The Evolution and Determinants of the Turkish Private Saving Rate: What Lessons for Policy?
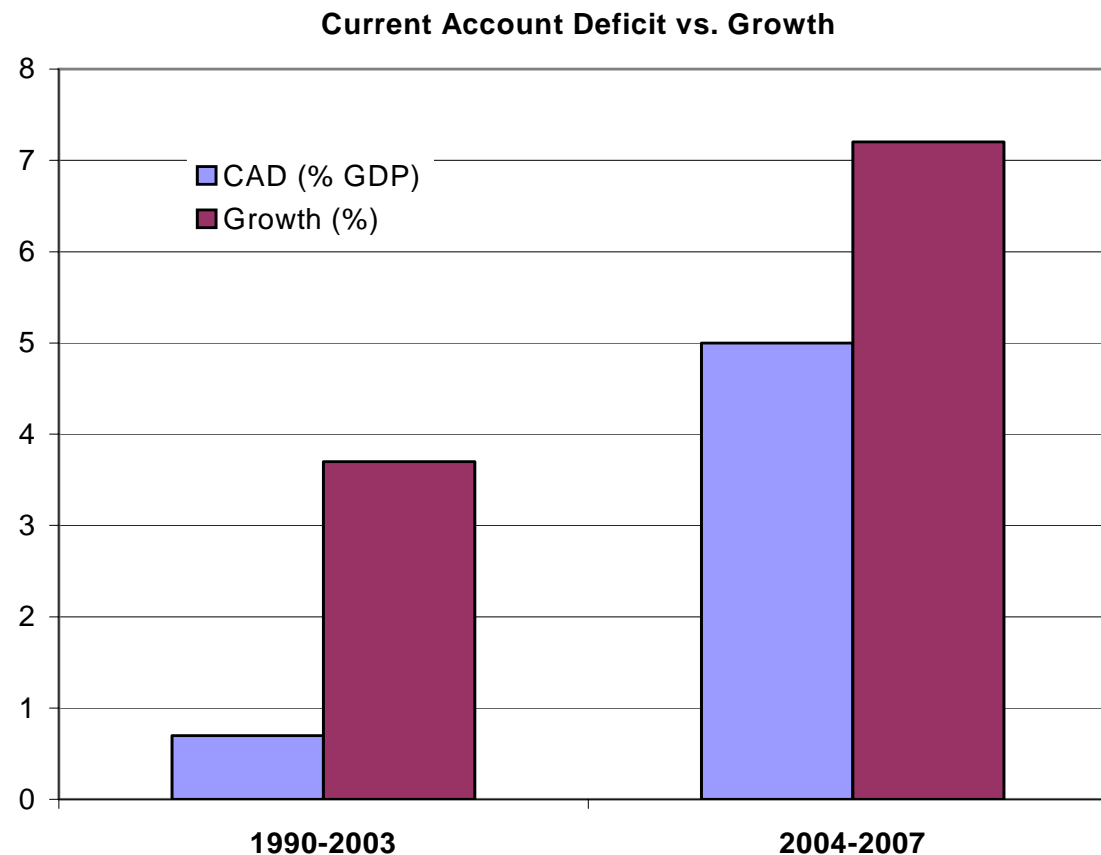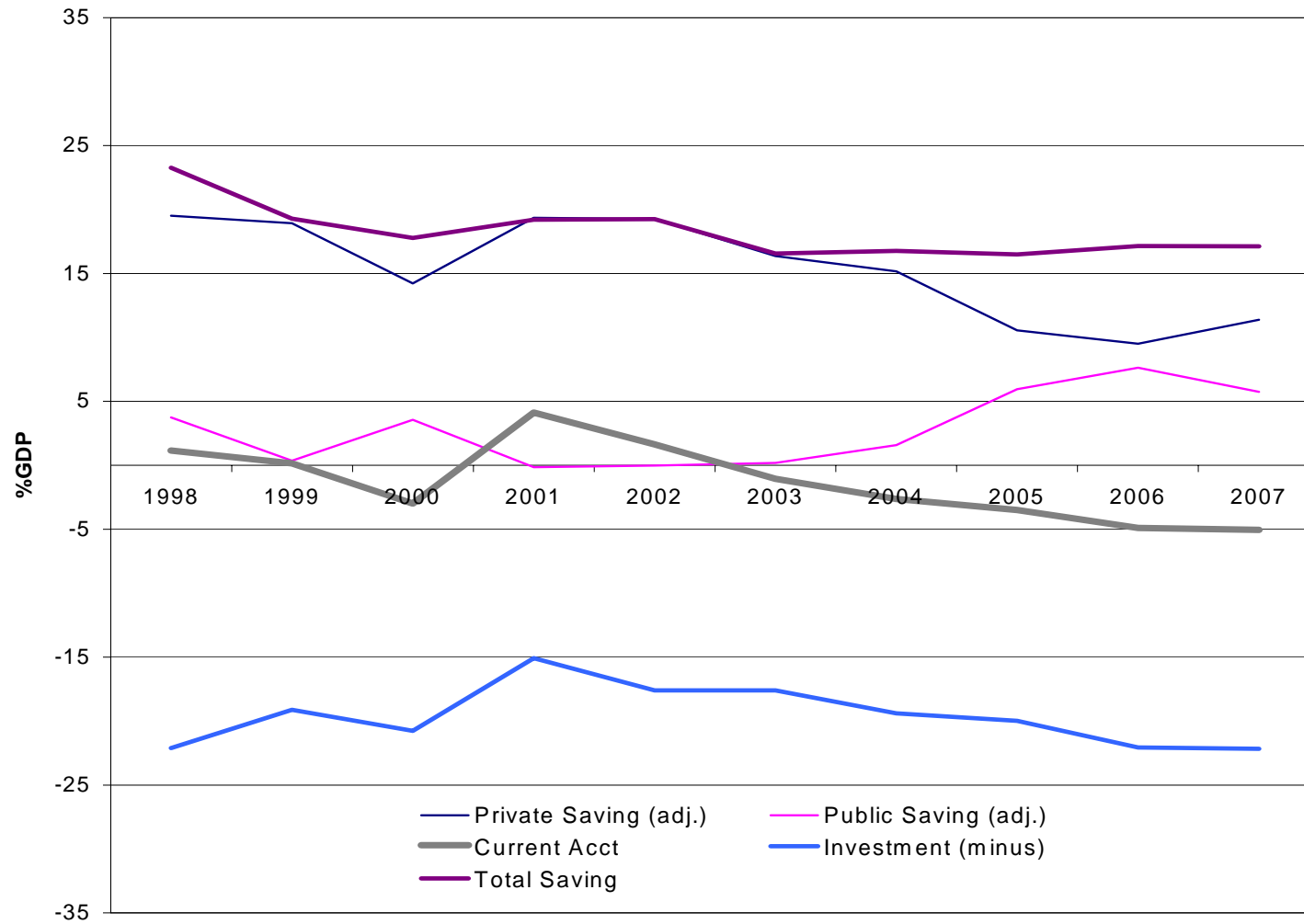
Caroline Van Rijckeghem & Murat Ucer

What's the problem?

- The current account deficit – the gap between investment and domestic savings -- averaged 5% of GDP during 2004-07, and it's rising…

- Episodes of high growth are typically associated with high CAD

Current Account Deficit vs. Growth

What drove the CAD?

Current Account, Investment, and Saving

Why worry?

- A large current account deficit is a well-known source of vulnerability (e.g., early warning literature; 4-5% of GDP is typically considered dangerous, though there are attenuating factors in the Turkish case)

- Foreign financing implies deterioration in net international position, and future interest and dividend repatriation. This may sustain the deterioration in the CAD, and at some point influence investors' willingness to finance it and/or create a political backlash

- Domestic savings acts as a catalyst for attracting FDI

- Recent research on the effects of financial globalization finds high growth episodes are typically associated with current account *surpluses,* and with high domestic savings (though, this does not prove a *causal* link from savings to growth)

Everyone is wondering about it…

"The saving ratio is low in Turkey, and will probably stay low. Because we have a young population. We have about 15 million students. Our average age is around 28. […] This means we shall continue consuming. We also have a relaxed Mediterranean culture. It is difficult for us to save 30 percent like China, which has neither health, nor social security system. But with social security reform, we shall increase savings in the medium and longer term. […] Over the longer run we will switch from PAYG to a fully funded pension system"

Treasury Minister Mehmet Simsek, answering the question on why savings are low in Turkey, Capital, Business Monthly, April 2008.

Questions…

- Are Turkish total and private saving rates low by international and historical standards?
- Why has private saving declined in recent years?
- What are the prospects?
- Can anything be done? If any, what role is there for policy?

