Session Four:

Issues Affecting High-Wealth Individuals

2009 IRS Research Conference

The Income-Wealth Paradox: Connections Between Realized Income and Wealth Among America's Aging Top Wealth-holders

July 9, 2009

Barry Johnson – IRS Statistics of Income
Kevin Moore – Federal Reserve Board
Lisa Schreiber – IRS Statistics of Income

Motivation

- Income and wealth are highly concentrated
  - Income concentration has increased, but top group is not stable
    - Piketty and Saez, 2003
    - US Treasury Report, 2007
  - Wealth concentration has increased by some measures – Kennickell, 2009

Motivation

- Links between income and wealth
  - Realized income vs. level of wealth
  - The action is at the top!
- Unique dataset
  - Panel data on income
  - End-of-life wealth

The Data

- Family Panel Decedent Dataset
  - 1987-2003 Individual Returns
    - 1987-1996 SOI Family Panel
      - Form 1040 for tax family
      - Primary, secondary filers and dependents
    - 1997-2003 – Form 1040 data for Family Panel members from IRS administrative files
      - Reduced set of data items
      - Data not subject to SOI editing

The Data

- Federal Estate Tax Returns – Form 706
  - Decedents with estates above filing threshold
  - Filing threshold varies over time
    - $600,000 in 1994
    - $1,000,000 in 2003
  - Special rules valuation rules for businesses and real estate
  - Starting in 1994, have Form 706 for deceased Family Panel members (above filing threshold)

The Data

- Survey of Consumer Finances (SCF)
  - Triennial survey of household assets and liabilities
  - Also collect income from prior year
    - Income questions reference Form 1040
  - SCF provides household level distribution of income and wealth
    - Compare with FPDD estimates

Table 1. Filing Threshold and Number of Decedents by Year of Death

Year of Death	Number of decedents	Filing threshold in nominal dollars	Number of decedents with assets of $1M or more in 2003 dollars
1994	417	600,000	385
1995	480	600,000	440
1996	521	600,000	478
1997	574	600,000	520
1998	538	625,000	487
1999	635	650,000	586
2000	609	675,000	559
2001	667	675,000	605
2002	636	1,000,000	630
2003	480	1,000,000	472
Total	5,557	N/A	5,162

Table 2. Filing Status Stability

Includes only those where the year of death is between 1994 and 2003 and reported wealth of $1 million or more in 2003 dollars

Filing Status	Return filed 1 year prior to death	Number of years prior to death filing status			
		3	5	7	9
Single	1,688	1,421	1,230	1,062	766
Joint	3,474	3,399	3,343	3,305	2,693
Total	5,162	4,820	4,573	4,367	3,459

