

Using DINA to Evaluate U.S. Capital Income Tax Proposals

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DINA from 1913 to ... 2037?

- Issues on distributing income effects of U.S. capital tax and other policy proposals on recent display
- Distributional framework choices
- Background on U.S. historical versus policy distributions
- 3 Models: Cash-plus, DINA, and Adjusted DINA
- Exercise Mechanics
- The capital income tax prototypes
- Results
- Lessons

50 Days of U.S. agency distributions

- Unlike revenue estimates and macro analysis, no formal legislative requirement for distributions though there is political pressure
- Under one view that emphasizes meeting logistical demands, U.S. agencies (CBO, JCT, TPC, etc.) have performed well under constraints
 - Healthcare mandate repeal in Senate bill (nod to DINA)
 - JCT separated “business” from “individual” effects for first time
- But no deficits, no comprehensive outlays, no formal accounting for foreign investors, no growth. Issues on territoriality, corporate tax incidence
- Presenting major capital income tax policy results with model that understates baseline capital income (and overstates capital income tax rates)
- Agencies in this position because of affinity for a cash-based approach
 - During last two decades focused on “dynamic” scoring, corporate tax incidence,

Distributional framework choices

- Income (accrual, DINA, or realization/cash based aka “Cash-plus”)
- Government outlay inclusivity (transfers, in-kind, state/local), plus deficits/surpluses
- Breadth of taxes (geography, type)
- Units of observation (households, tax units, adults)
- Welfare indicators (SWFs, pre- and post-tax, outlays, mobility)
- Outstanding technical issues (lifetime tax incidence, integrating macroeconomic effects when looking forward with policy proposals)

U.S. historical vs. policy distributions

- Historical modeling from the tax side requires managing endogeneity of tax and other law, as well as regulatory, changes
- Legislative policy distributions look forward, anywhere from 1 to 10 years (perhaps to 20 and beyond soon, depending upon budget period rule)
- PSZ ,CBO regularly offer U.S. historical distributions; JCT, OTA, and TPC not
 - CBO technically is involved with both historical and policy analysis
- All U.S. agencies use similar cash/realization approaches - “Cash-Plus”
 - Early PS research also a version of Cash-plus
- Historical/policy distributional conformity desirable
- Accrual approach, another method used for historical evaluation, likely collapses to national income or DINA-based method going forward

Cash-plus, DINA, and Adjusted DINA Models

- Capital income tax proposals good for testing models
- Cash-plus concepts relatively familiar to legislators and lay people, closer to administrative data
 - But see Medicare/Medicaid, fringe benefits, corporate tax incidence
 - For history, concerns for tax policy endogeneity, both pre- and post-tax
- DINA jumps the shark by using national income to calibrate
 - For pre-tax offers income classifier flexibility
 - Deficit allocation
 - All government levels, all government spending
- “Adjusted DINA” modifies DINA
 - BEPS link to labor bearing some corporate tax
 - Discounting deferred foreign earnings to lay in for territoriality
 - Incorporation of deemed growth for policy proposals
- For all proposals, foreign investor benefits are tracked

8 Capital Income Tax Prototypes Tested

- Corporate income tax repeal (-\$400 billion)
- 20% corporate tax rate (-\$140 B)
- Lax territoriality (-\$100 B)
- Corporate integration shifting liability to individuals*
- Harsher worldwide taxation with corporate rate reduction*
- Harsher worldwide taxation with deficit reduction*
- Simple version of pending (Dec. 2017) U.S. tax legislation (-\$115 B)
- Pending (Dec. 2017) U.S. legislation with repeal of healthcare mandate (-\$115 B)

* Revenue neutral

Mechanics

- Baseline
- Revenue Estimates + growth
- Foreign investors, deficit allocation, growth allocation
- Focus on post-tax (with post-tax broadly defined)
- 1/99, 10/90, 60/40 (Cash-plus), 50/50 (DINA)
- If growth deemed, “growth risk” analysis offered in Adjusted DINA model

Pre-Tax Income U.S. Distributions by Model and Year*

Model	2012		2013		2014		2015	
	\$Trillions	As a % of PSZ	\$Trillions	As a % of PSZ	\$Trillions	As a % of PSZ	\$Trillions	As a % of PSZ
CBO			\$12.3	85.3%				
JCT			\$11.7	81.1%	\$12.7	84.1%	\$13.3	84.8%
LBAA	\$12.5	88.8%	\$15.4	106.9%				
OTA							\$13.9	88.8%
TPC					\$13.9	91.7%		
PSZ	\$14.1		\$14.5		\$15.2		\$15.7	