Overview of the Presentation

Our key purpose is to start exploring the issue from various angles…

- Main empirical results in the literature
- International and historical comparisons
  - Is Turkish saving behavior "normal"?
- The "demographic dividend"
- Household survey data
  - Are savings trends shared among various groups of households?
- Policy conclusions

Key Results in the Empirical Literature

- Panel data studies
  - The World Bank Savings Project: 150 countries, 1965-94, inflation-adjusted private savings
  - IMF WEO: 27 emerging markets, 1972-2004, national savings
- Conclusions from the studies
  - Growth (+): Productivity growth affects the young who are the savers
  - Credit (-): Access to credit/relaxed liquidity constraints boost consumption
  - Inflation (+): Higher uncertainty => higher savings
  - Terms of trade (+): Higher windfall from Px/Pm => higher savings
  - Old and Youth Dependency Ratios (-): More dependents, less savings
  - Public savings (-)…

Key Results in the Empirical Literature

- "Ricardian" offset on public savings of 30-70% in long-run
  - That is, when public savings increases by 1% of GDP, private savings declines by 0.3-0.7% in the long-run

- Various explanations…
  - Rational agents believe *future* taxes (on them and their offspring) will be less when public savings increases. E.g, if the increase in public savings is driven by higher taxes, *permanent* disposable income is left unchanged and households do not reduce their consumption. Because current disposable income falls, private savings declines
  - Perhaps agents are not that rational and consumption patterns are simply persistent in the face of tax increases
  - Reduced crowding out by the government leads to lower interest rates and higher credit to the private sector
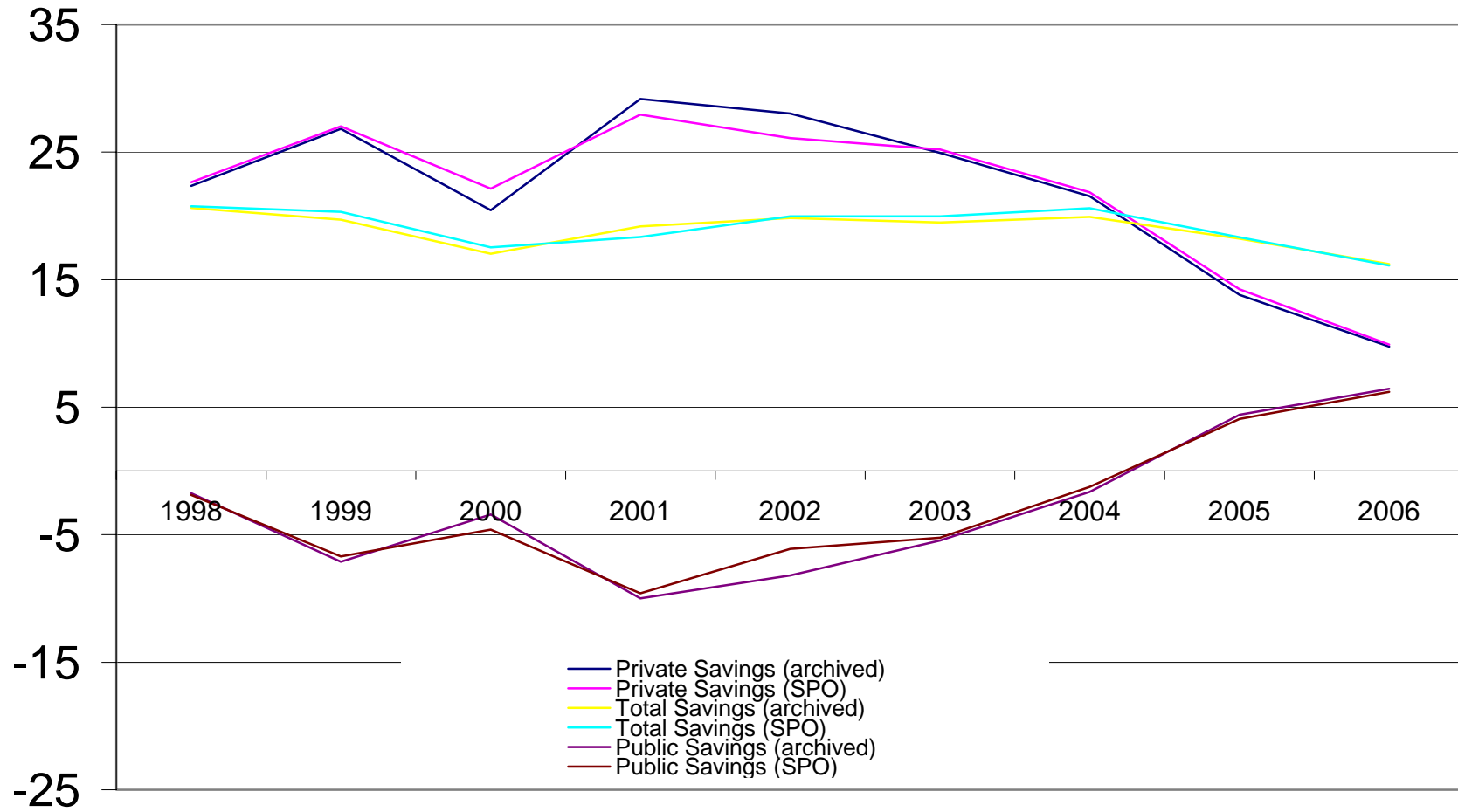
Data Issues

- Turkish National Income Accounts have been revised early this year. New series (1998-present) replaced an outdated old series (1987-2006). We now have only G<u>D</u>P not G<u>N</u>P

- Calculating *domestic* savings is relatively simple:
  $S^D = I$ (including stocks) $+ (X-M)$

- But *private* savings can be tricky because we need the right data on government deficit, which can be complicated in Turkey:

  $S^P = I^P +$ Government Deficit $+ (X-M)$

  $S^G = I^G -$ Government Deficit

- Typically, SPO does this, but not done yet for the new series.

- Caution on the data: By construction, total saving is a residual and private saving a double residual…

Data Issues

What have we done?

- We produced our own saving series, including private savings, which replicate SPO calculations well, when applied to 1987 NIA data

- We've also done inflation-adjustment for Turkey to private/public savings data

- For other country groups used in international comparisons, we used IMF WEO data

Domestic Savings: Comparison of our method using archived data and SPO Series

- Private Savings (archived)
- Private Savings (SPO)
- Total Savings (archived)
- Total Savings (SPO)
- Public Savings (archived)
- Public Savings (SPO)

Data issues

- Inflation adjustment on private saving
  - Assets are eroded by inflation, so saving overstates asset accumulation
  - Unadjusted data: $S^p_t = A_t - A_{t-1}$
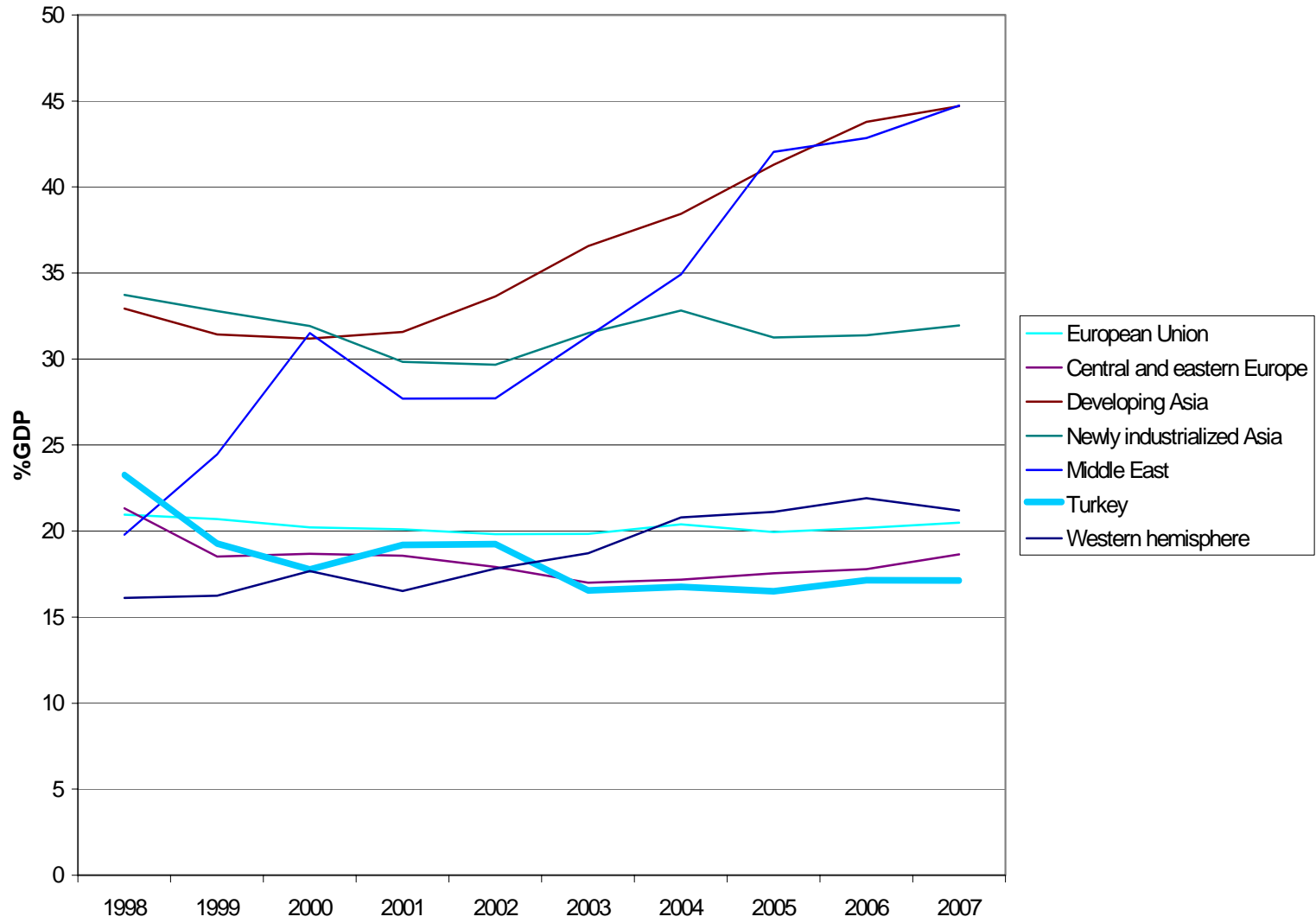 - Adjusted data: $S^p_t = (A_t/p_t - A_{t-1}/p_{t-1}) \, p_t$

  Inflation adjustment is the difference between the adjusted and unadjusted data

- Inflation adjustment on public saving
  = minus the above adjustment

International Perspective

National Savings Rates

Legend:
- European Union
- Central and eastern Europe
- Developing Asia
- Newly industrialized Asia
- Middle East
- Turkey
- Western hemisphere

Y-axis: %GDP

X-axis: 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007

National Savings

- Turkey's *national* savings rate of 17% of GDP (2007 data) is low by world as well as emerging market standards.
- But a closer look shows that this is largely a reflection of very high savings rates in Asian and Middle-East economies.
- Turkey's savings rate is comparable to that in Central and Eastern Europe (chart includes Turkey) and is not much lower than that in the EU, or the Western Hemisphere countries.