Figure 1. Percentage of Filers with Various Types of Income

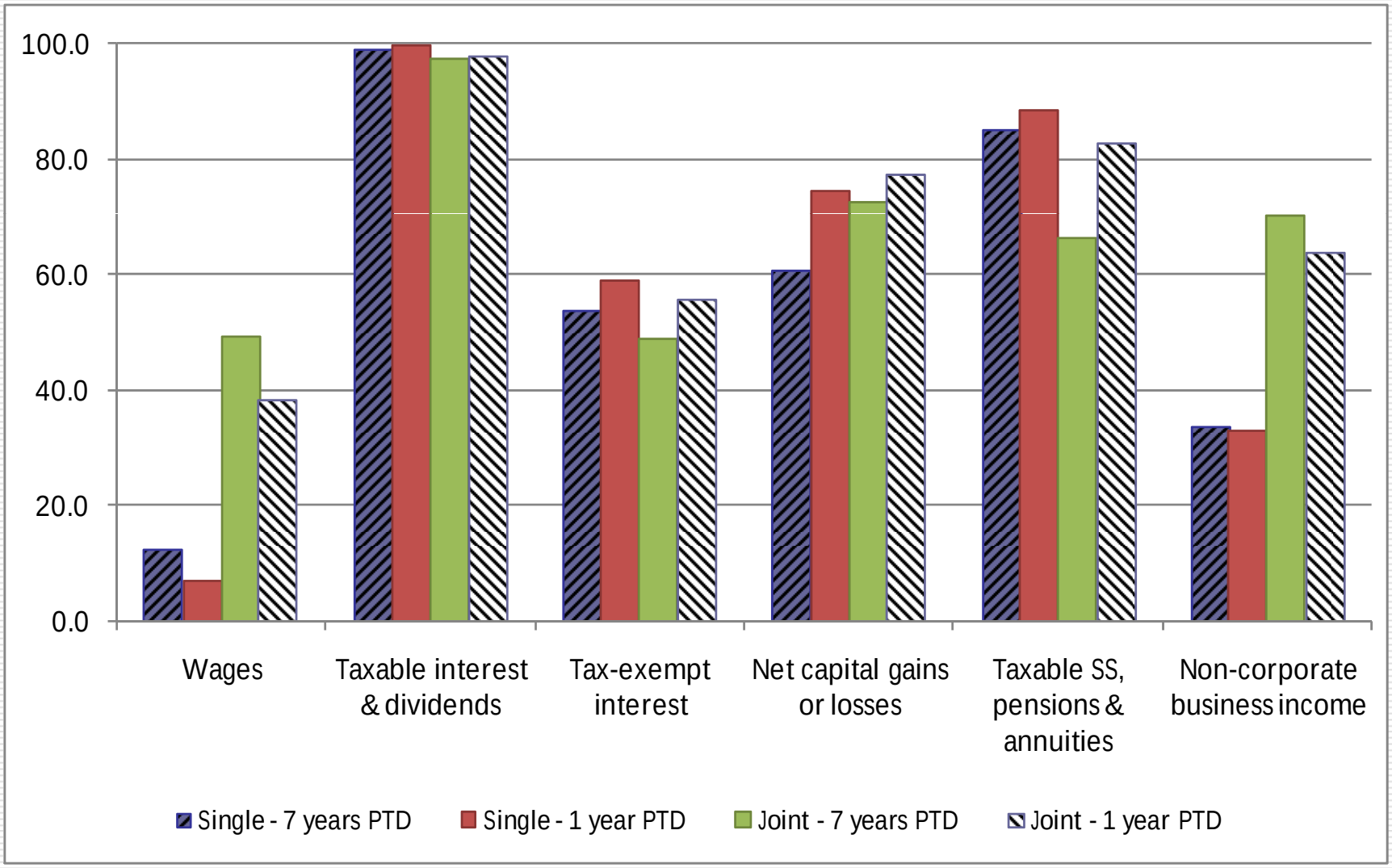


Figure 2a. Mean Value of Various Types of Income, Wealth Less than $10 Million

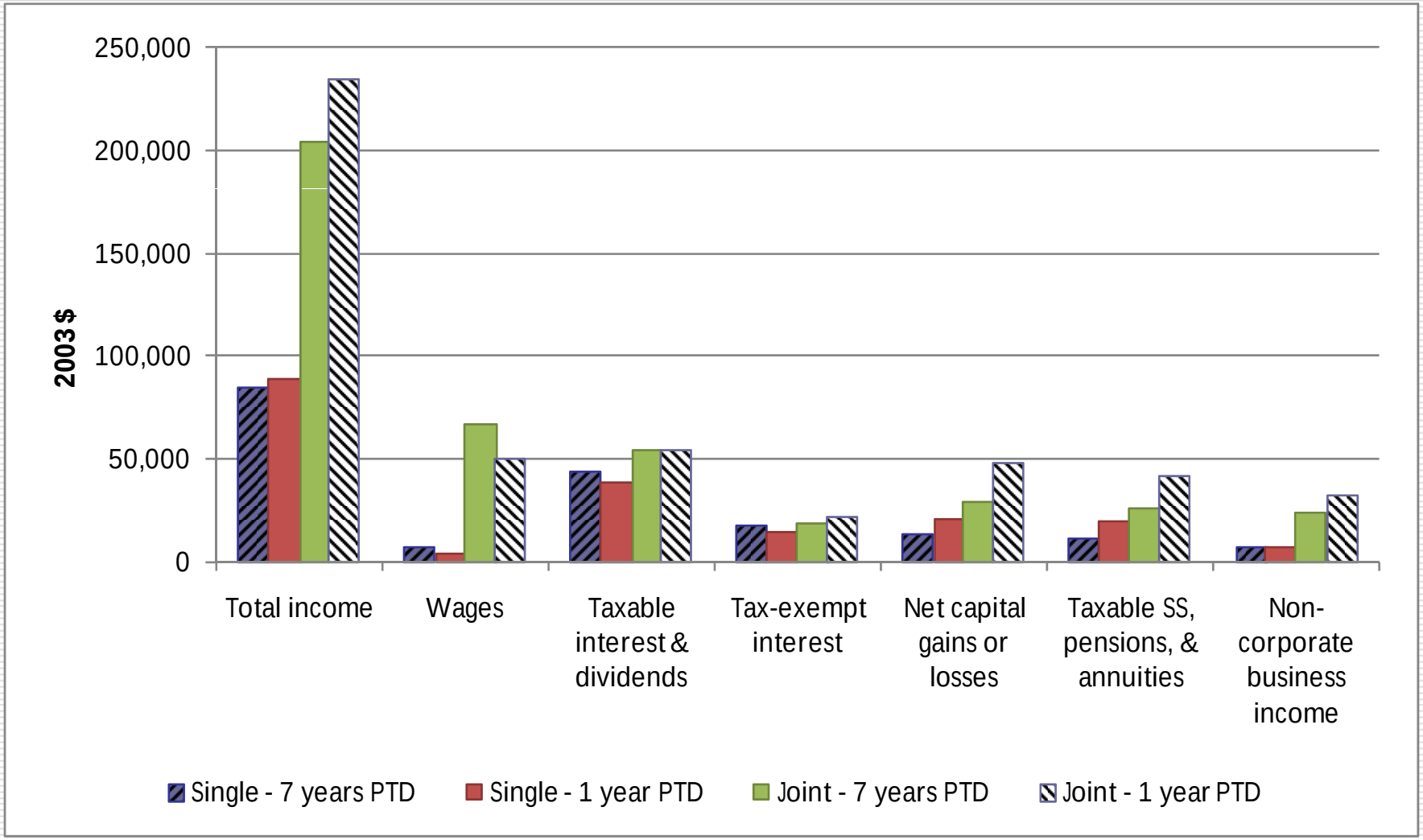


Figure 2b. Mean Value of Various Types of Income, Wealth $10 to $20 Million

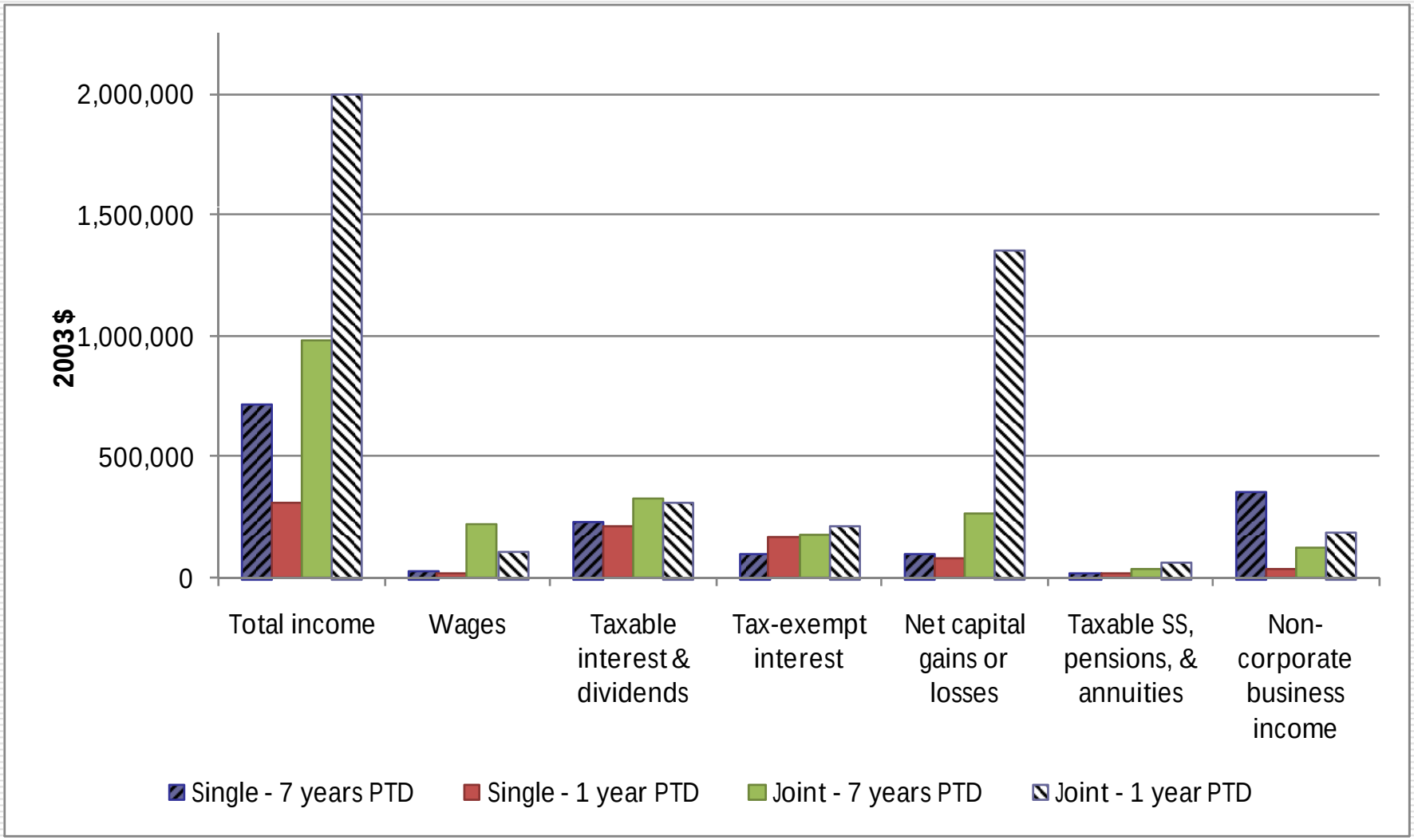
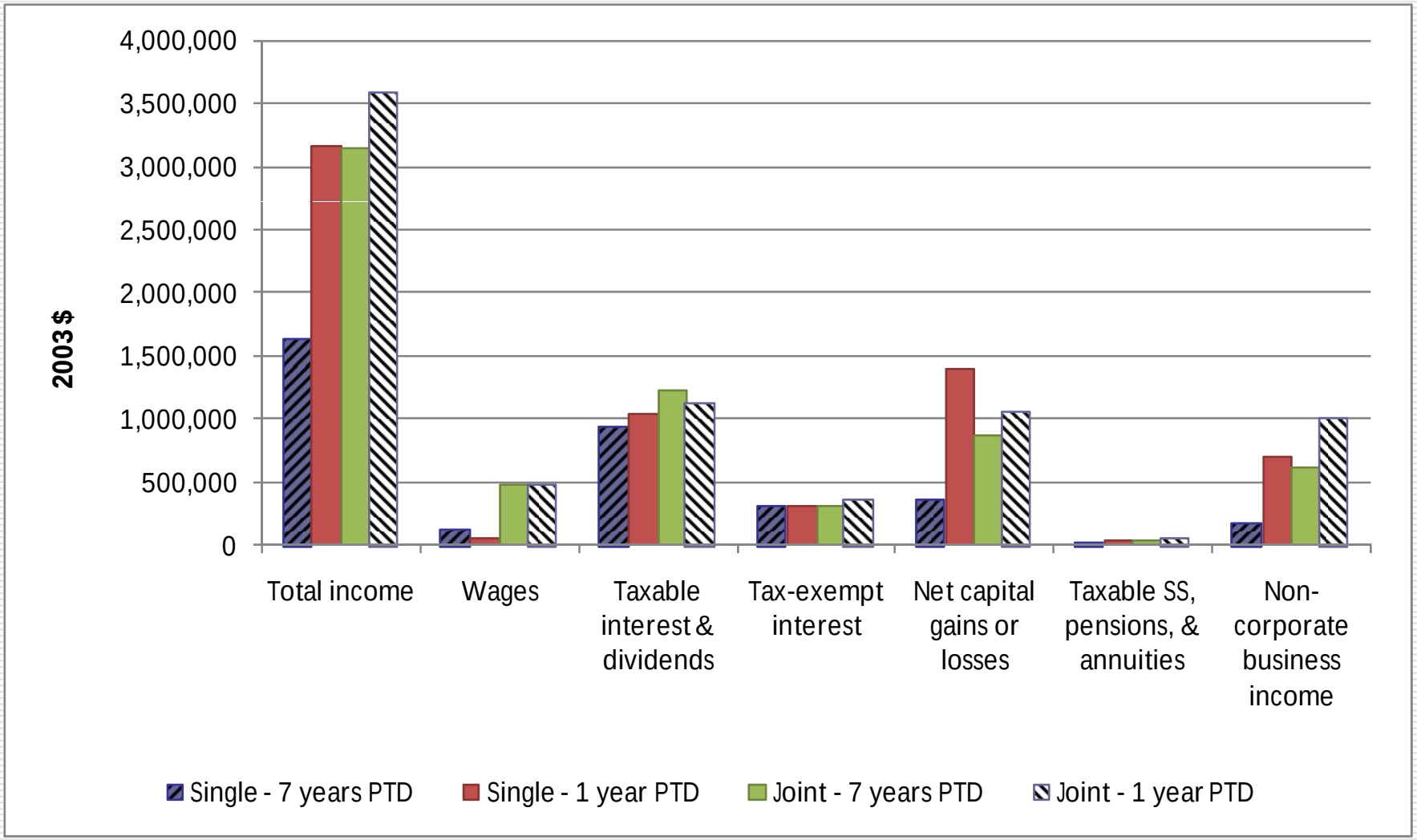


Figure 2c. Mean Value of Various Types of Income, Wealth $20 Million or More



Percentage Change in Income, by Wealth for Single Filers

Figure 3a. Percentage Change in Income Between 7 to 1 Years Prior to Death, by Wealth, Single Filers

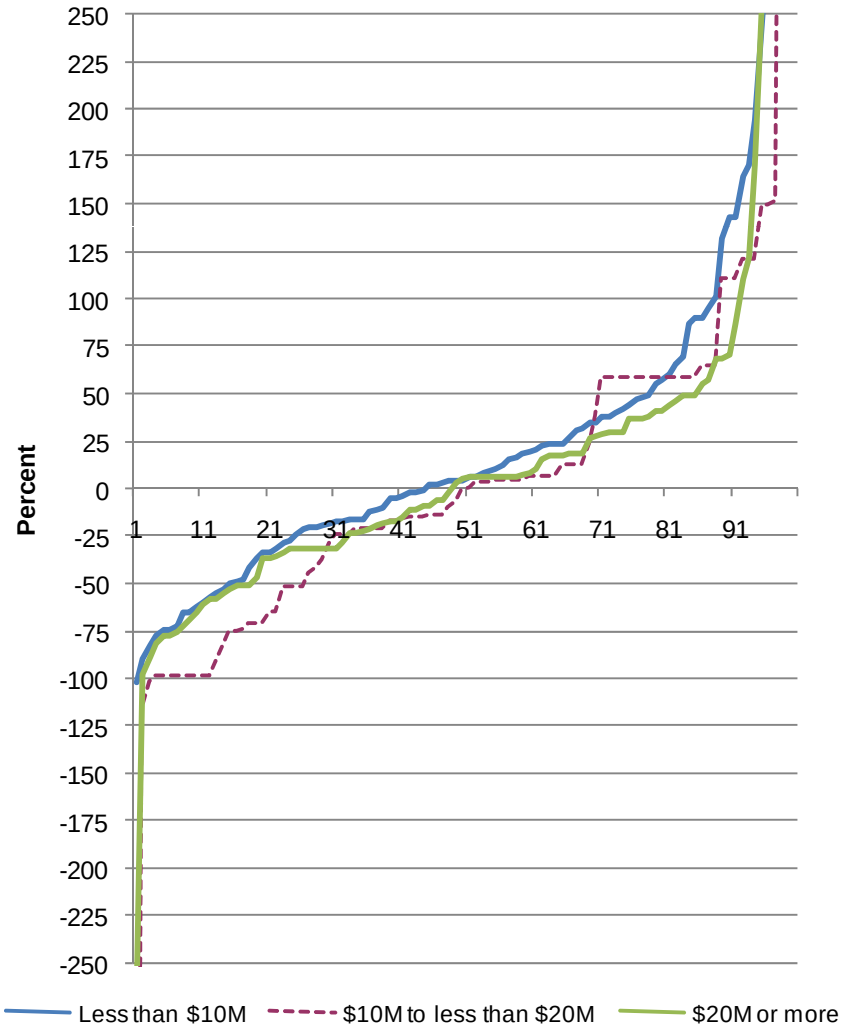
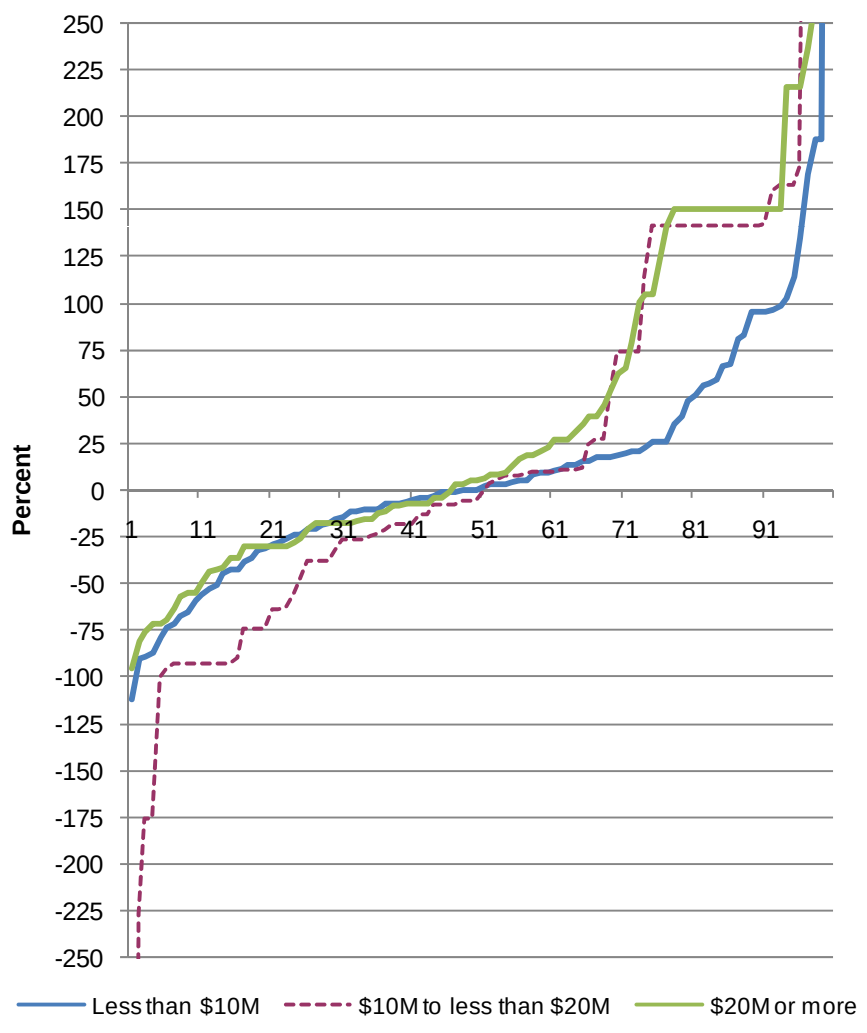


Figure 3b. Percentage Change in Income Between 4 to 1 Years Prior to Death, by Wealth, Single Filers



Percentage Change in Income, by Wealth for Joint Filers

Figure 3c. Percentage Change in Income Between 7 to 1 Years Prior to Death, by Wealth, Joint Filers

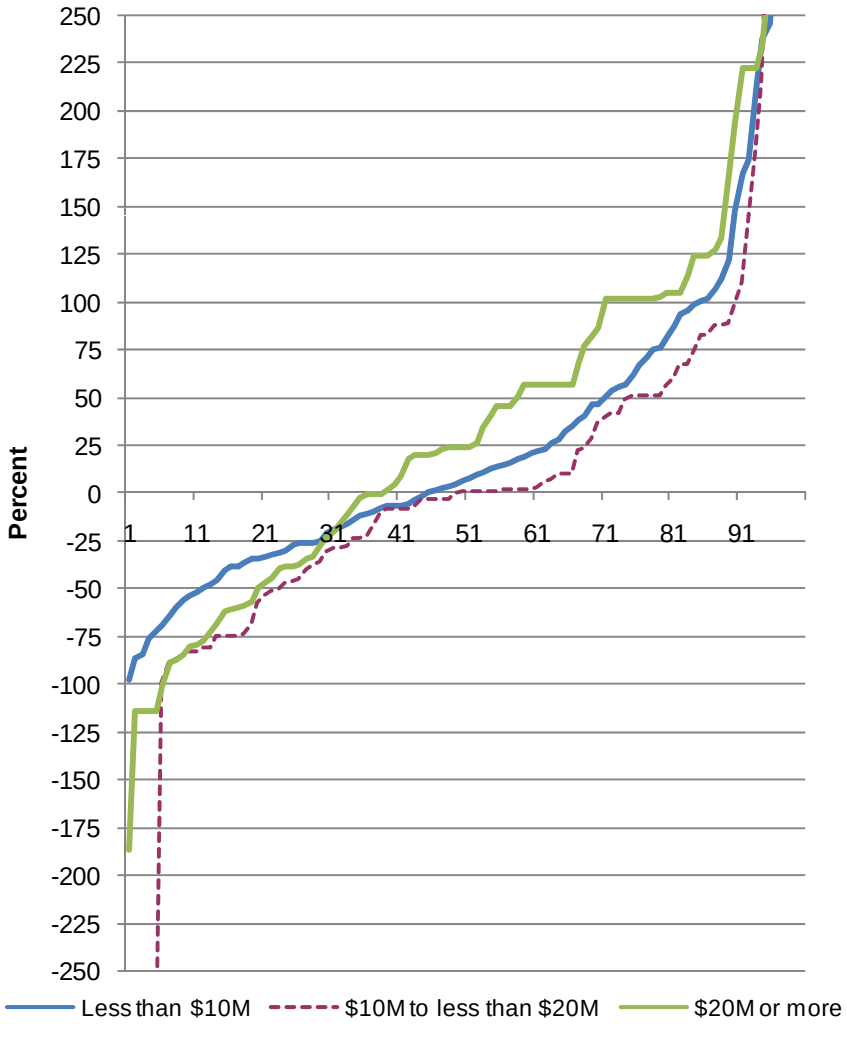


Figure 3d. Percentage Change in Income Between 4 to 1 Years Prior to Death, by Wealth, Joint Filers