* Author responsible for calculations. See Table 1 in text of accompanying paper. CBO is Congressional Budget Office; JCT is Joint Committee on Taxation; LBAA is Jeff Larrimore, Richard V. Burkhauser, Gerald Auten, and Philip Armour; OTA is Office of Tax Analysis, U.S. Treasury Department; TPC is Tax Policy Center; and PSZ is Thomas Piketty, Emmanuel Saez, and Gabriel Zucman. LBAA is an accrual model; PSZ is DINA; and others are Cash-plus.

Cash-Plus, DINA, and Adjusted DINA U.S. Baselines, at 2013 Levels* (\$ in Billions, otherwise %)

	Cash-plus	DINA	Adjusted DINA
Total Income:			
Pre-tax	\$12,330	\$14,450	\$14,310
Post-tax	\$9,860	\$14,450	\$14,310
Pre-tax and post-tax changes to DINA to create Adjusted DINA:			
Deferral discount			-\$40
Profit shifting			-\$100
Top 1% shares:			
Of pre-tax income	15.00%	19.60%	19.58%
Of post-tax income	12.40%	15.34%	15.28%
Top 10% shares:			
Of pre-tax income	37.98%	46.32%	46.31%
Of post-tax income	33.97%	38.75%	38.67%
Top 60% shares:			
Of pre-tax income	85.51%		
Of post-tax income	83.09%		
Top 50% shares:			
Of pre-tax income		87.23%	87.22%
Of post-tax income		80.68%	80.60%
* Author responsible for calculations, see Table 2 in accompanying paper.			

Charts 1A, 1B, 1C: Annual Post-tax Income Effects of Repealing Corporate Tax, by Pre-tax Income Splits and Distributions (2013 levels, \$ billions)

Chart 1A. By Pre-tax 1/99 Split and Alternate Distributions

■ Top 1% ■ Low 99% ■ Foreign Investors

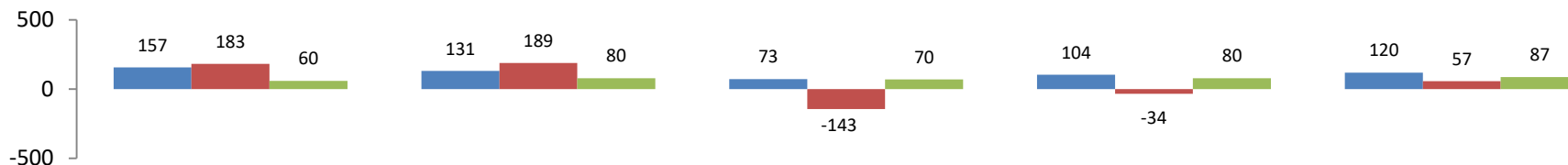


Chart 1B. By Pre-tax 10/90 Split and Alternate Distributions

■ Top 10% ■ Low 90% ■ Foreign Investors

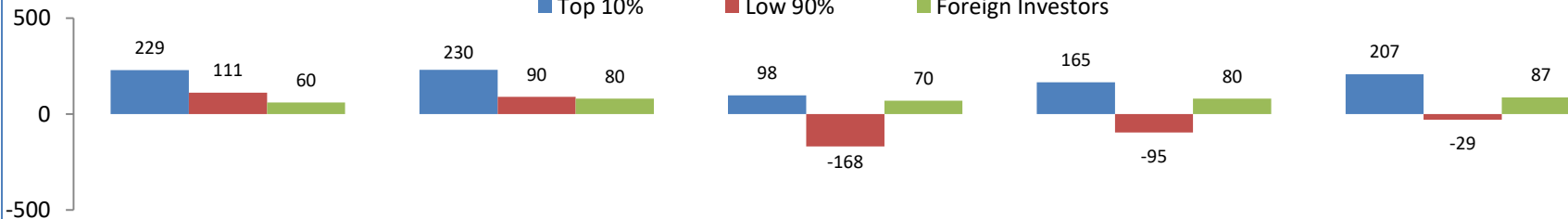
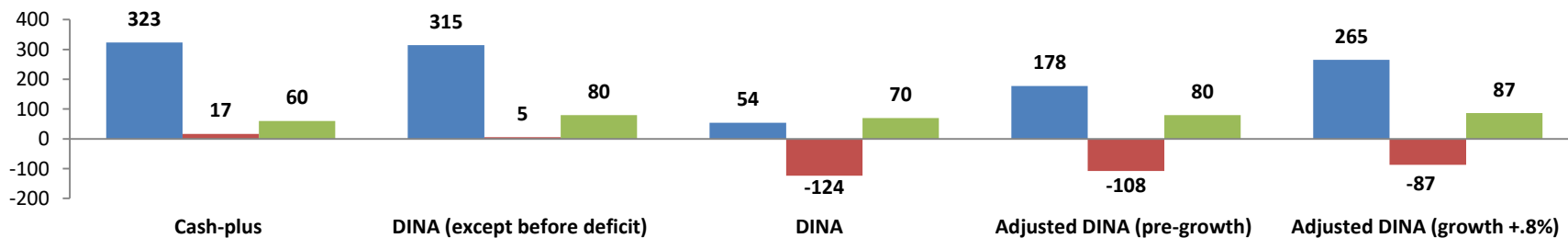