National Savings

- Turkey ranks 96th out of 171 countries.

  – Countries with similar savings rates include Italy, Costa Rica, Chile, Pakistan, Israel, Poland, France

  – Countries with lower savings rates include Bulgaria, Hungary, Greece, UK, US, Iceland, Lebanon, most African countries

  – Countries with higher savings rates include all of Asia, oil-exporters, Switzerland, Netherlands, Czech Republic, Ukraine, Argentina, Canada, Germany, Egypt

Source: WDI, 2005

Private Savings

- Turkey's *private* savings rate of some 14% of GDP (2007 data) is low by world as well as emerging market standards.

- Excluding China, East Asia and oil producers, private savings was about 21.5% of GDP (2004 data), 8% of GDP more than in Turkey

Public Savings

- Turkey's *public* saving rate of around 4% of GDP (2007 data), lower than in China, East Asia and oil producers (6-8% of GDP, 2004 data) and higher than in other emerging markets (-0.5% of GDP)

- This positive public saving helps narrow the gap between national saving in Turkey, and emerging markets excluding China, East Asia and oil producers

Is this what one would expect?

Not really: *Determinants* of savings do not seem particularly poor in Turkey, from a comparative perspective…

Global Comparisons of Savings Determinants

	Turkey	Latin America & Carribean	Central & E. Europe	Developing Asia	Middle East	Newly Indus-trialized Asia	Advanced Economies
Real GDP per capita, % change 2007/02	32	19	32	45	20	25	13
Credit to private sector/GDP, 2005	26	28	50	100	50	70	90
Young dependency ratio 0-19, 2008	33	37	26	36	43	24	23
Old age dependency ratio 65+, 2008	7	7	12	6	5	10	16
Terms of trade, % change 2007/02	1	24	(1)	(1)	48	(7)	(1)
Inflation, 2007	8	6	7	6	11	4	3

Sources: US Census Bureau, WEO April 2008, IFS, World Development Indicators.
Newly industrialized Asia comprises Hong Kong, Korea, Singapore and Taiwan.

In a nutshell…

- Growth is lower than in Asia, the youth dependency ratio higher than in advanced countries, the terms of trade worse than in Latin America and the Middle East, and public savings are relatively high, but then again growth and inflation are higher than in most regions and credit and dependency ratios lower than in most.
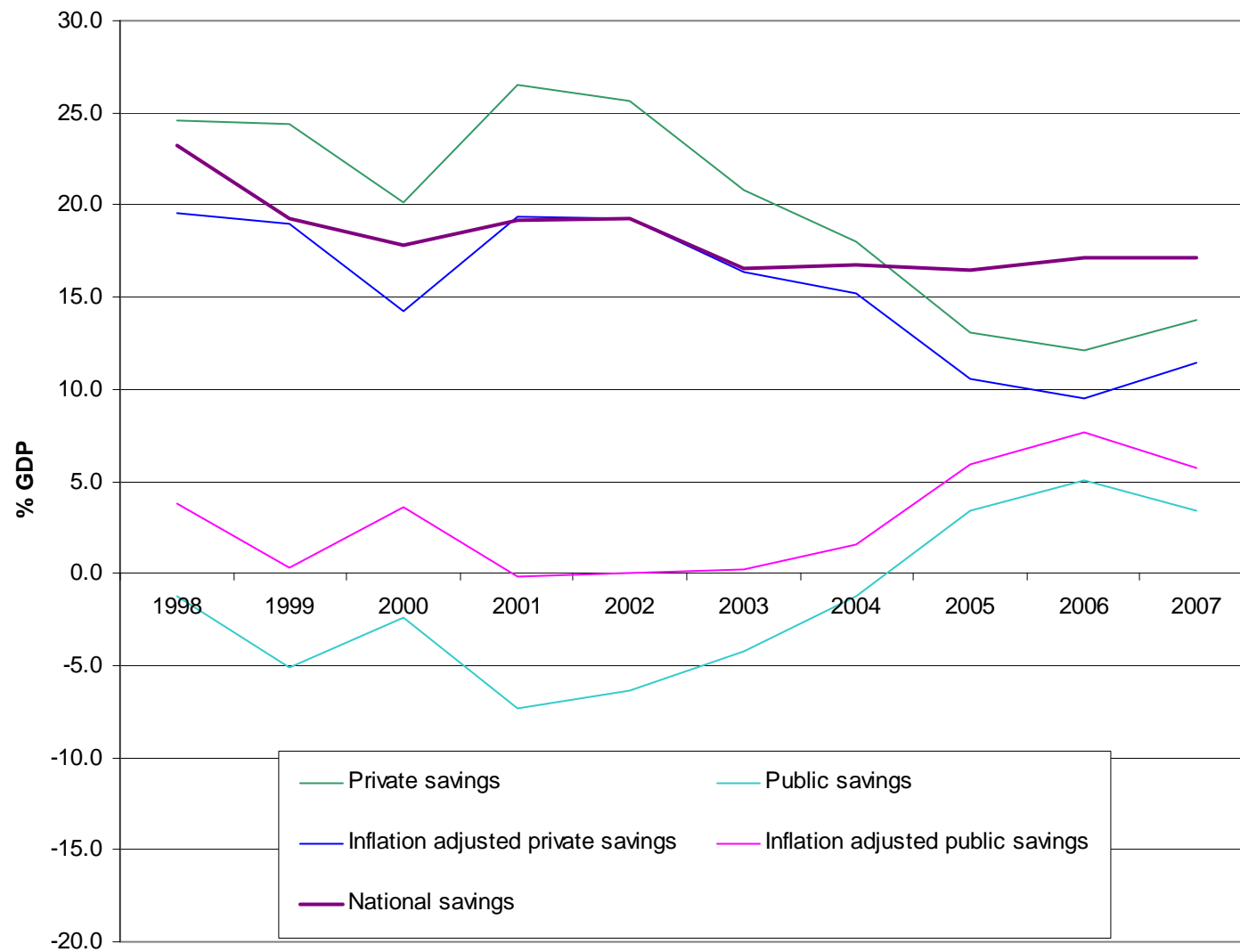
Any Lessons from China?

Well-accepted determinants of China's high saving rate:

- Low youth dependency ratio
- Precautionary saving because of uncertainty
- Retirement saving (low retirement benefits/one child policy)
- "Investment-motivated" savings…
  - Banking sector does not intermediate savings
  - High retained earnings in corporate sector
  - Households sector directly finances investment

Historical Perspective

Unadjusted and Adjusted Savings Rates, new National Accounts Data

Chart showing savings rates as % GDP from 1998 to 2007, with the following series:
- Private savings
- Public savings
- Inflation adjusted private savings
- Inflation adjusted public savings
- National savings

Y-axis labeled "% GDP" ranging from -20.0 to 30.0.

What are the key patterns?