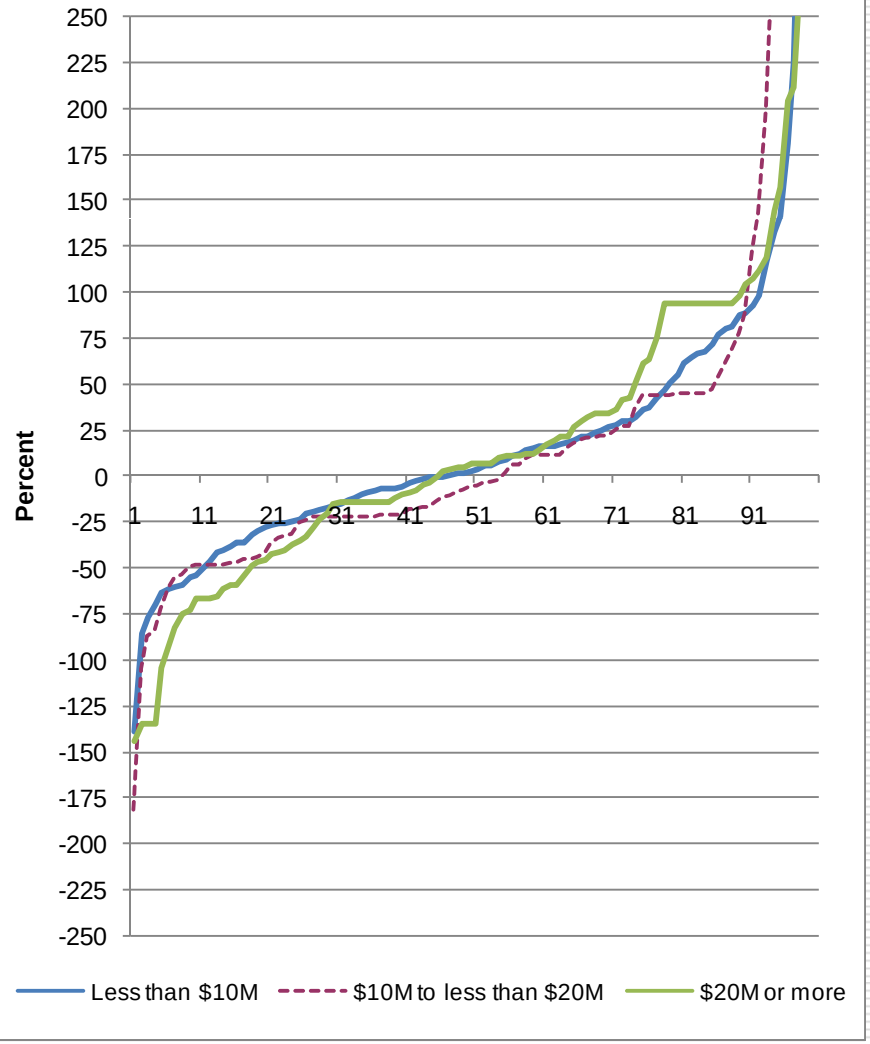


Table 3. Percentage Changes in Total Income

Percent of Filers with Selected Percentage Changes in Total Income Over 7 to 1 Years Prior to Death and 4 to 1 Years Prior to Death, By Filing Status and Wealth Class

Marital Status / Wealth Category		Percentage change in total income	
		Absolute value >= 25%	Absolute value >= 50%
Single	All Wealth Categories	58	36
	Less than $10M	58	36
	$10M to less than $20M	61	56
	$20M or more	69	44
Joint	All Wealth Categories	66	42
	Less than $10M	66	42
	$10M to less than $20M	66	50
	$20M or more	78	63