Chart 1C. By Pre-tax 60/40 and 50/50 Splits and Alternate Distributions

■ Top Income Group ■ Low Income Group ■ Foreign Investors



Distributional Approaches

60/40 Cash-plus, 50/50 DINA...

Chart 1R: Corporate Tax Repeal - Annual Post-tax Income Growth Range Risk by Pre-tax Income Splits for Adjusted DINA (2013 levels, \$ billions)

Chart 1Ra. Post-Tax Growth Risk Range by Low Income Group

(low number = no growth, higher number = +.8%)

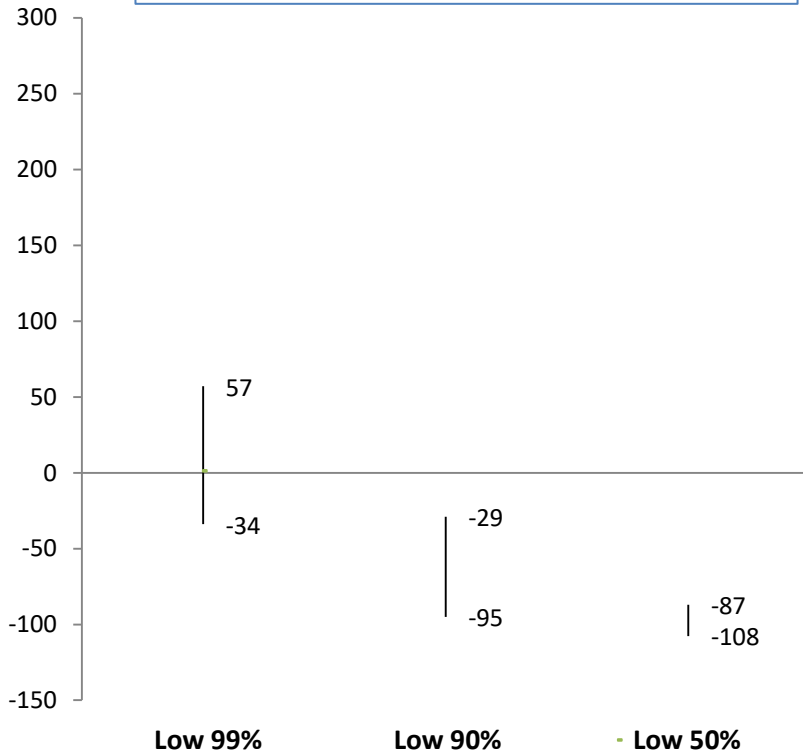
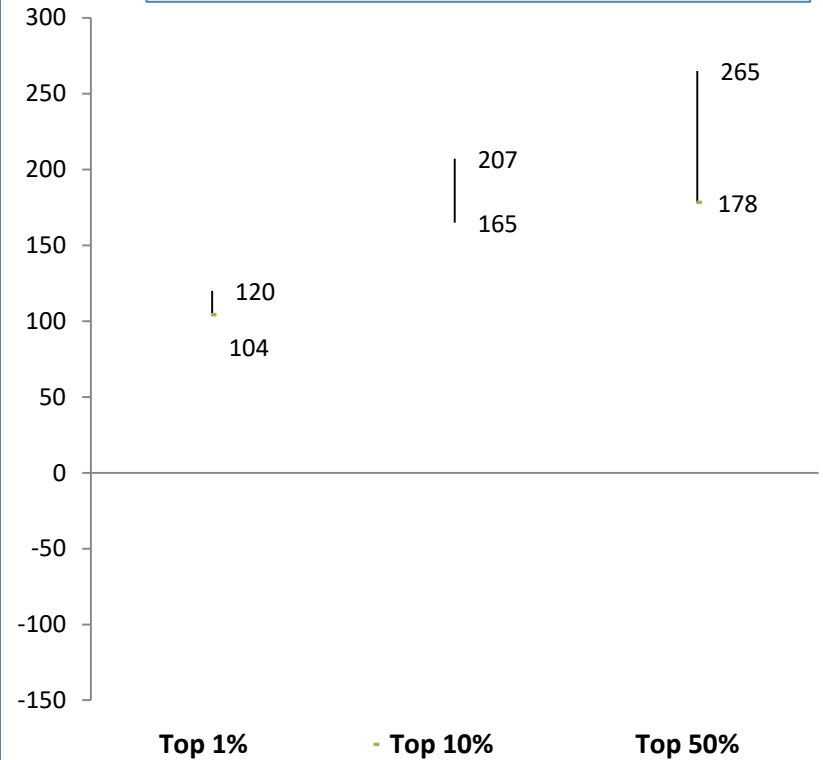