- Total savings almost flat since 2000
- Private and public savings are mirror images
- Inflation-adjusted private savings show wild swings:
  - Was on average 17.5% of GDP between 1998-2004
  - Declined sharply to about 10% of GDP in 2005-06
  - Drop from peak (2001) to trough (2006) was 10% of GDP
  - Estimated to have risen in 2007 to over 11%
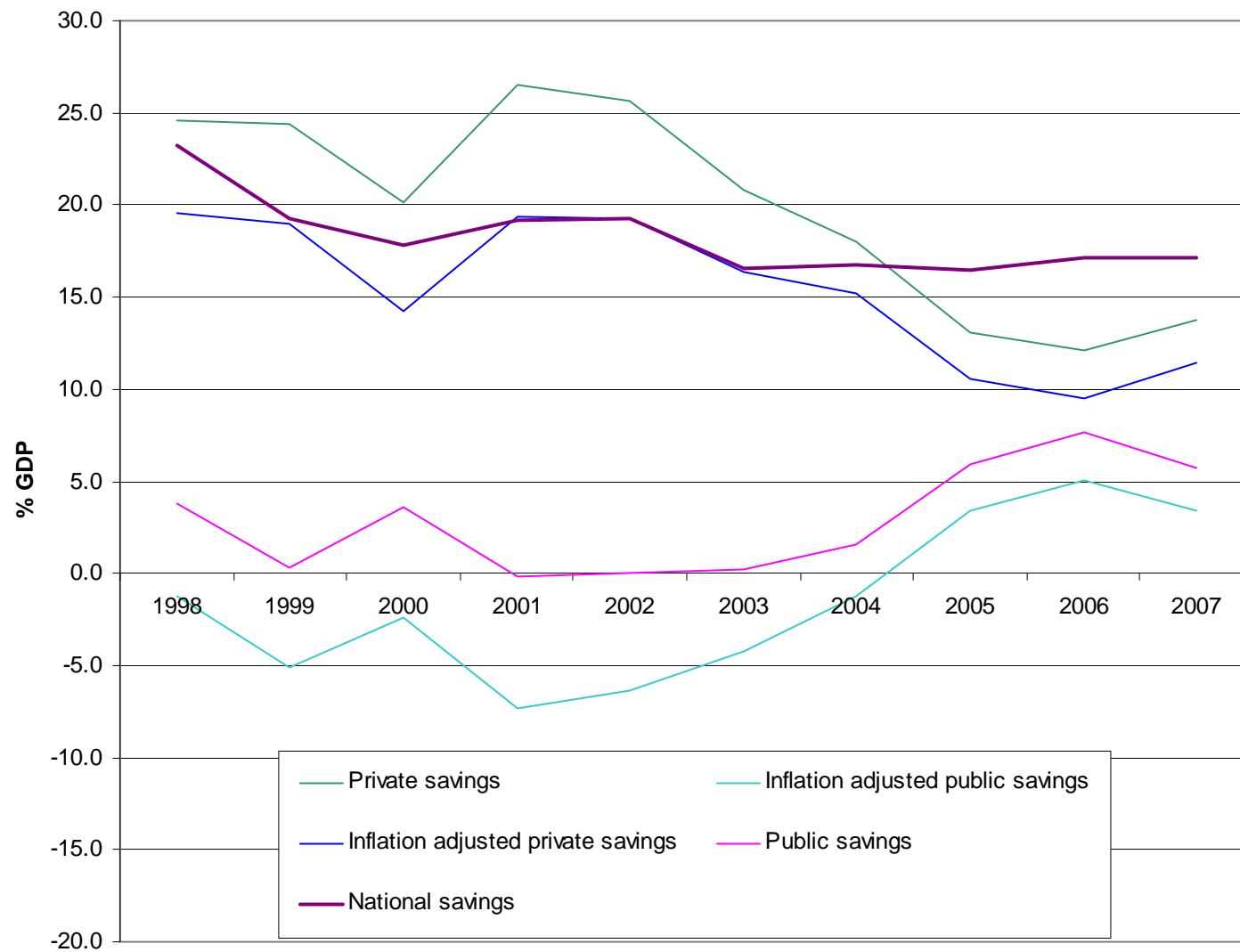- Inflation-adjusted public savings improved by 8% of GDP from 2001 to 2005

Why the sharp drop?

- IMF (2007) time series study on Turkey shows that the drop during 2001-05 is explained by the net effects of:
    - Increase in the public savings rate (-)
    - Decline in inflation (-)
    - Increase in growth (+)
- Surprisingly, IMF finds no role for credit and real interest rates. But that's probably because of collinearity between credit, budget deficit and real interest rates…
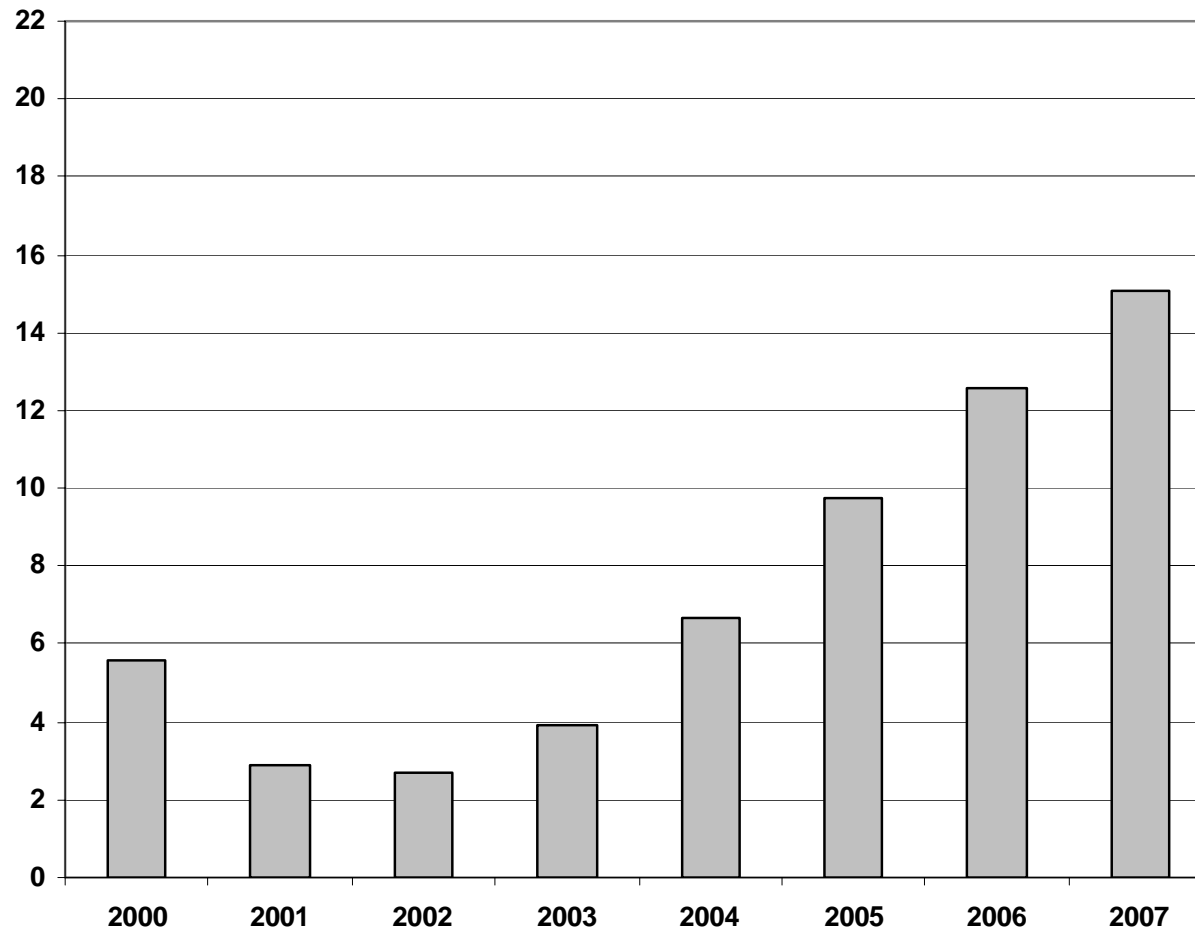
Role of credit and real interest rate

- There are reasons to believe credit availability and lower real rates played an important role
- Former studies on Turkey found a role (Ozcan, Gunay, and Ertac, 2003)
- Cross-country studies find a role
- Credit has boomed in recent years
- Improvement in confidence was primarily driven by improved durable goods demand, rather than a sharp increase in overall confidence

Unadjusted and Adjusted Savings Rates, new National Accounts Data

Chart showing savings rates as % GDP from 1998 to 2007, with the following series:
- Private savings
- Inflation adjusted public savings
- Inflation adjusted private savings
- Public savings
- National savings

Retail Loans to Private Final Consumption Expenditures
(%, share)

# CNBC-e Consumer Confidence Index
(Jan 2002=100)
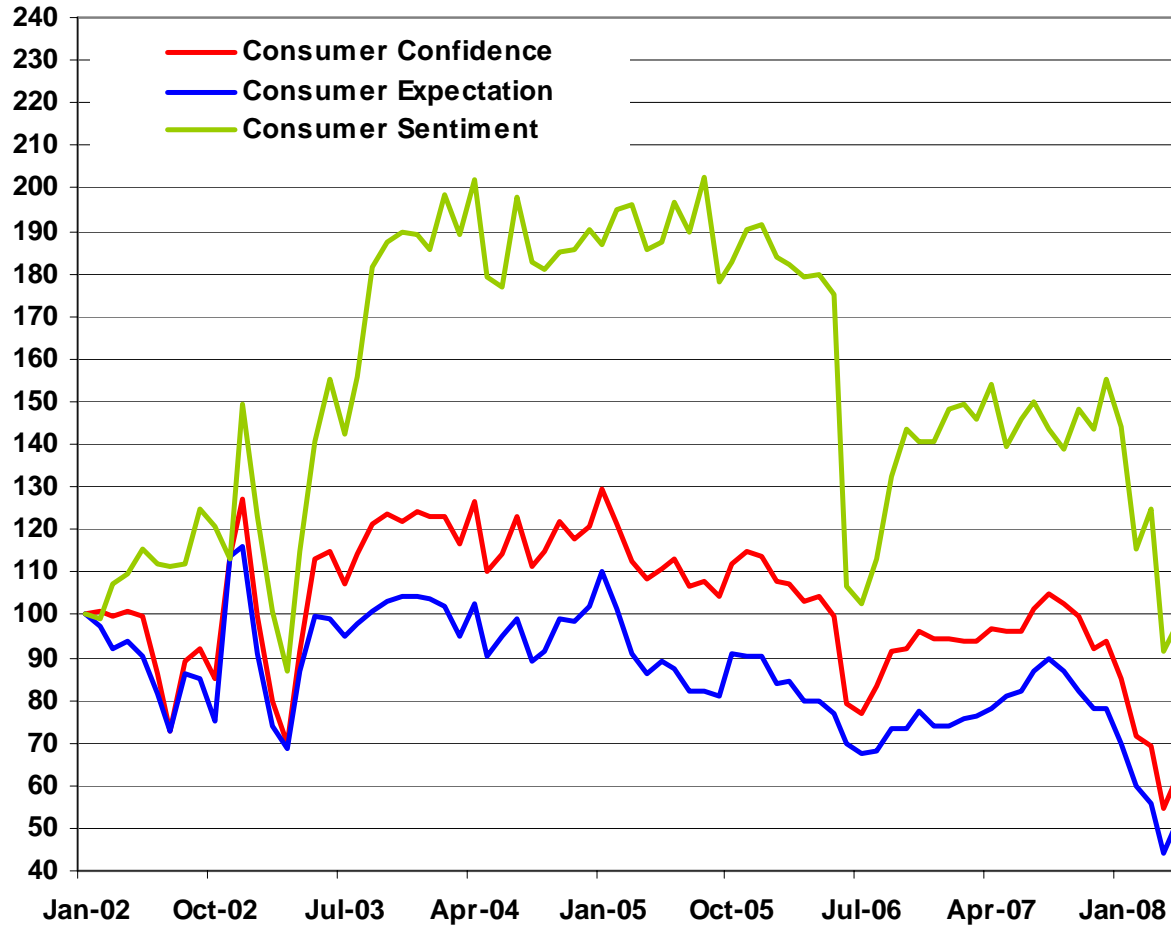
Data note: Consumer sentiment: based on appetite to buy durable goods; Consumer confidence: based on own financial situation, current economic situation and appetite to buy durable goods; Consumer expectation: based on expectations of the future

Any role for (adverse) terms of trade?