Figure 4a. Decomposition of Percentage Change in Total Income

For Selected Years Prior to Death, Single Filers, Less than $10M

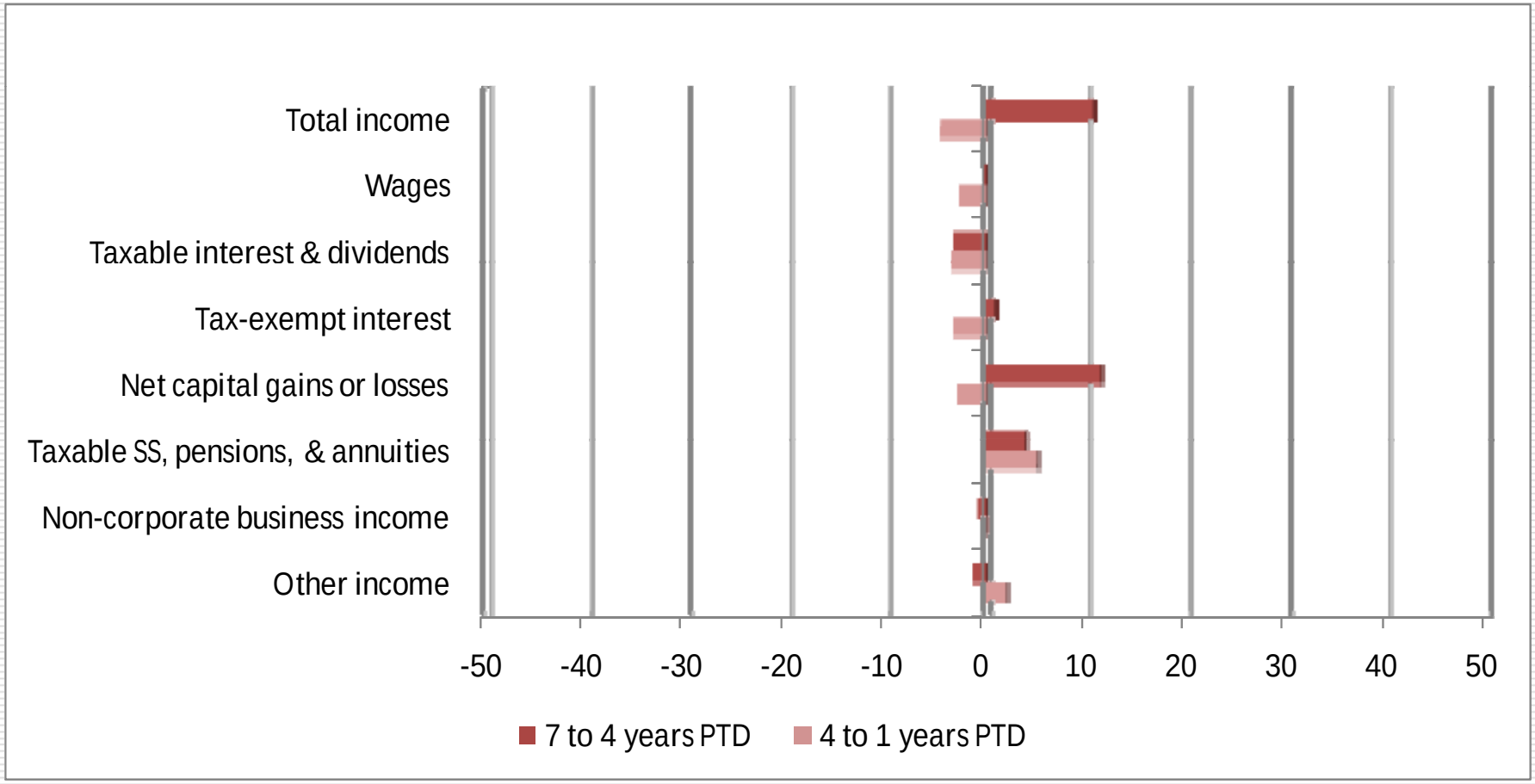


Figure 4b. Decomposition of Percentage Change in Total Income

For Selected Years Prior to Death, Single Filers, $10M to less than $20M

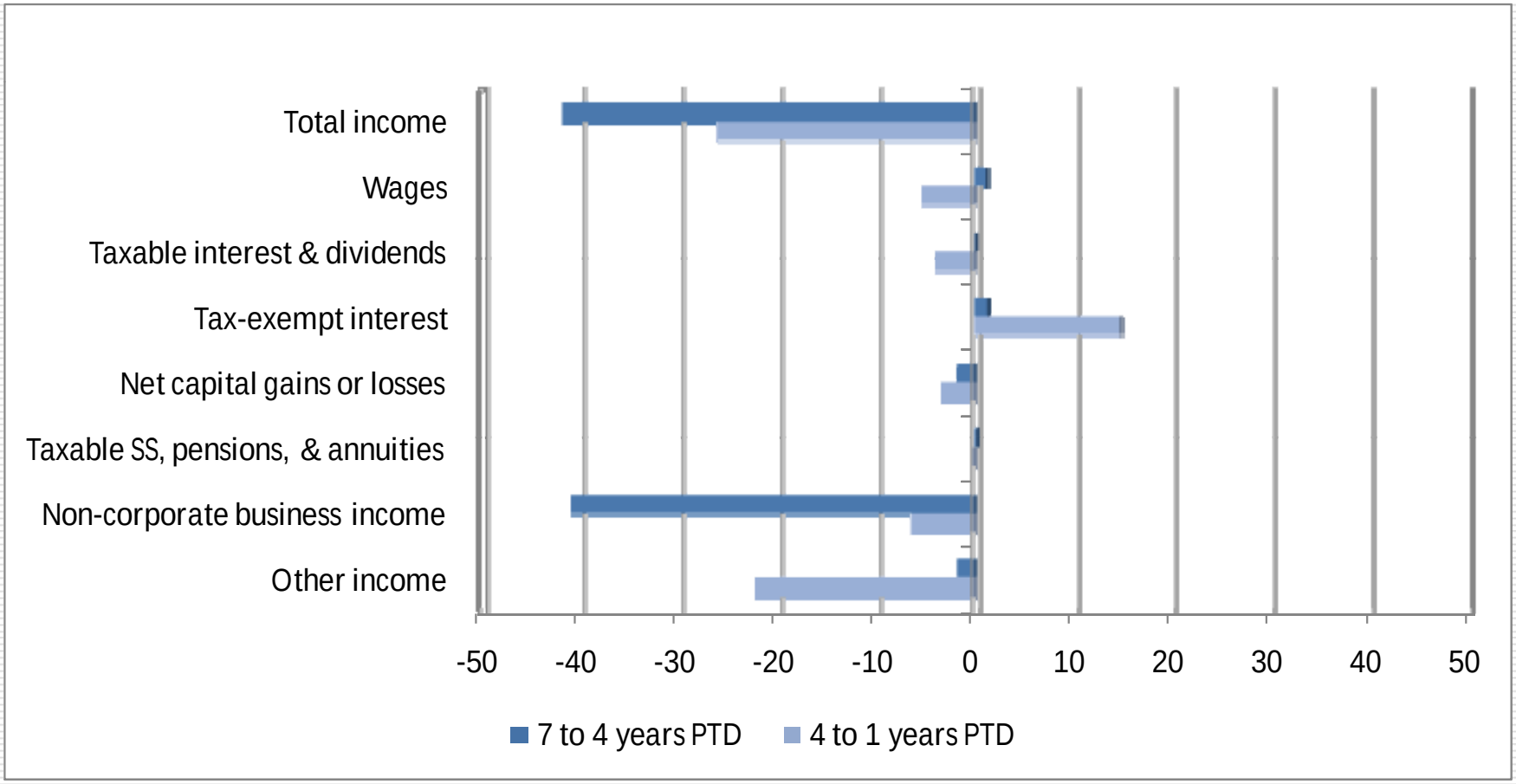


Figure 4c. Decomposition of Percentage Change in Total Income

For Selected Years Prior to Death, Single Filers, $20M or more

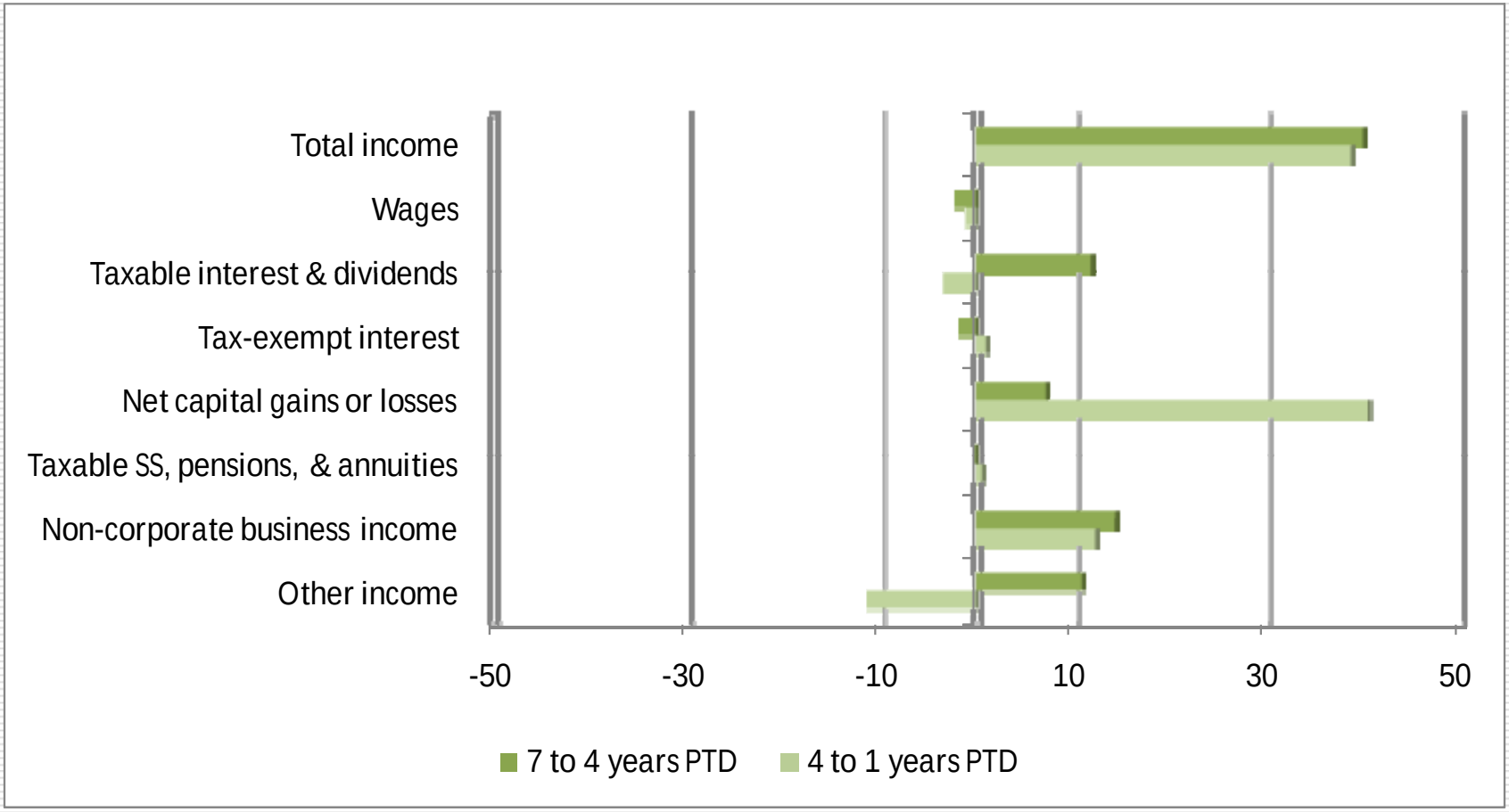


Figure 4d. Decomposition of Percentage Change in Total Income

For Selected Years Prior to Death, Joint Filers, Less than $10M

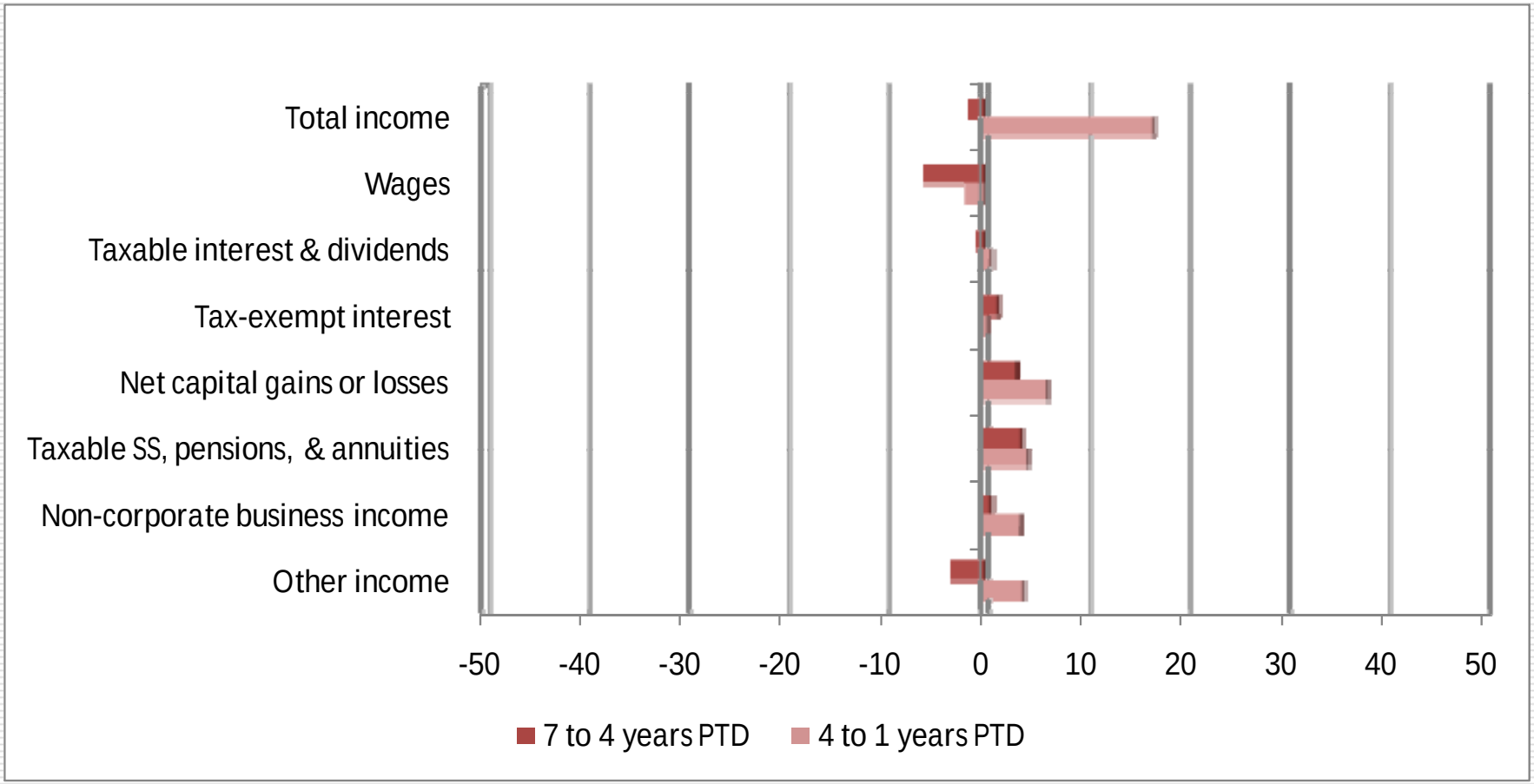


Figure 4e. Decomposition of Percentage Change in Total Income

For Selected Years Prior to Death, Joint Filers, $10M to less than $20M

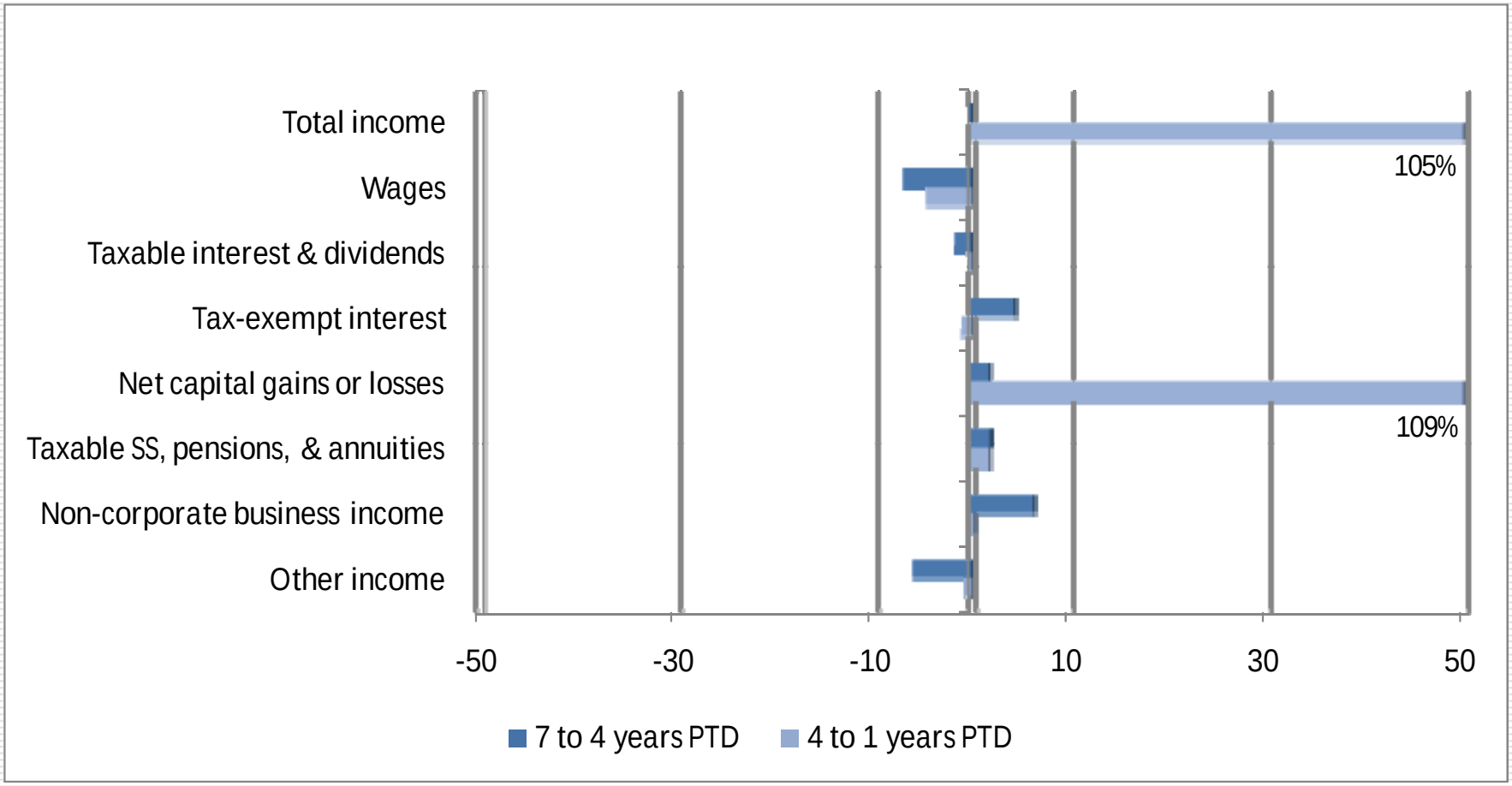


Figure 4f. Decomposition of Percentage Change in Total Income

For Selected Years Prior to Death, Joint Filers, $20M or more

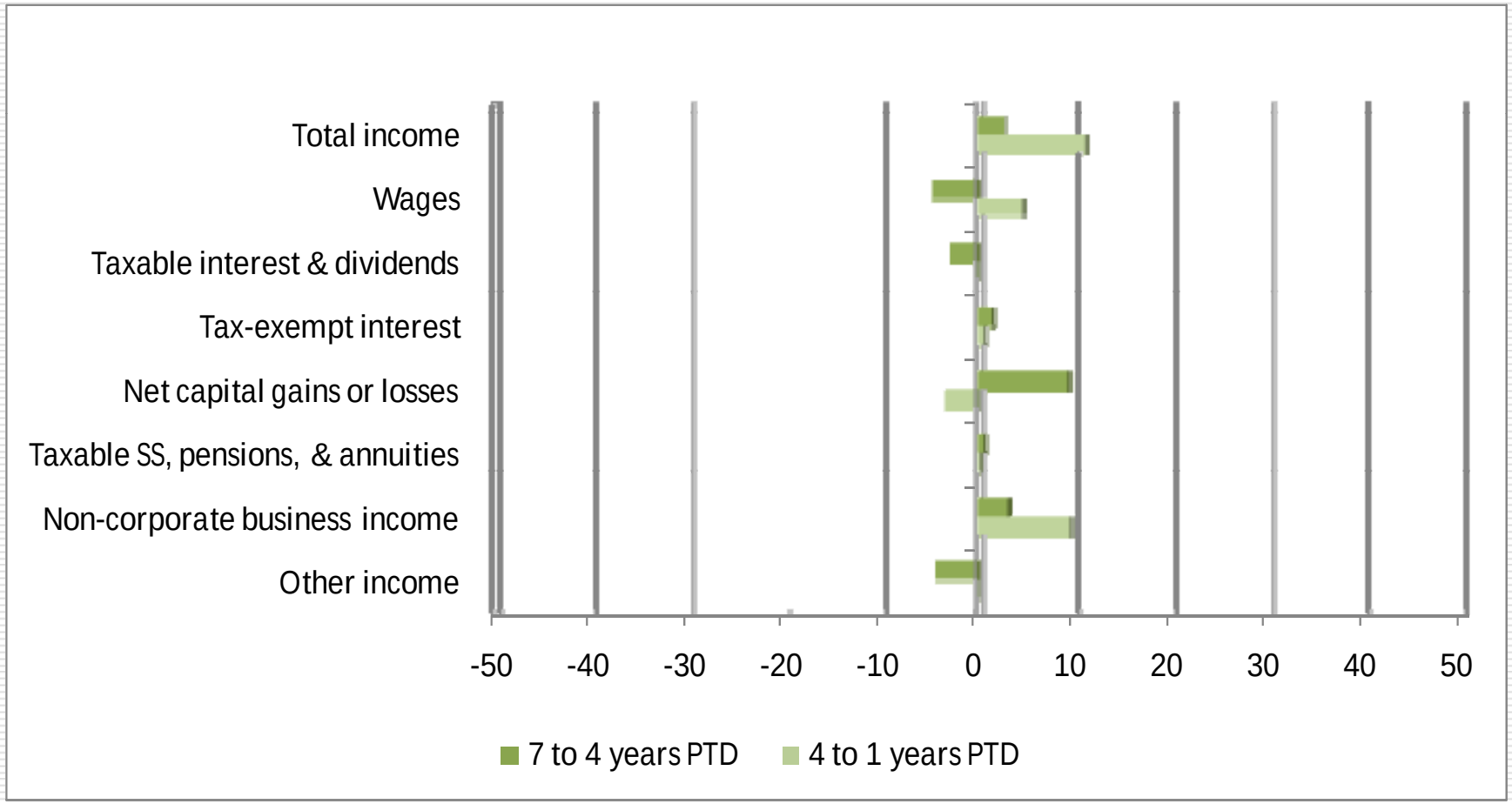


Figure 5a. Wealth Allocation at End of Life, Single Filers

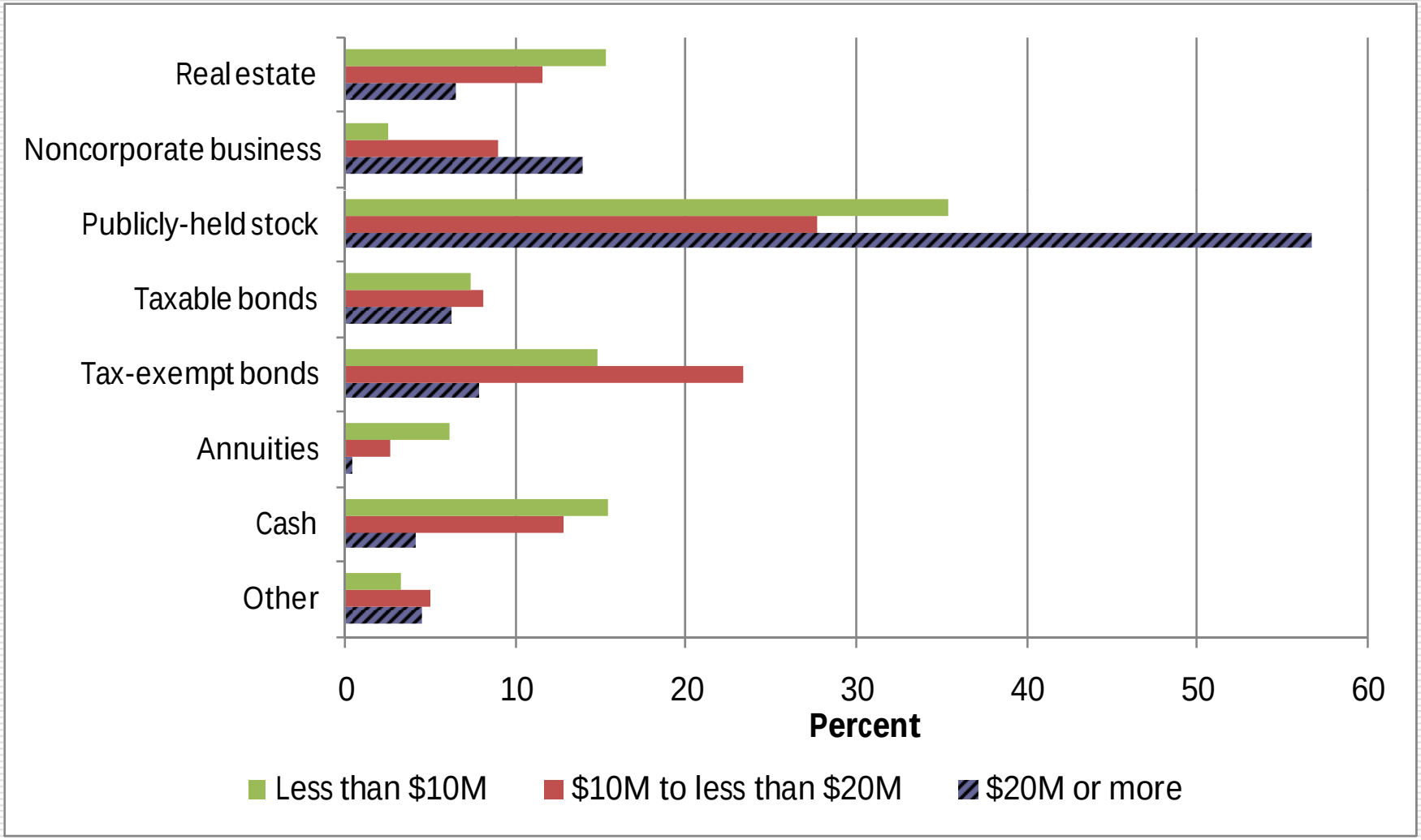
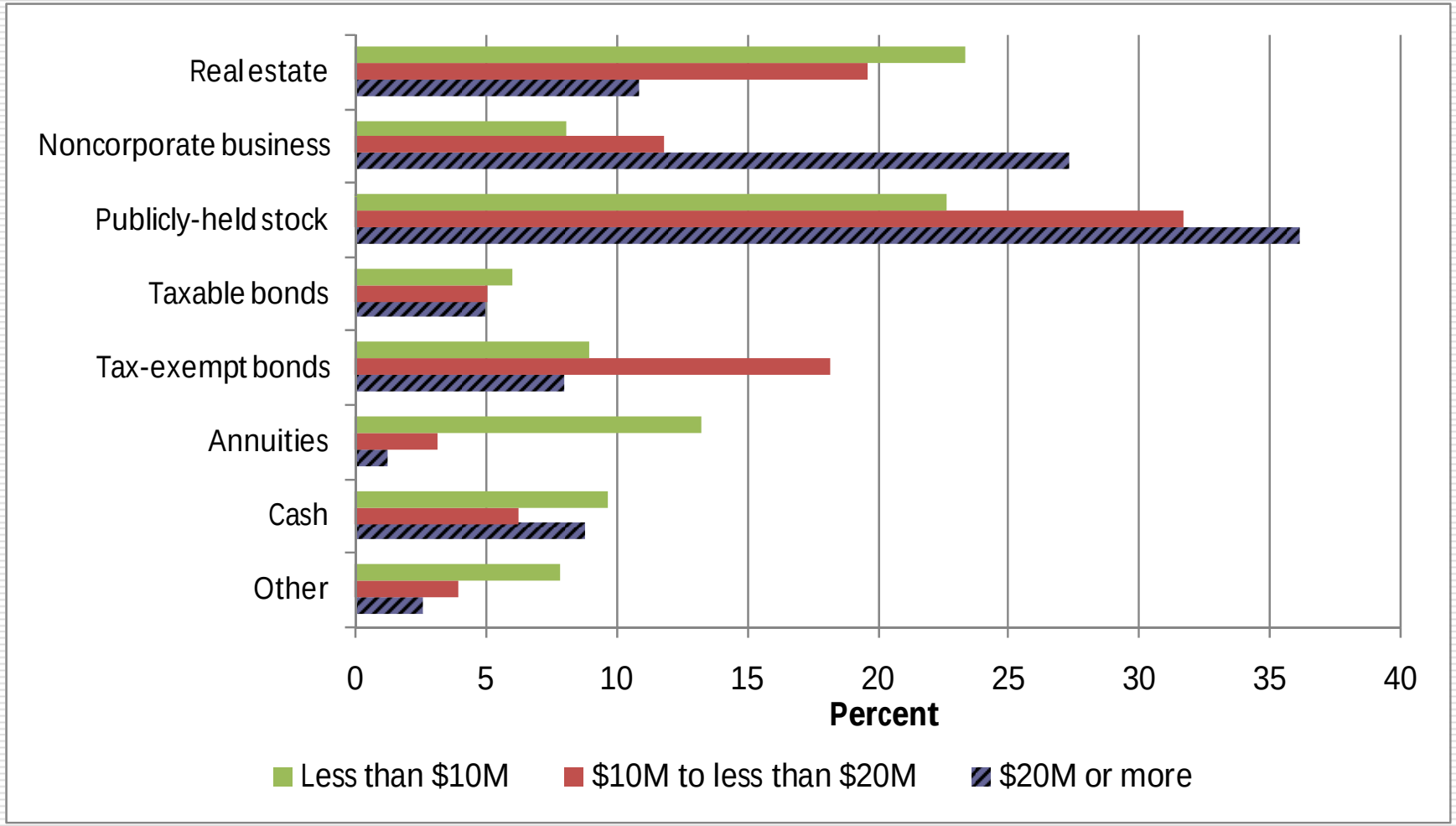


Figure 5b. Wealth Allocation at End of Life, Joint Filers



Wealth Allocation

- Comparison to portfolios in the SCF
  - For hhs age 70 or older
  - At least $1 million (2003 $) in wealth