Chart 1Rb. Post-Tax Growth Risk Range by High Income Group

(low number = no growth, higher number = +.8%)



Charts 3A, 3C: Annual Post-tax Income Effects of Adopting Tax Territoriality, by Pre-tax Income Splits and Distributions (2013 levels, \$ billions)

Chart 3A. By Pre-tax 1/99 Split and Alternate Distributions

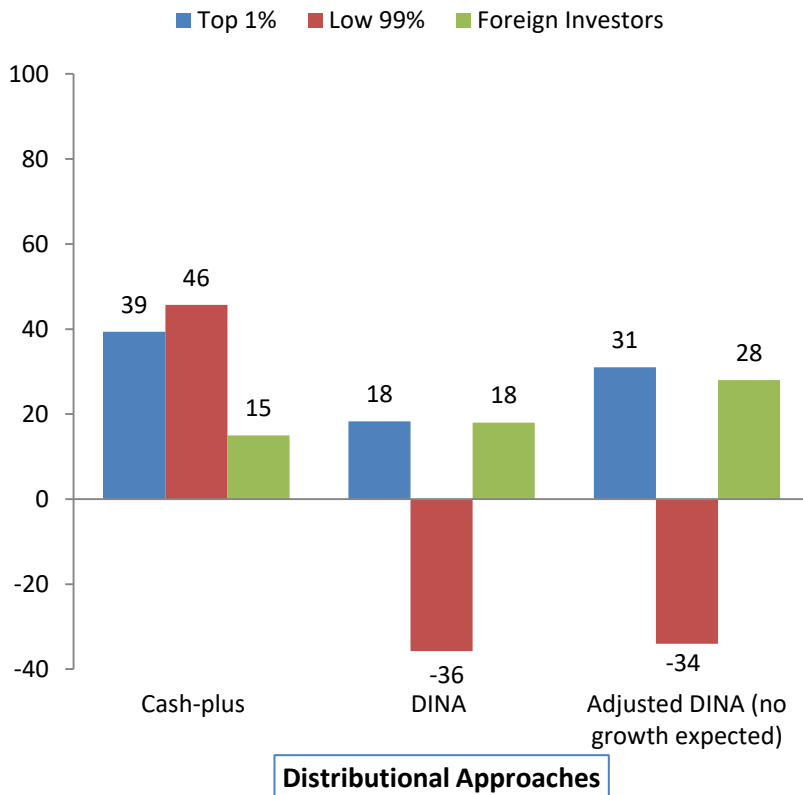