- Turkey is a heavy importer of energy: its net import bill has amounted to some $30 billion in 2007, or over 4% of GDP, and oil prices have sky-rocketed in recent years, having gone up from less than $30 p/b (Brent) in early 2004, to over $120 p/b in early 2008 – a four-fold increase in 4 years.

- In other words, one could imagine that the terms of trade effect, which is also significant in panel-data regressions, would have had a major contribution to the decline in private savings during this period.

- Somewhat surprisingly, however, the oil price effect on the current account as a percent of GDP was quite limited, to less than 1 percent of GDP, during 2004-2007.

**Current Account Balance**
(as % GDP)
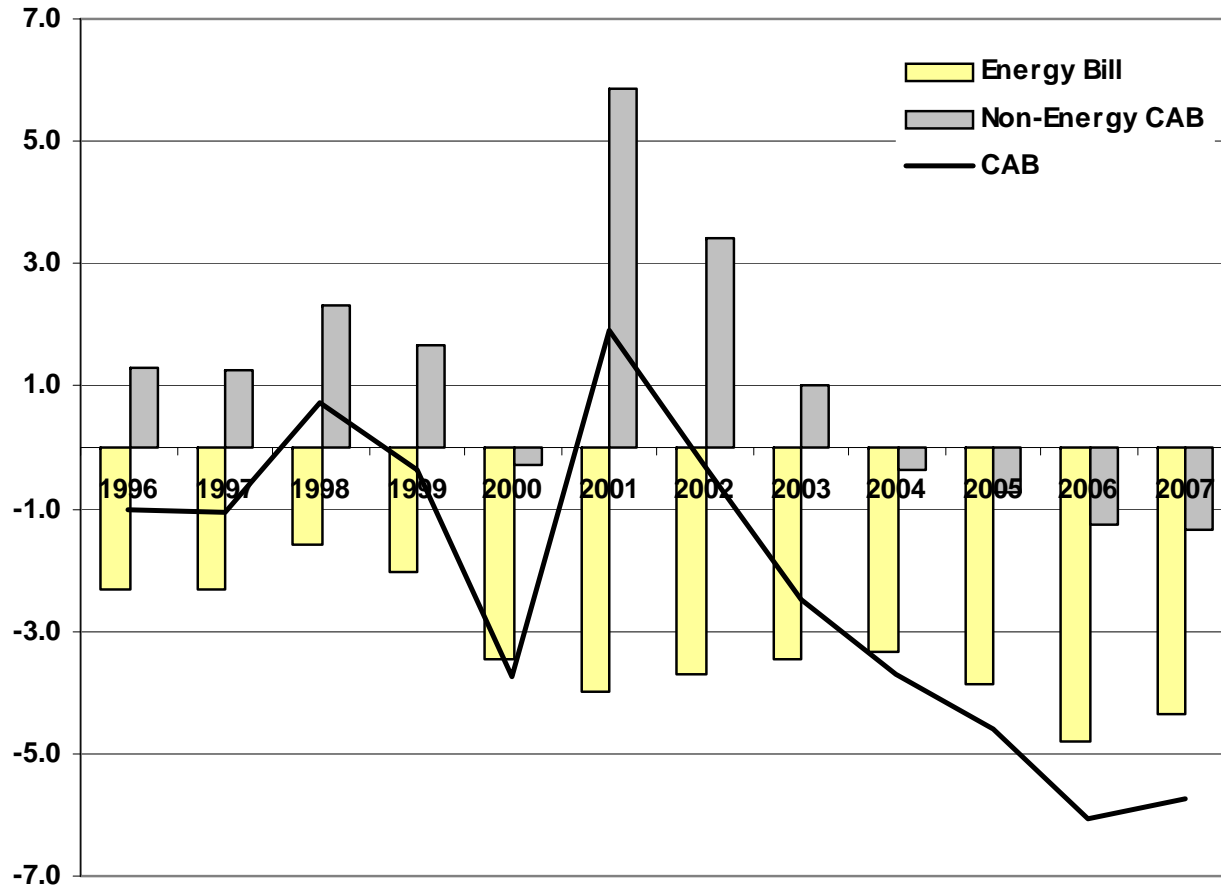
Will things get better?

- We do see a recent increase in savings probably thanks to higher interest rates and lower credit growth, though this may reverse as conditions improve
- Continued increases in energy prices will probably start to affect private savings more visibly
- We can expect a "demographic dividend" as result of falling fertility and youth dependency ratio
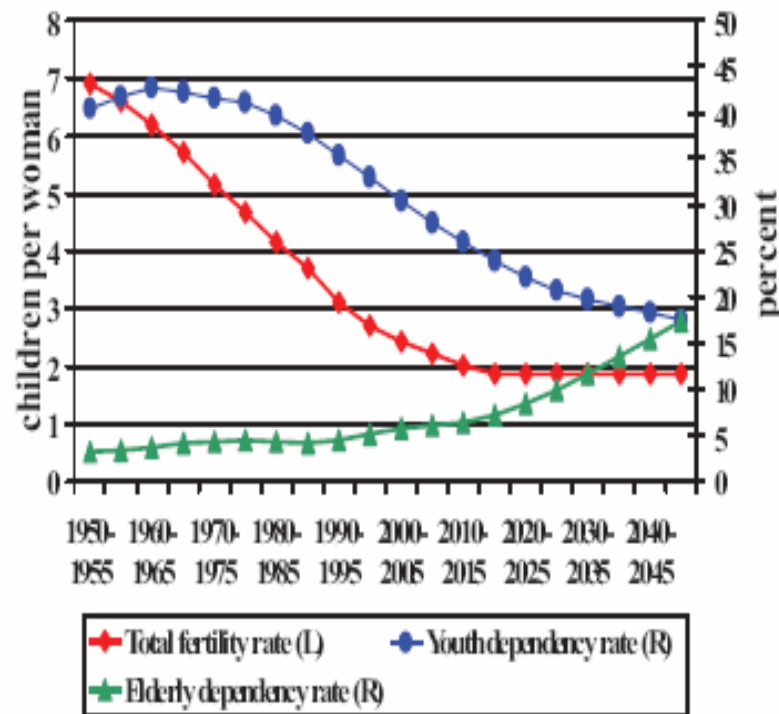
Demographic dividend

- Youth dependency ratio is projected to decline sharply by 2025
- Population in the 10-35 age-group is large, this means that by 2025 the 35-50 age-group will be large