  - On average, portfolio split 50-50 between financial and non-financial assets
    - Stock is 25% of wealth, 50% of fin assets
    - Real estate and businesses are 50% of wealth, 90% of non-financial assets

Wealth Allocation

- Diminished role of non-financial assets in FPDD vs. SCF
  - Partly due to estate tax rules
  - Discount the value of real estate and businesses
    - Range from 35 to 50 percent
    - Discount not used very often
  - Also due to different data sources and methodology

Wealth Regressions

- Predict wealth for filers in the FPDD
  - Income components
  - Real estate taxes
  - Age and year of death
- Estimate models by filing status and wealth groups
  - Regressions are weighted

Table 4. Wealth Regressions by Filing Status and Wealth Category

Variable	Single Filers			Joint Filers		
	Less than $10M	$10M to less than $20M	$20M or more	Less than $10M	$10M to less than $20M	$20M or more
Wages	*			*		*
Taxable interest/dividends	*	*	*	*		*
Tax-exempt interest	*	*	*	*		*
Capital gains/losses	*	*	*	*		*
Taxable SS/pension/annuity	*			*		
Estate/trust						
Real estate taxes	*	*		*		*
Rent/royaties	*	*		*	*	*
Business	*			*	*	
Farm	*			*		*
Other	*					*
R squared	0.75	0.86	0.80	0.37	0.29	0.66

Notes: Shaded cells with an asterisk indicate at least one of the seven coefficients for each variable is significant at the 5% level. Regressions also contain age, age squared, and dummies for year of death.

