0.13	2.88%
Preparing food	0.14	2.92%
Talking, non-work	0.14	9.35%
Grooming	0.15	5.19%
Other	0.16	8.54%
Housework	0.18	5.91%
Sleep	0.18	2.70%
Other travel	0.20	3.23%
Shop	0.22	4.86%
Computer, non-work	0.23	2.52%
Childcare	0.24	6.85%
Commute	0.27	2.22%
Work	0.29	22.10%

International comparisons of happiness

Trend Happiness in the EU8, U.S. and Japan



Source: Veenhoven, Ruut, "Measures of Gross National Happiness," prepared for presentation at OECD conference on Measurability and policy relevance of happiness.

How the NTAs Compare to NEAs: Double-Entry Accounting

- Possible combination of hh production accounts and NTAs: Supply and Use Tables
 - Supply of inputs to production of happiness by activity
 - Uses of inputs to “produce” output of happiness
 - Could use for cost-effectiveness and analysis of economic variables that affect happiness that can be affected by tax incentives, regulations, or investments in infrastructure.
- Integrate ATUS, CSX, and NTA
 - Potential for major advance in analysis of consumer demand and economic policy (health care, etc)

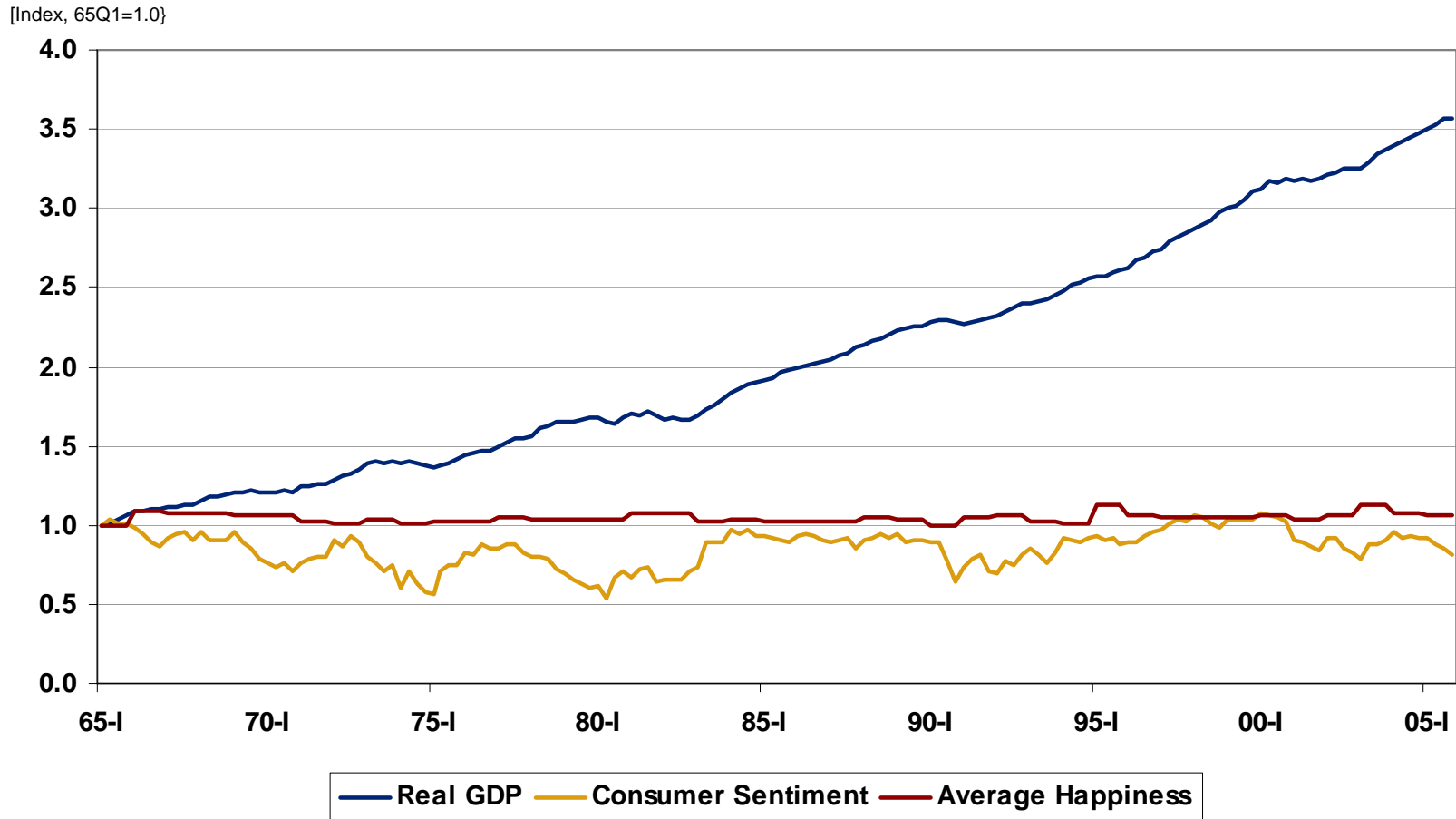
How do the NTAs Compare to NEAs: Timeliness

- If U-index changes slowly may not need too timely
 - Constructed average happiness Index (Veenhoven data) shows very little change over time.
 - Synthetic U-index over time only reflects changes in the composition of time use, not changes in happiness over time.
- Might want at least annual updates for major events like downturns, war, and elections
 - “Misery” index and “are you better off today than you were 8 years ago?”