Figure 1.1: Turkey's Demographic Transition, 1950-2050

Crude birth rate (L) · Crude death rate (L) · Population (R)
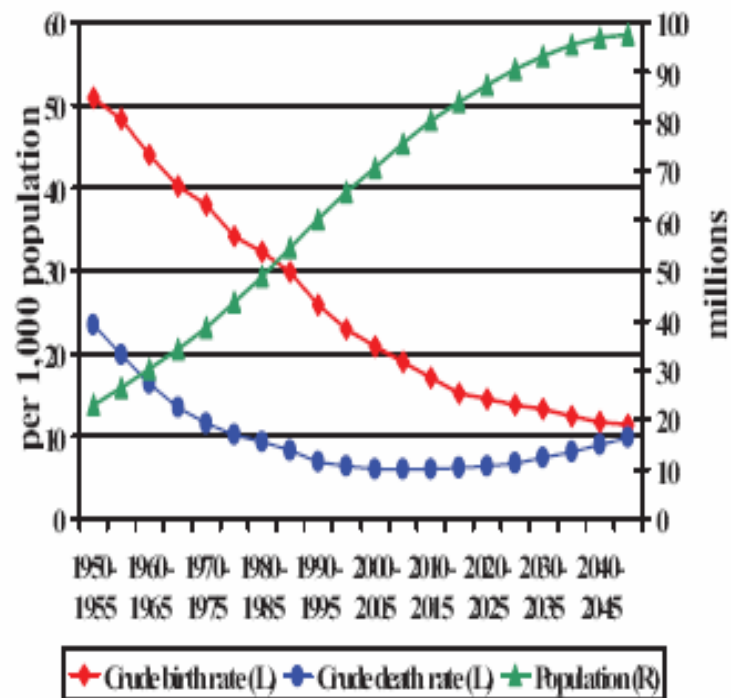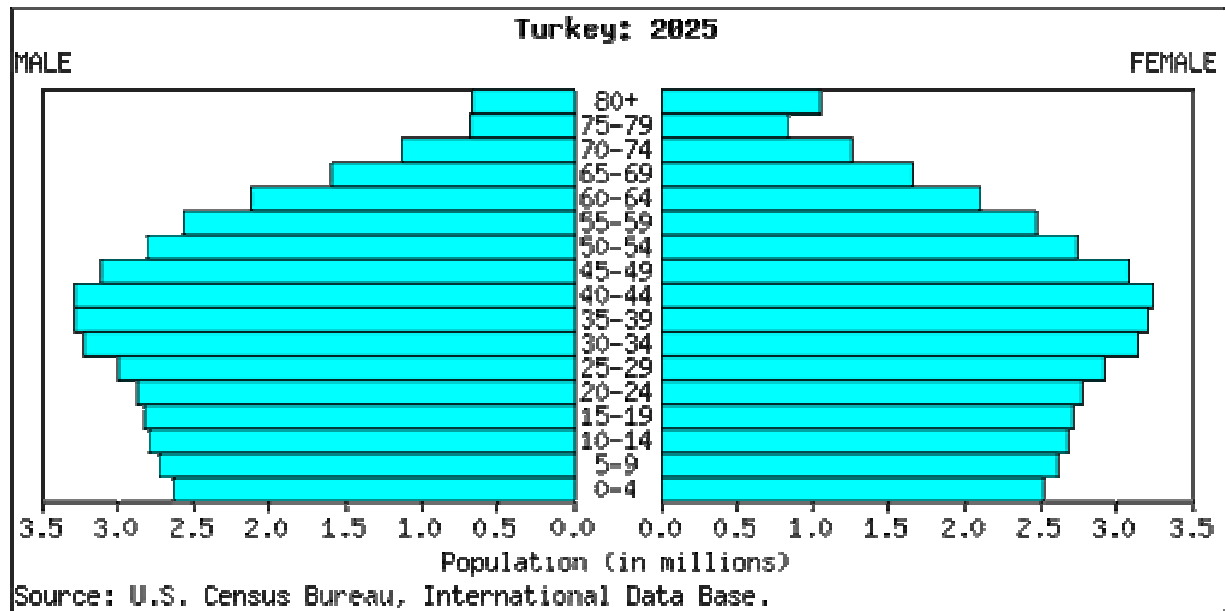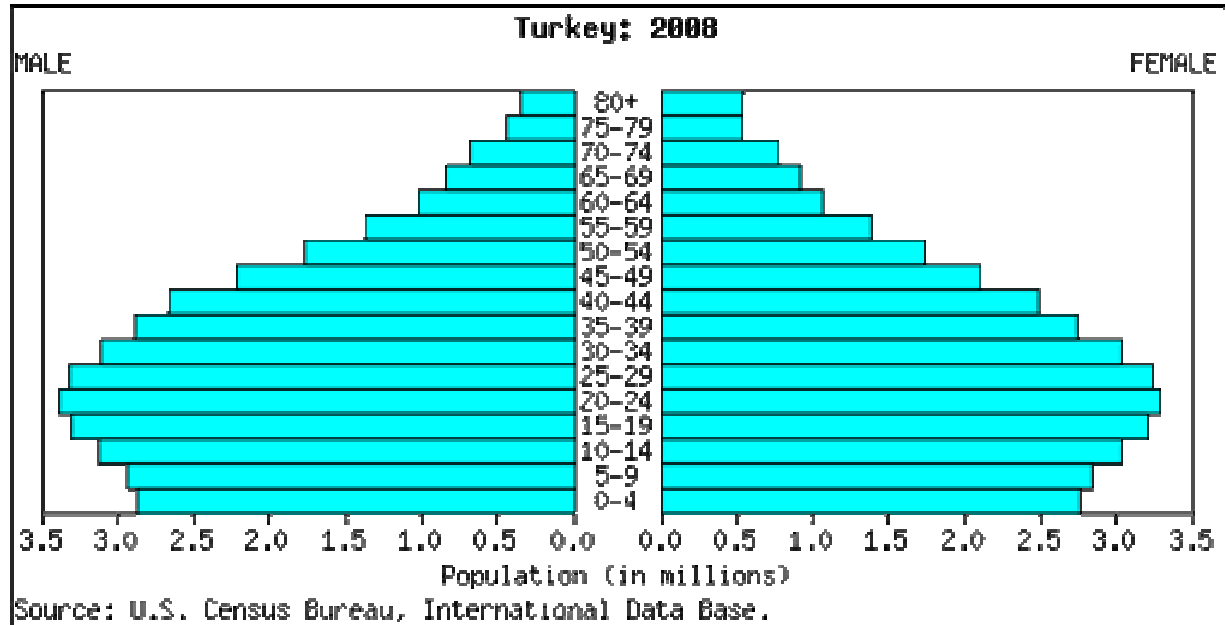
Source: UN Population Division 2002, Medium variant

Figure 1.2: Fertility and Dependency Rates 1950-2050

Total fertility rate (L) · Youth dependency rate (R)
Elderly dependency rate (R)

Source: UN Population Division 2002, Medium variant

Turkey: 2008

MALE — FEMALE

	80+
	75-79
	70-74
	65-69
	60-64
	55-59
	50-54
	45-49
	40-44
	35-39
	30-34
	25-29
	20-24
	15-19
	10-14
	5-9
	0-4

3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0   0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5

Population (in millions)

Turkey: 2025

MALE — FEMALE

	80+
	75-79
	70-74
	65-69
	60-64
	55-59
	50-54
	45-49
	40-44
	35-39
	30-34
	25-29
	20-24
	15-19
	10-14
	5-9
	0-4

3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0   0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5

Population (in millions)

Demographic dividend

- First demographic dividend: Lower child-rearing expenditures because of lower fertility rates

- Second demographic dividend: More retirement saving because of the breakdown of the family support system

How large is the dividend?

The question can be addressed from two angles…

- Use existing panel data regression results

- Project savings using the age-profile of savings and future age-profile of population

  – Method 1: Determine age-profile of savings from regression analysis

  – Method 2: Determine age-profile of savings based on assumptions for spending as a function of age

Panel data result

Results (Loayza et. al., 2000) suggest that <u>one</u> percentage point *reduction* in youth dependency ratio is associated with a <u>0.7</u> percentage point *increase* in the saving rate. For Turkey this implies a rise in private savings by about 5 percent of GDP by 2025…

Age-profile from regression analysis

- Estimate contribution of persons of different ages to saving of the household (Deaton and Paxson, 2000).

  - Regress $S_h = \Sigma \beta_a n_{ah} + \varepsilon_h$

  where $S_h =$ is household saving, n_{ah} is the number of persons of age-group $\underline{a}$ in the household.

- β_a measures the average contribution to household income by persons of age-group $\underline{a}$.