Table 5. Wealth Regressions by Filing Status and Wealth Category

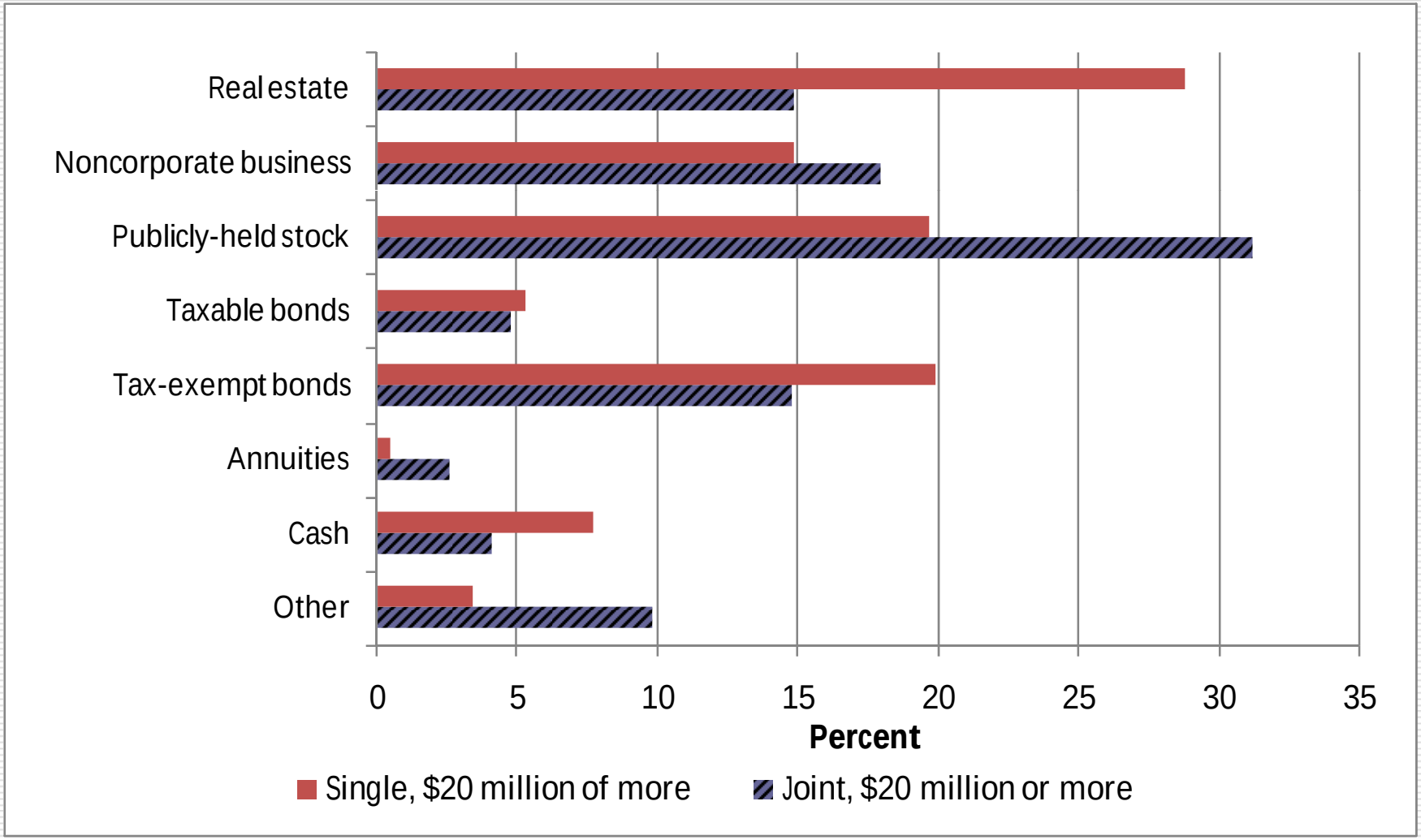
Single Filers

Percentage of Filers		Predicted			
		Less than $1M	$1M to $10M	$10M to less than $20M	$20M or more
Actual	Less than $10M	6.1	93.7	0.2	0.0
	$10M to less than $20M	0.0	0.5	99.2	0.3
	$20M or more	11.4	9.6	14.1	64.9

Joint Filers

Percentage of Filers		Predicted			
		Less than $1M	$1M to $10M	$10M to less than $20M	$20M or more
Actual	Less than $10M	0.1	99.9	0.1	0.0
	$10M to less than $20M	0.0	0.4	99.4	0.3
	$20M or more	10.4	7.6	7.0	75.0

Figure 6. Wealth Allocation at End of Life, Joint Filers



Conclusions

- For this select group of filers
  - Not following life-cycle models
  - Income is fairly volatile in years prior to death
  - Volatility could come from numerous factors
    - Tax planning, economic conditions, etc.
  - High level of income from financial assets
    - Large share of end-of-life wealth in financial assets

Conclusions

- Modeling wealth with income
  - Good results for lower two wealth groups
  - Less predictive power for highest wealth group
    - Tax-exempt bonds and other assets
  - Potential for predicting who should file the estate tax
  - Continue to refine the model

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Issues Affecting High-Wealth Individuals

2009 IRS Research Conference

Overcoming Overdisclosure: Toward Tax Shelter Detection

Joshua D. Blank

Assistant Professor of Law

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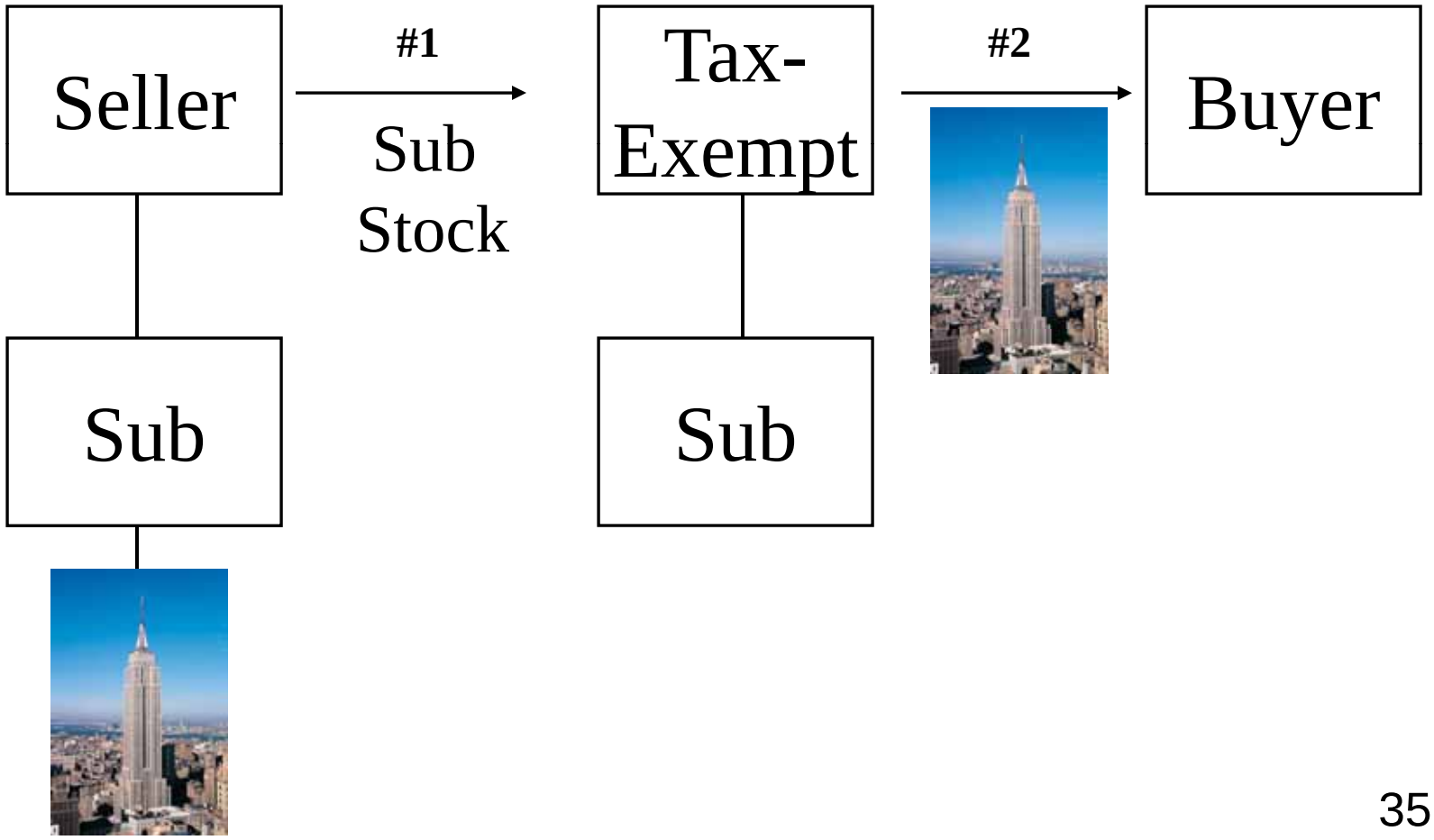
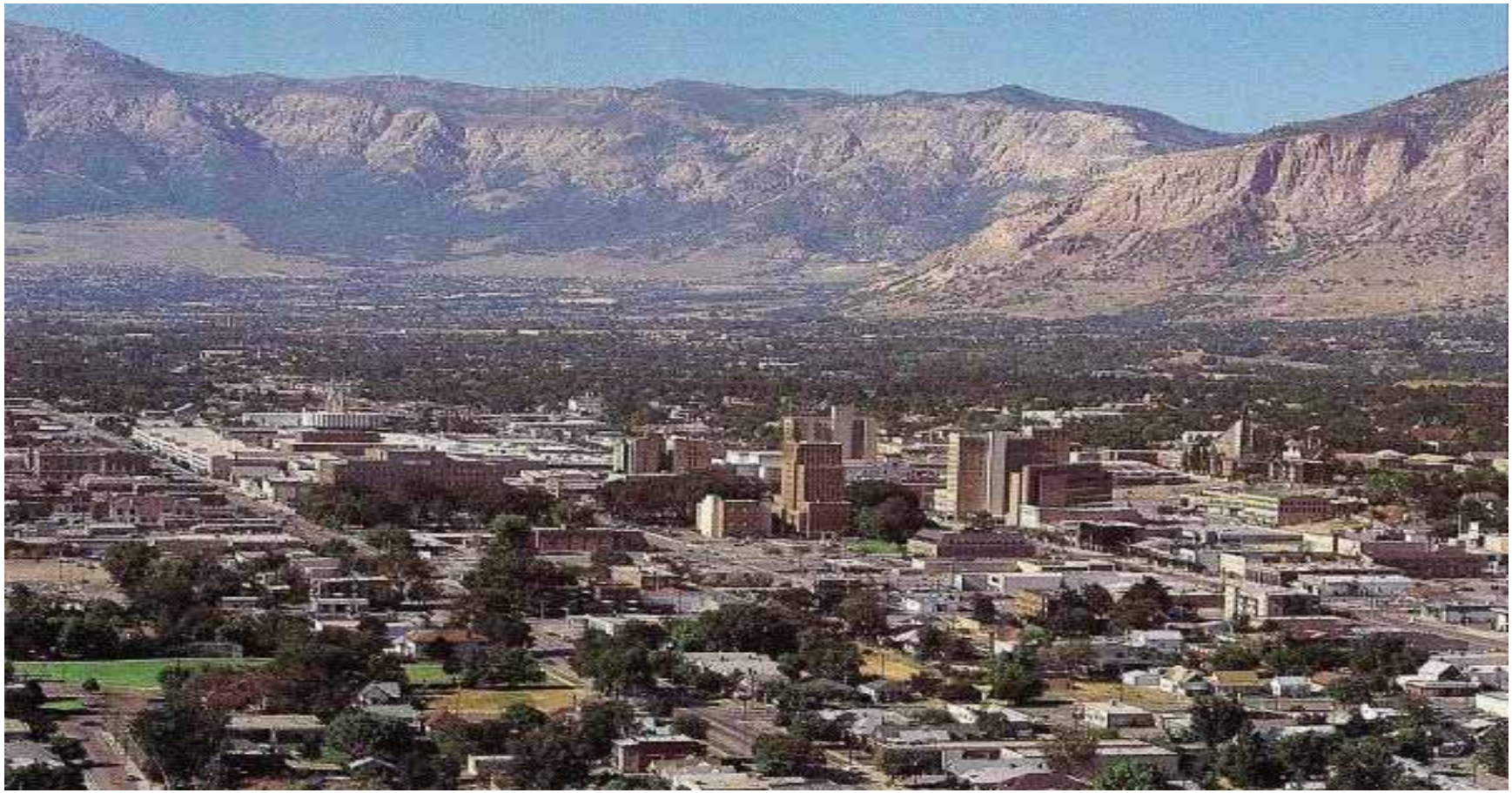
Intermediary Corporation Tax Shelter



The Office of Tax Shelter Analysis



Tax Shelter Red Flags

- Listed Transactions
  - "Substantially Similar"
- Transactions of Interest
- Confidential Transactions
- Contractual Protection
- Significant Tax Losses

What is “Overdisclosure”?

- Information that:
  - fails to report participation in a potential tax shelter and that
  - *the IRS cannot easily identify* as failing to report participation in a potential tax shelter

Overdisclosure Examples

- Nonabusive Reportable Transactions
- Unnecessary Protective Disclosures
- Extraneous Details and Documents

Incentives for Conservative Types

- Broad Disclosure Categories
- Delayed Corrective Guidance
- High Penalties for Non-Disclosure

Incentives for Aggressive Types

- Reduced Chance of Detection

- "Perfectly Legal"
- Publicized Detection Obstacle

Can Overdisclosure be Overcome?