How the NTAs Compare to NEAs: Relevance

- Endlessly fascinating for score-keeping,
 - but if index is relatively stable over time -- with limited response to key events -- uses for public policy or in forming public opinions may be limited.
- Regular updates may be needed to gauge how the NTA's change in response to short-term and longer-term developments.
- Other key use may be framework and its use for looking at how different events and policies may affect the whole and the parts of the nations happiness.

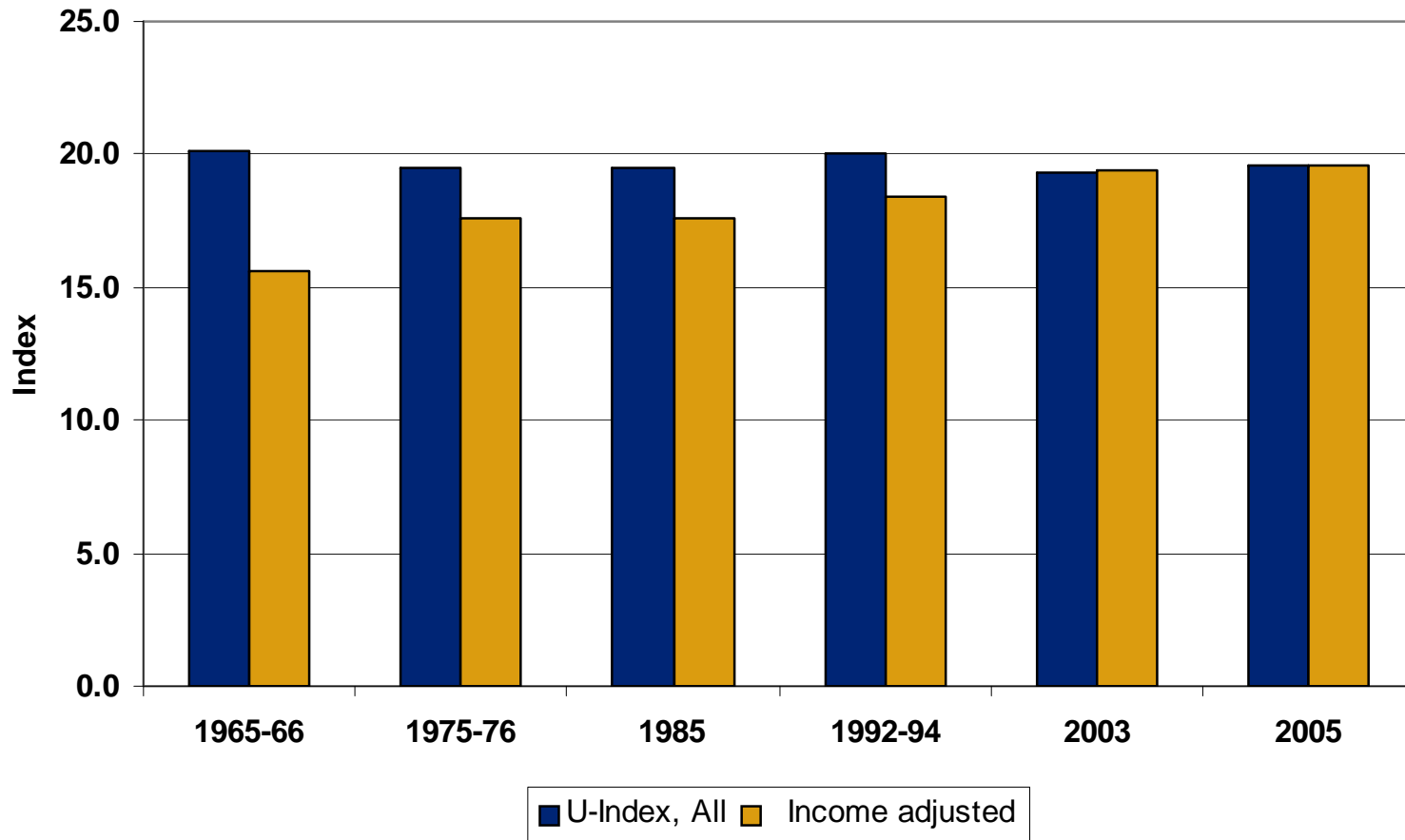
How the NTAs Compare to NEAs



Source: BEA, University of Michigan, Veenhoven, R., World Database of Happiness, Distributional Findings in Nations

How the NTAs Compare to NEAs

Synthetic Time Use and Income Adjusted Synthetic Time Use



Source data: Krueger, Kahneman, Schkade, Schwarz and Stone, Census Bureau