- Simulate future saving using projected population shares using $S = \beta_a n_a$
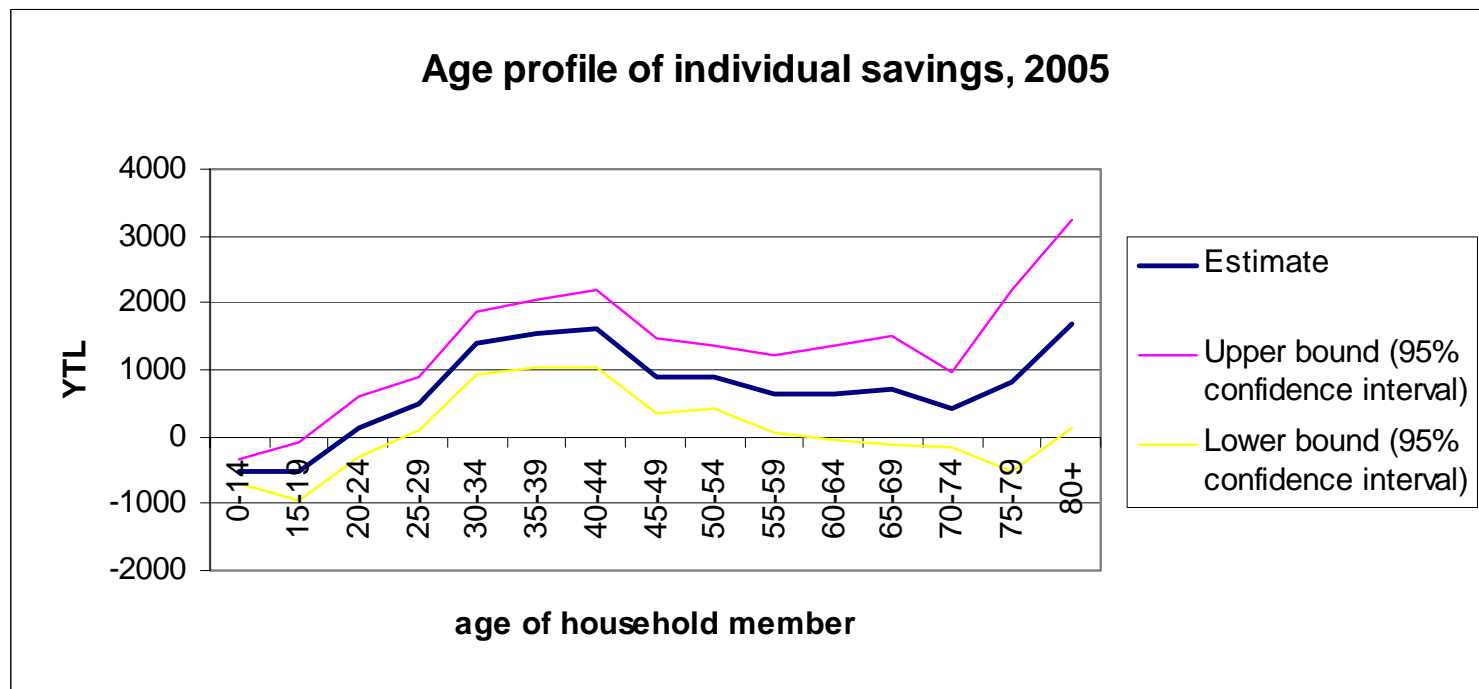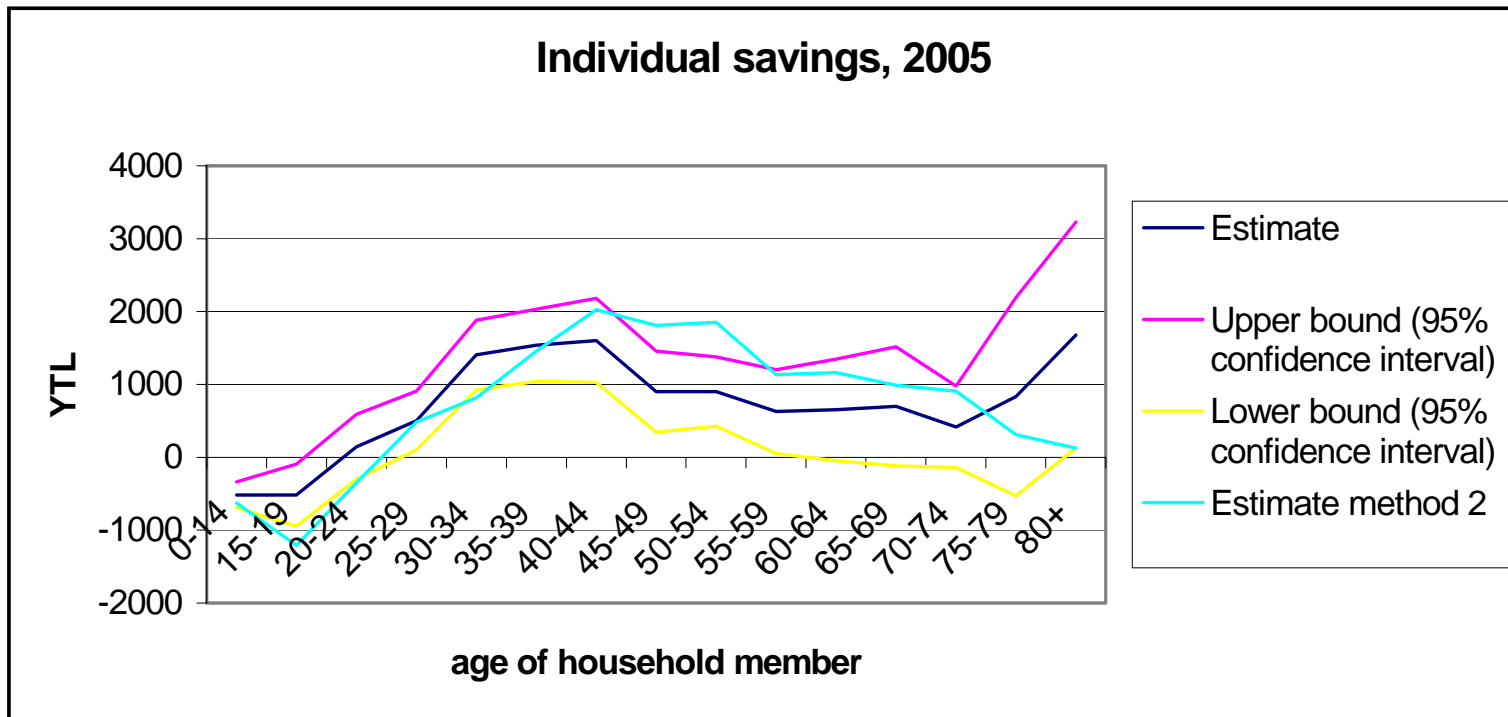
Age-profile from regression analysis

Age-profile from regression analysis
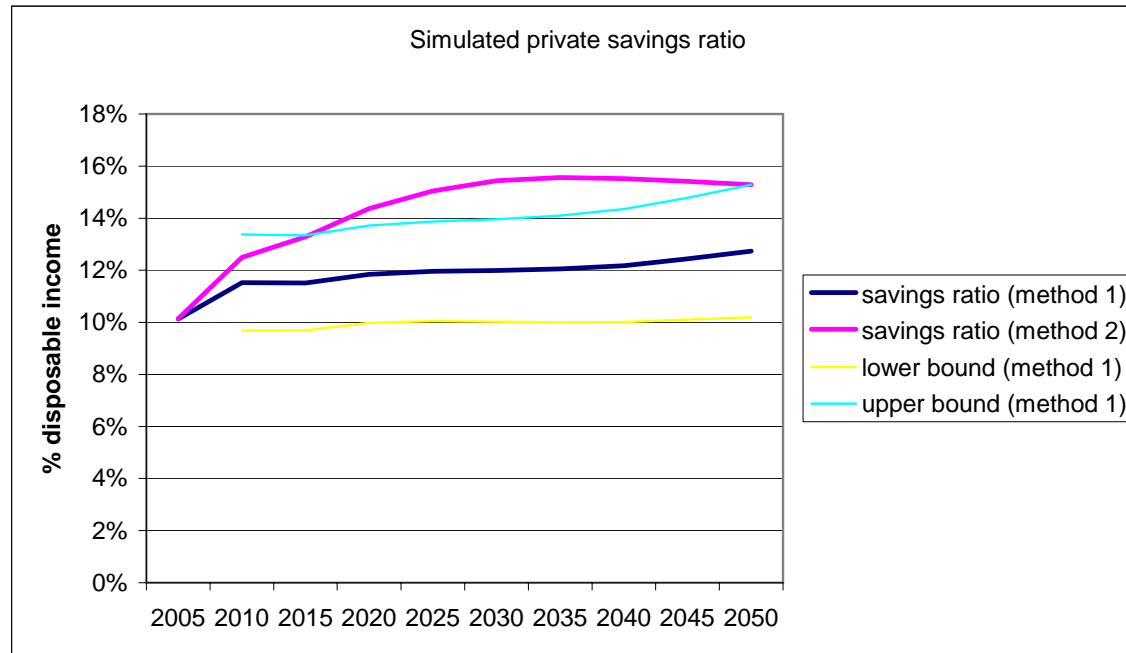

Simulated private savings ratio
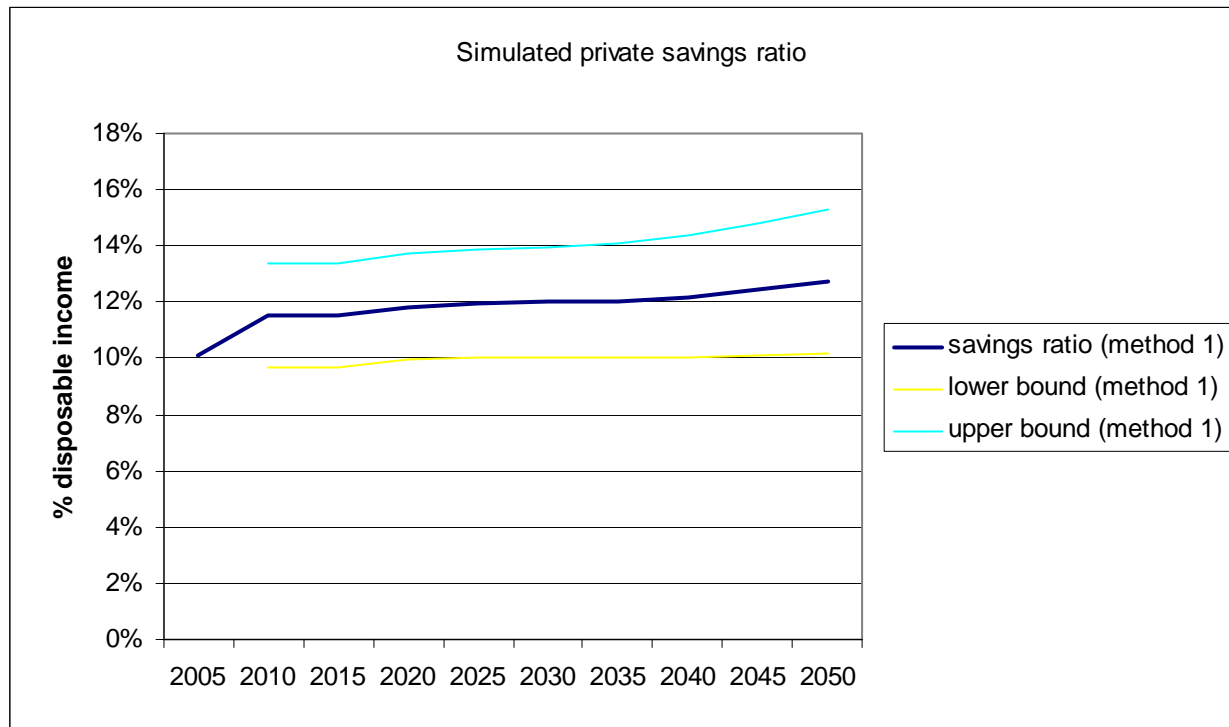
Age-profile from assumed spending shares

- Assign different shares in household expenditures to different age-groups
- Use modified OECD equivalency scale:
  - First adult spends one adult equivalent amount
  - Additional adults spend 0.5 adult equivalent amounts
  - Children 0-13 years spends 0.3 adult equivalent amounts
- Derive savings as individual income less calculated individual spending

Age-profile from assumed spending shares

Age-profile from assumed spending shares

Simulated private savings ratio

Legend:
- savings ratio (method 1)
- savings ratio (method 2)
- lower bound (method 1)
- upper bound (method 1)

Bottom Line?