- Anticipatory Angel Lists
- Targeted Monetary Penalties

- Non-tax Documentation

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GraphQuery: A Tool to Detect Patterns of Abusive Tax Transactions

Rahul Tikekar, Kay Wolman, and Larry May

Office of Research

IRS

Motivation

- IRS processes over 200 million tax returns each year.
- Some of these returns claim tax benefits not allowed by law.
- In some extreme cases of planned manipulations the schemes are termed Abusive Tax Avoidance Transactions (ATATs).
- How do you detect these?

Abusive Tax Transactions

- No all-inclusive definition.
- Generally includes any partnership, trust, or any entity or associations **structured** to obtain tax benefits not allowed by law.
- Promoters are aggressively marketing ATAT schemes that undermine the voluntary US tax system.

How ATATs Operate

- Misuse of disparate sections of the tax law to produce unintended results.
- Intentional manipulation of potential ambiguities of the tax laws in order to improperly claim tax benefits.
- Sham arrangements having no economic significance other than tax reduction.
- Gross valuation overstatements that ascribe a value to an asset or service that is more the correct value – overvaluation results in a tax reduction.
- False statements to participants about the legality of tax benefits, contrary to clearly established law.

The Challenge

- IRS system is set up to process returns one at a time – make decisions based on that return alone.
- Auditors have to piece together various associations of an entity to gather a complete picture of the entity.
- Such endeavors are difficult and time intensive.
- Instead of focusing on one return at a time, we need to consider indicators from multiple forms filed by multiple entities.

Evolution of IRS Efforts

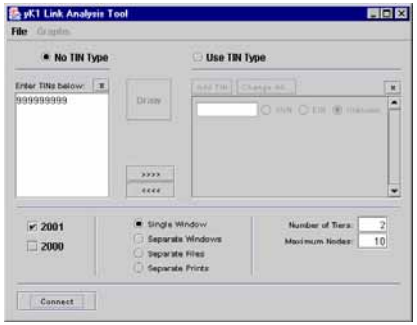
- IRS transcribed Schedule K-1 for the first time for Tax Year 2000.
- Market review and technology assessment proposes using Link Analysis Technology (August 2002).
  - Office of Research awarded proof of concept contract to MITRE Corp.
- Proof of concept for use of link analysis for flow-through entities proven very quickly (May 2003).
- NHQ Research funded relational mining effort at MITRE through November 2007.

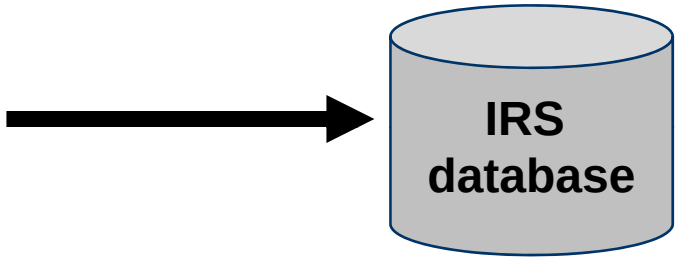
Using Link Analysis

- Begin by specifying ID of the entity of interest.
- Application shows the associations of that Identification Number (TIN) with respect to K-1.
- The associations are displayed graphically.
- Graph presents a more complete picture of entity to an auditor or analyst.
  - Shows entities involved – even the most complex arrangement.
  - Shows flow of money.

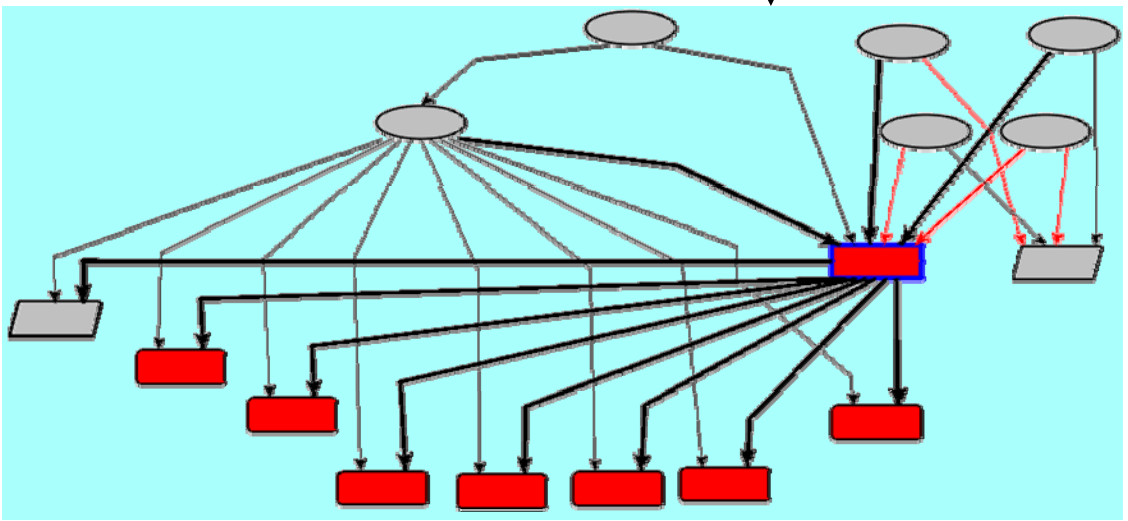
Visualization and Investigation Using Link Analysis

Visualization Request for TIN:





Investment Structure Pattern of TIN and Related Entities:



While Using Link Analysis…

- Analyst may discern a pattern of abuse – **a structure** – that occurs frequently.
- How can one find other entities that participate in a *similar* structure?
- Could use link analysis tool with many different TINs and view resulting graph for the abusive structure.
  - Inefficient and possibly infeasible.

Enter GraphQuery

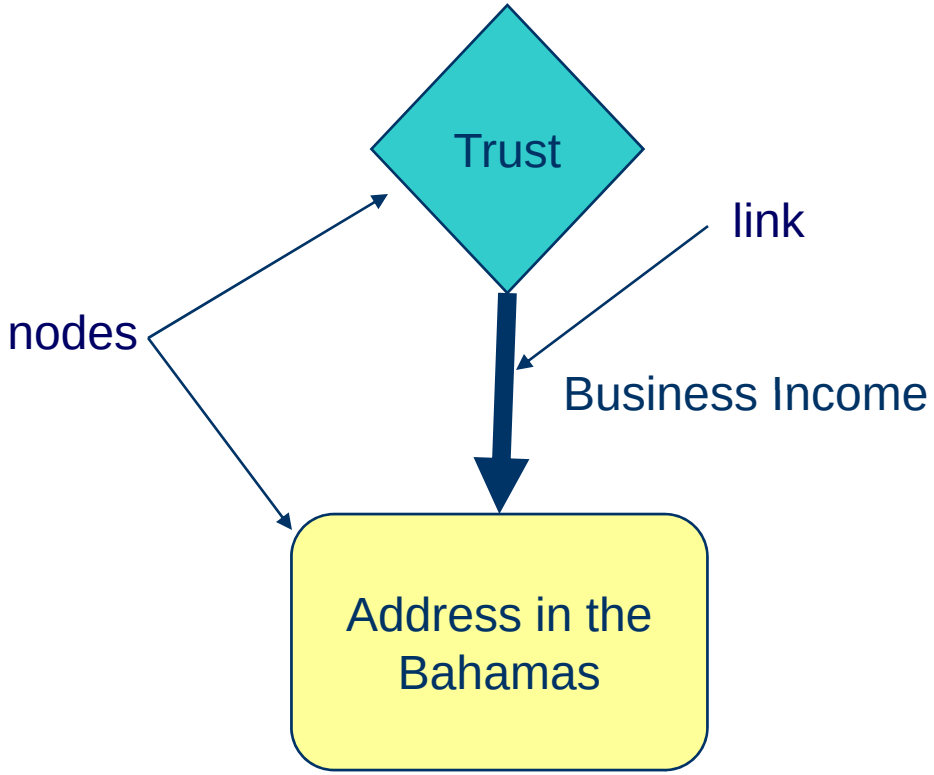
- Problem Statement: Given a **pattern** or **structure** of entities and their relationships, find other entities in the database that are structured similar to the specified pattern.
- Input provided will be the pattern, specified as a graph.
- In computer science, this is called the graph isomorphism problem – a hard problem (NP).

ATATs as Graphs: Accounting meets Computer Science

- Abusive tax transactions can be conceptualized as graph structures involving nodes (or vertices) and edges (or links).
- Conditions can be imposed on nodes and edges to form a labeled graph.
- Graph becomes the starting point for further explorations.
  - As opposed to a TIN in link analysis.
  - Complements link analysis tool.

Graph

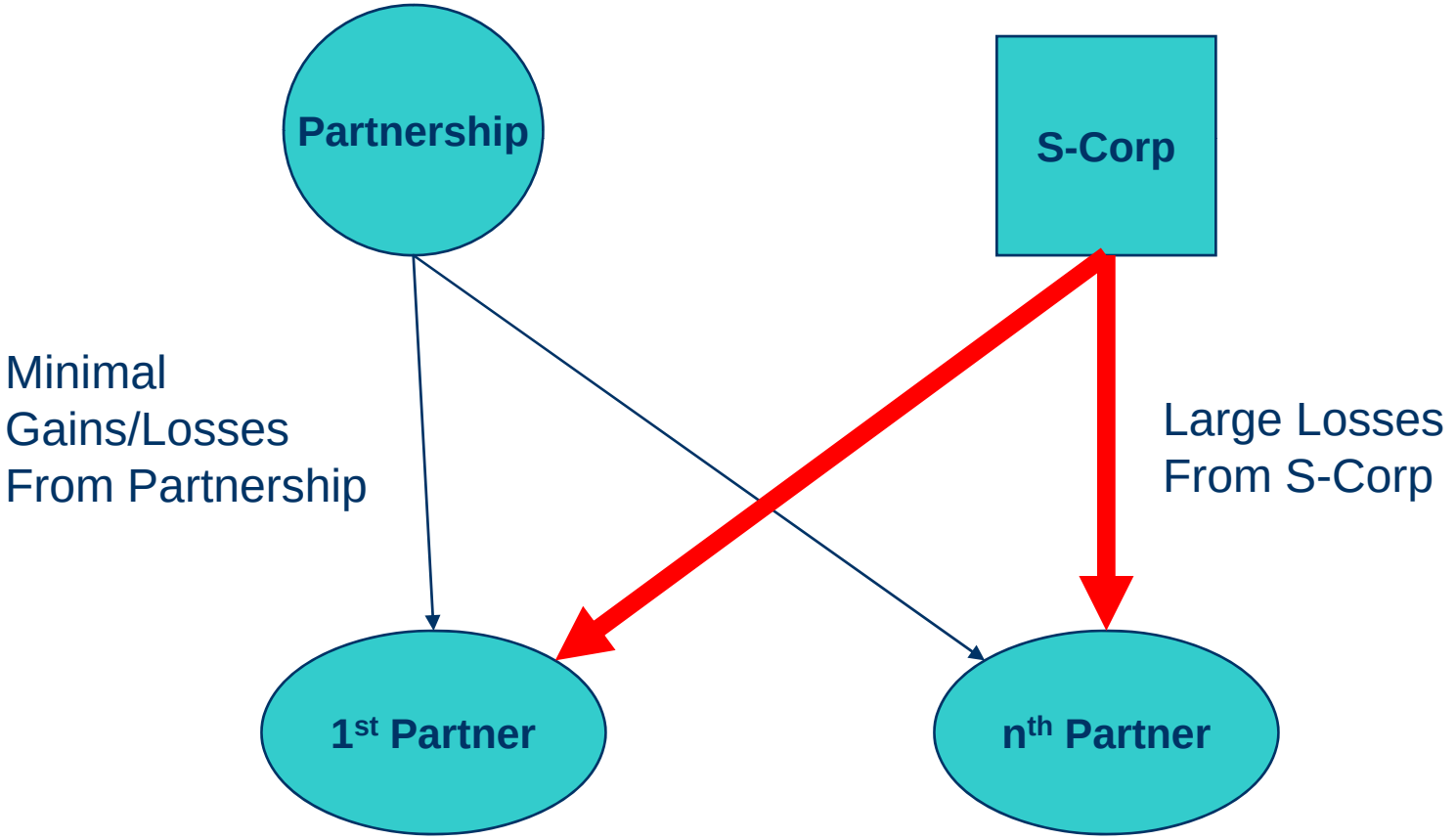
- Definition: A collection of points (nodes) and the lines (links) that connect them.



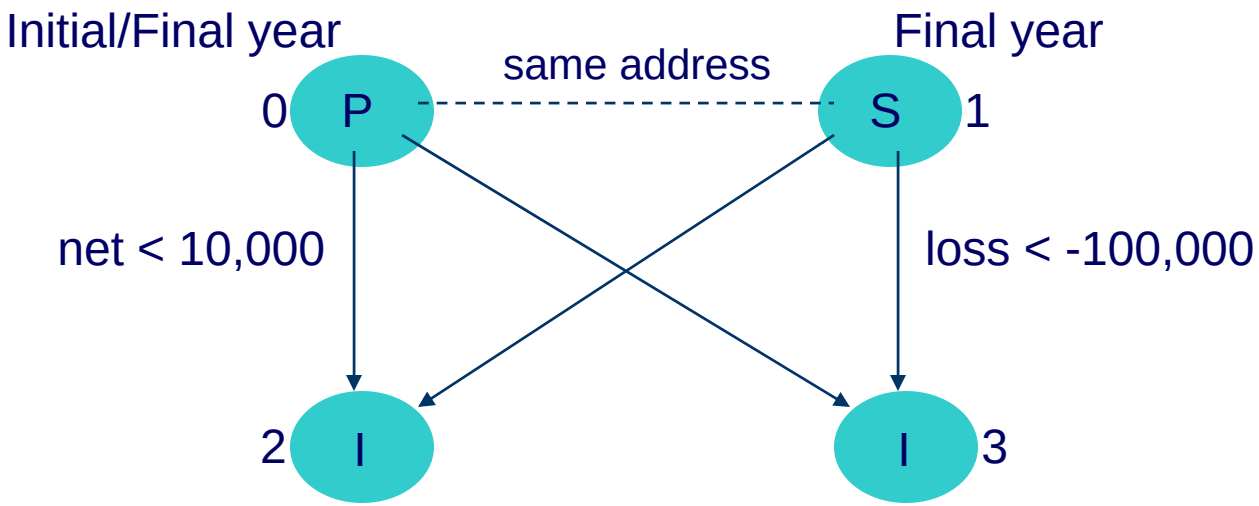
Abusive Shelter Example

- Taxpayers establish partnership: one partner is a tax indifferent entity.
- Taxpayers enter straddle:
  - Agreement to sell options to one party.
  - Agreement to purchase options from another.
- Allocate gains to tax indifferent partner.
- Terminate partnership.
- Claim large loss.

Abusive Shelter Example as a Graph



SON of BOSS as a Graph

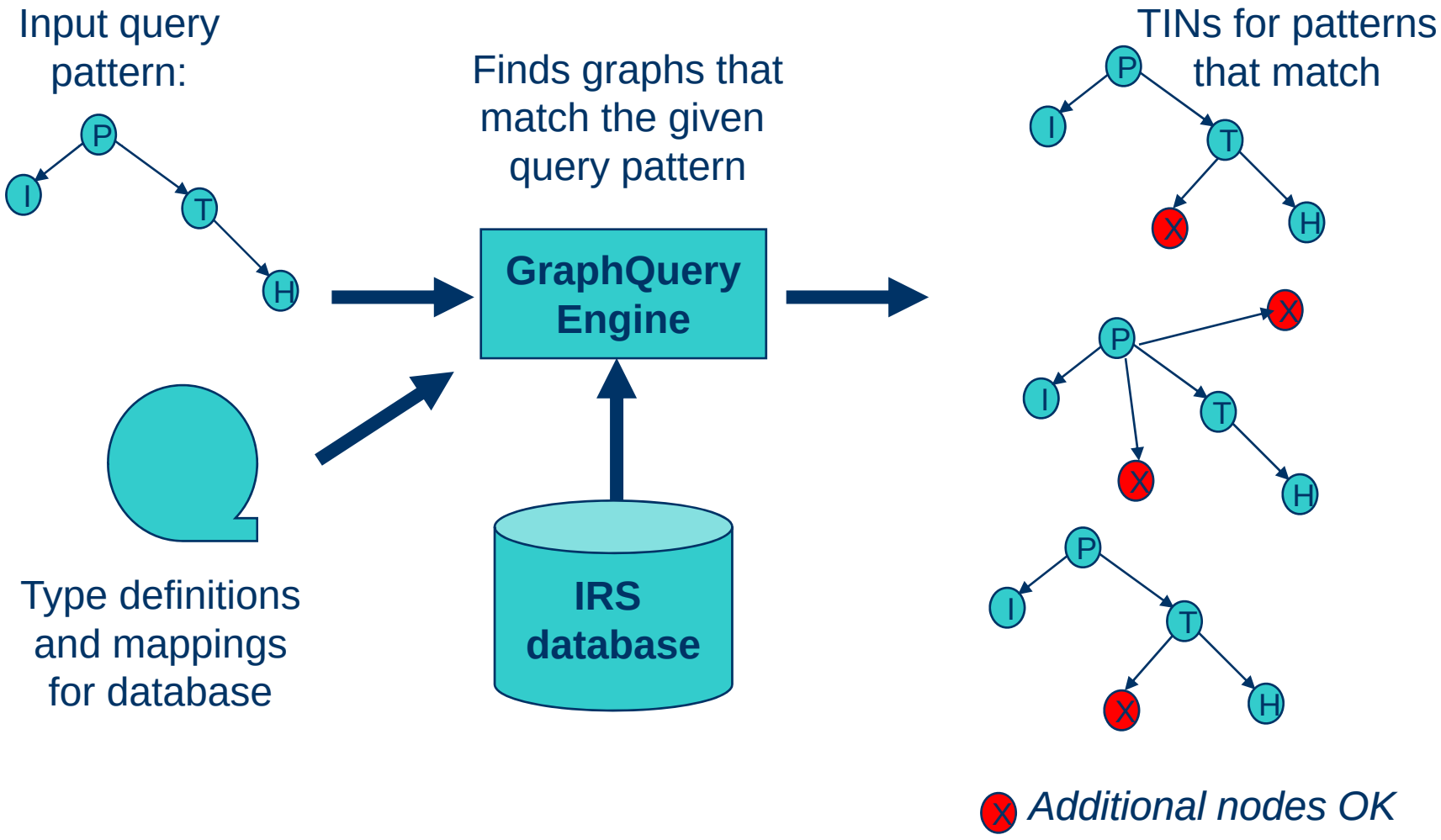


The graph shows an example of a Son of BOSS shelter involving a partnership (P) and an S-corporation (S), and two individuals (I).

ATATs as Graphs

- Definition: The process of describing the connections that link entities together.
- Entities (nodes):
  - Trusts (Form 1041)
  - Partnerships (Form 1065)
  - S-Corps (Form 1120S)
  - Businesses (Form 1120)
  - Individuals (Form 1040)
  - Locations (Any form w/addr)
- Connections (links):
  - Schedule K-1
    - Income
    - Deductions
  - Form 851 (Affiliations)
  - Form 1040 (Joint filers)

Graph Matching Process



Graph Matching Process (cont.)

- User specifies pattern of interest as a graph.
  - Accomplished via a drag-and-drop graphical user interface.
- Tool then translates graph into an intermediate Graph Representation Language (GRL).
  - Allows users who are comfortable with GRL to fine-tune the graph and/or its conditions.
- GRL includes notations to specify nodes, links, and conditions.
  - Graph specified using GRL is a sequence of nodes with conditions.
  - Followed by a sequence of links between nodes and conditions on those links.

Example GRL

```
v 0 partnership where init_year and final_year;
v 1 scorp where init_year;
v 2 individual;
v 3 individual;
```

Nodes

```
d 0 2 k1 where net < 10000;
d 0 3 k1 where net < 10000;
d 1 2 k1 where loss < -100000;
d 1 3 k1 where loss < -100000;
```

Links

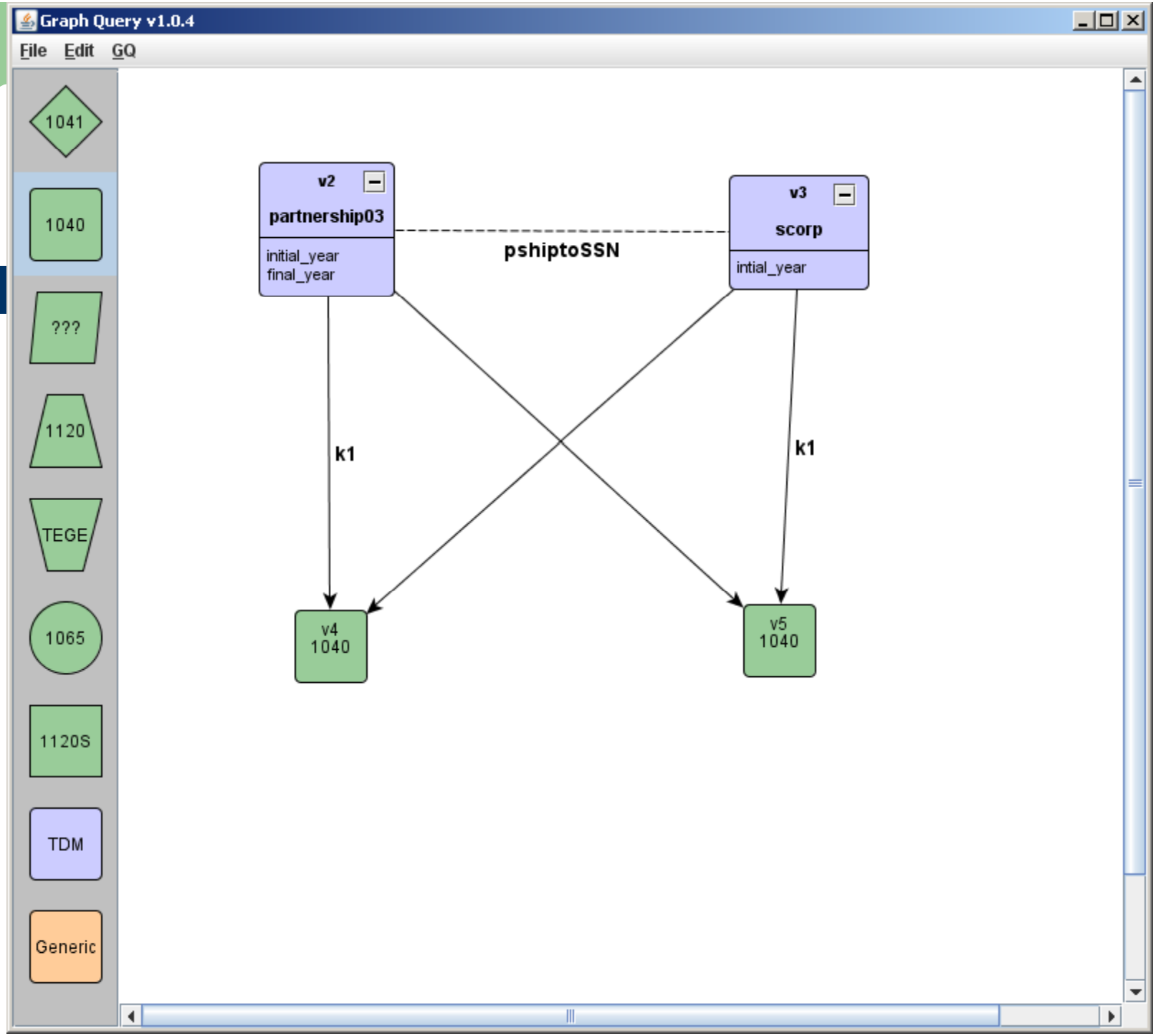
```
j 1 0 none where #0.zip = #1.zip
              and #0.addrs = #1.addrs;
```

GRL to IL

- Tool translates GRL into another intermediate language (IL)
  - node names and conditions are replaced by actual table and column names from the database.
  - The IL language bears a resemblance to SQL.
- Each line in the IL will become a query to the database.
  - To optimize query processing, the queries in the IL are sorted by the number of records that each query will return.

IL to Query

- Finally, tool translates IL into a series of SQL statements that are executed against the database.
- Output of each query results in a list of TINs.
- These TINs are presented as input to the next query.
- When the last query is executed, the resulting TINs would be the ones that participate in the structure specified.


Graph Query v1.0.4
File
Edit
GQ
1041
1040
???
1120
TEGE
1065
1120S
TDM
Generic
v2
partnership03
initial_year
final_year
pshiptoSSN
v3
scorp
intial_year
k1
k1
v4
1040
v5
1040

GraphQuery Benefits

- Empowers end users not familiar with graphs, SQL, databases, or programming to specify sophisticated ATAT patterns.
- Powerful tool to find interesting patterns in a database – potential to find high amounts of fraud.
- Can be applied to a variety of problems.

What Next?

- Slew of avenues that can be pursued:
  - Frequent substructure discovery (hard CS problem).
  - Enterprise risk (hard CS problem)
    - Given the concept of an enterprise and risk, find enterprises that have the greatest risk.
- The database can be changed to solve other problems:
  - Pattern of people who tend to have offshore accounts.

Session Four:

Issues Affecting High-Wealth Individuals

2009 IRS Research Conference

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Discussant: Len Burman

The Urban Institute

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During the break, please visit the SOI Booth in the upper lobby.

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