Estimates of the size of the demographic dividend vary depending on the method used:

- Panel data results: 5% of GDP by 2025

- Age-profile of savings from regression analysis: 2% of disposable income by 2025 (most of the gain by 2010)

- Age-profile of savings using assumed spending shares by age: 5% of disposable income by 2025

What about demographic effects on investment?

- Share of youth in total population is projected to fall and growth of the working age population to slow
- Investment tends to be high in countries with young populations, because of:
  - Schools
  - Infrastructure for growing labor force
  - Growth in private capital stock to maintain capital/labor ratio
  - Dynamic economies
- Hence do not expect an increase in overall investment from reduction in youth-dependency (Higgins, 1998; Helliwell, 2004)

From macro to micro: A look at the household budget survey data

- What can we learn from HBS?
- HBS covers 8000+ households
- Detailed questions are asked on income and spending
- But data quality is poor, especially for incomes
- Spending is measured on a monthly unadjusted basis, while income is measured on annual inflation-adjusted basis…

How broad-based was the decline in the savings rate?

- We compared 2004 with 2005 HBS data, and looked at various groups according to the age of the head of household, number of children, location (urban/rural), proxies for income, etc.
- We observed that the decline in the saving rate was fairly broad-based
- There seems to be three exceptions:
  - Households with interest income did not reduce their savings
  - Households with head in the public sector did not reduce their saving
  - Households with older heads and no children living in the household reduced their saving by slightly *more*, where one would have expected the opposite

Group household savings rates, characteristics of household head

	2004	2005
overall	0.17	0.10
rural	0.17	0.10
urban	0.16	0.10
have interest income	0.13	0.13
no interest income	0.17	0.09
60 years old or over without kids	0.16	0.08
other	0.17	0.10
public	0.13	0.12
private	0.21	0.12
doubtful	0.04	-0.01
not doubtful	0.21	0.14

doubtful cases are those where household income was in lowest quartile, yet had hot water;
 those where household head did not know social security status; those with negative income or spending
 and cases of extra-large dissavings, where dissavings is larger than 2.6 times annual income

More on the exceptions

- Households with older heads (and w/o children) reducing savings more than others is at odds with theoretical predictions.
    - Individuals smooth consumption by borrowing when income is low relative to future income—for the elderly future income is relatively low, so they should not wish to borrow
    - The elderly will benefit relatively little from any future reduction in taxes or increase in growth
- Could reflect low-cost access to installment credit for durable goods

More on the exceptions

- Households reporting interest income not reducing their savings seems consistent with adverse income effect from lower interest rates, as such households did not raise their spending
  - Lenders reduce their saving and borrowers dissave more when interest rates fall because of the substitution effect
  - However, lenders may increase their saving because of a negative income effect (lower permanent income) when interest rates fall

More on the exceptions

- Households with head working in the public sector did not reduce their saving rate, whereas those in the private sector did. This reflects much higher income growth in the public sector than the private sector in the data. Spending growth was the same for both groups.
- Data quality is of concern, under-reporting may be 40% of incomes.
  - Estimates by Yukseler and Turkan (2008) show survey based disposable income is only 78% of NIA disposable income for 2005 (*before* NIA revisions). And thus only about 60% of incomes are reported, according to new GDP (which is some one-third higher than the older figure).

Savings as ratio of disposable income, 2005: Underreporting?
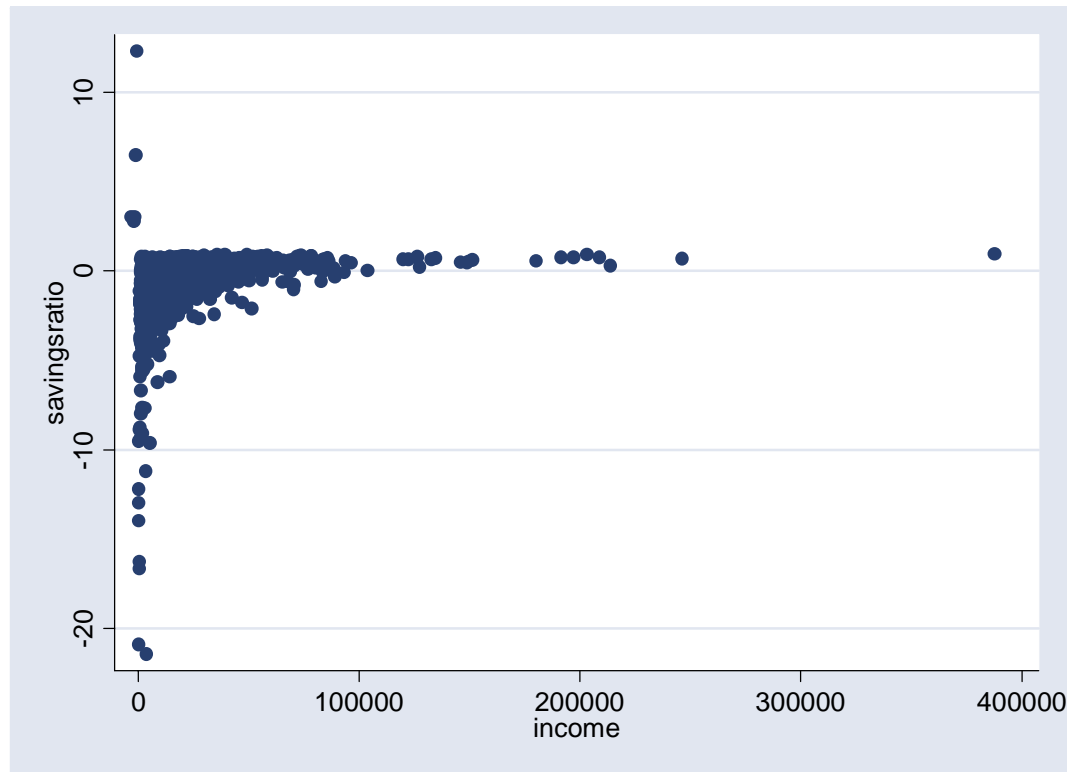
Policy Recommendations

- Do nothing on saving directly and address vulnerabilities. There do not seem to be severe distortions causing low savings
  - The tax system is atypical in its emphasis on taxing consumption rather than income, and interest rates are still high, so one cannot argue that there is a severe distortion causing high consumption
  - Also, boosting savings may not lead to an increase in growth. Causality more likely is from growth to saving (Rodrik, 2000).

Policy Recommendations

- Address vulnerability through expenditure-switching and expenditure-reducing policies, i.e. through lower absorption/growth (consumption plus investment) and a weaker currency.
- These could be engineered through a combination of tighter fiscal and looser monetary policy mix. A less benign global environment may do the job of reducing vulnerabilities, too, by reducing capital inflows and hence investment
- Limit vulnerability to capital flow reversals by lengthening government debt maturities, which with 3 year average maturity, are still low.

Policy Recommendations

- What are the standard recommendations and do they make sense for Turkey?
  - Shift to consumption (indirect) taxes, which is saving-friendly because it removes the "double taxation of savings" (once when earn interest, and once when consume interest earnings). Little room in Turkey
  - Reduce interest taxation; or introduce US-style Individual Retirement Accounts (IRAs). Impact is uncertain because of income effects (consume more when interest income increases) and costly to the budget.

Policy Recommendations

– Introduction of private pension plans. Done

– Reduce replacement rates in pension system. Done (May 2008 social security reform)

– Emphasize to the public the funding difficulties of social security. As current contributors realize that their benefits may be cut in future, they will save more for retirement. Done

Policy Recommendations

- Switch to funded pension programs (where investors receive the returns on their savings) from PAYG program. Initial debate in Turkey.
  - But government continues to be liable for existing pension obligations while no longer receiving pension contributions since these now accrue in dedicated pension funds. This leads to an increase in public debt (Roldos, 2007).
- Increase public savings. Turkey has done well but still overall budget is in deficit. Given limited options to raise the private savings rate, this is the strongest option.

Conclusion

- Is savings the issue?
  - Yes, but not because of any distortions favoring consumption
  - Current account deficits are high when growth and investment are high. In Turkey those are also the times when credit is plentiful and interest rates are low, hence private savings (but not total savings) are low.

- Are savings low?
  - Yes, and this can in large part be explained by high saving in Asia and oil-exporters; savings determinants are "average" in Turkey

- Why has savings declined?
  - A typical boom following stabilization, related to availability of consumer credit

Conclusion

- ## What are the prospects?
  - Possibly 5% of GDP increase in private savings over the next 5 years because of demographics; Increases in private savings because of reductions in retirement benefits
  - On the other hand, further increases in oil prices or credit will depress saving

- ## Can anything be done?
  - In Turkey, as elsewhere, options are limited.
  - Expenditure reducing/switching policies, including a tight fiscal policy, and lengthening of debt maturities may be more effective in reducing vulnerability than measures to directly raise private savings.