Chart 3C. By Pre-tax 60/40 and 50/50 Splits and Alternate Distributions

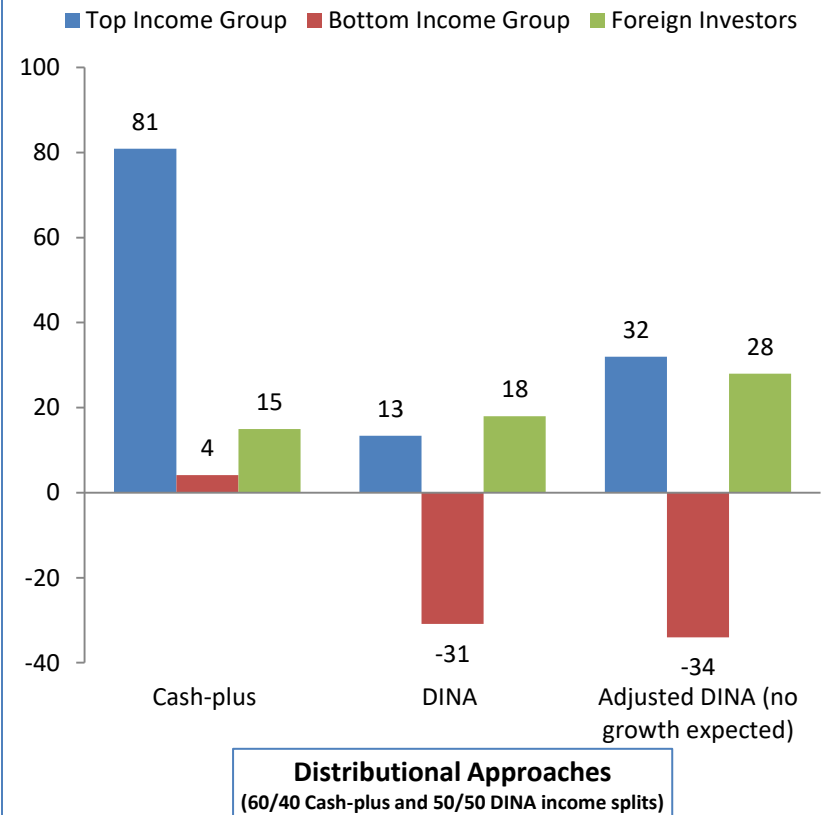
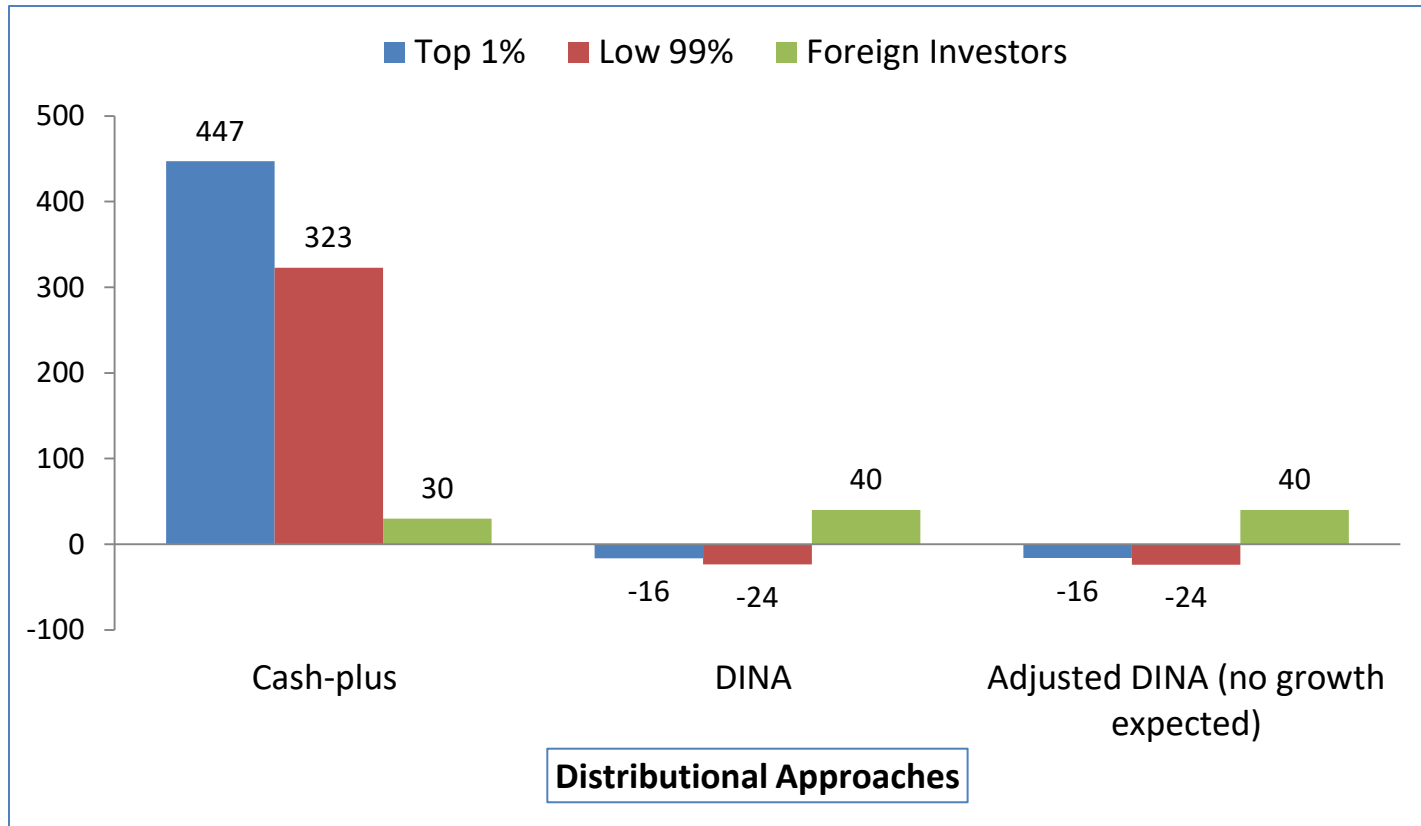
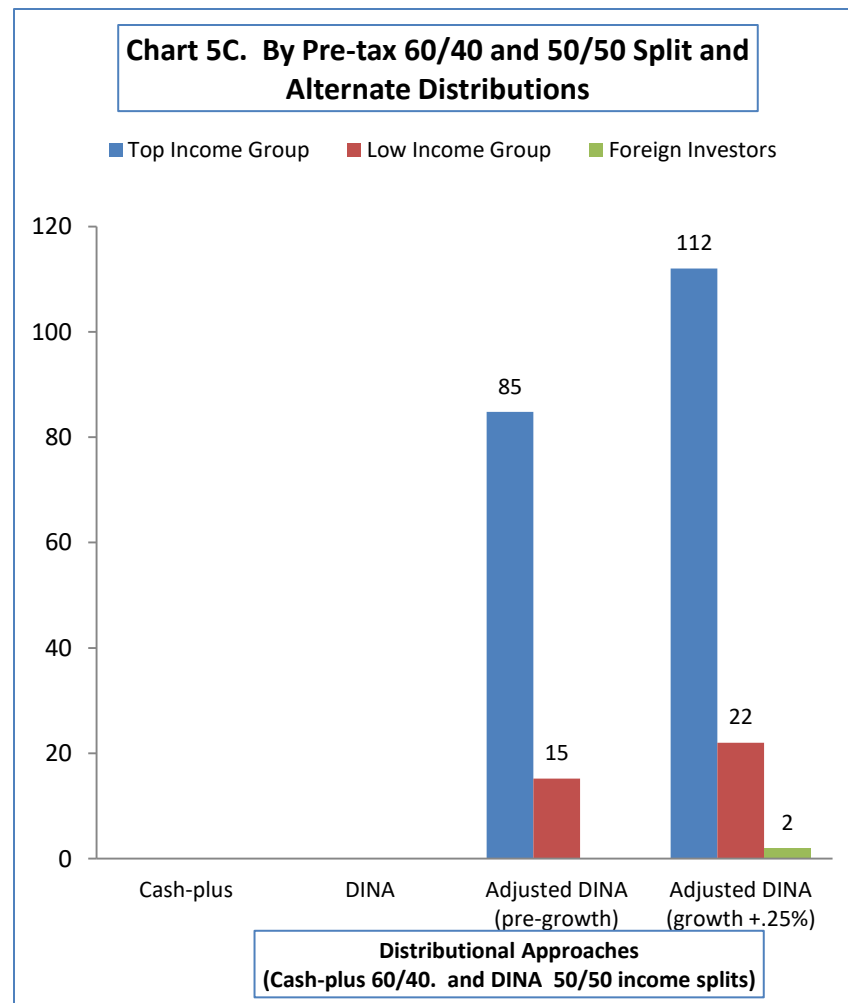
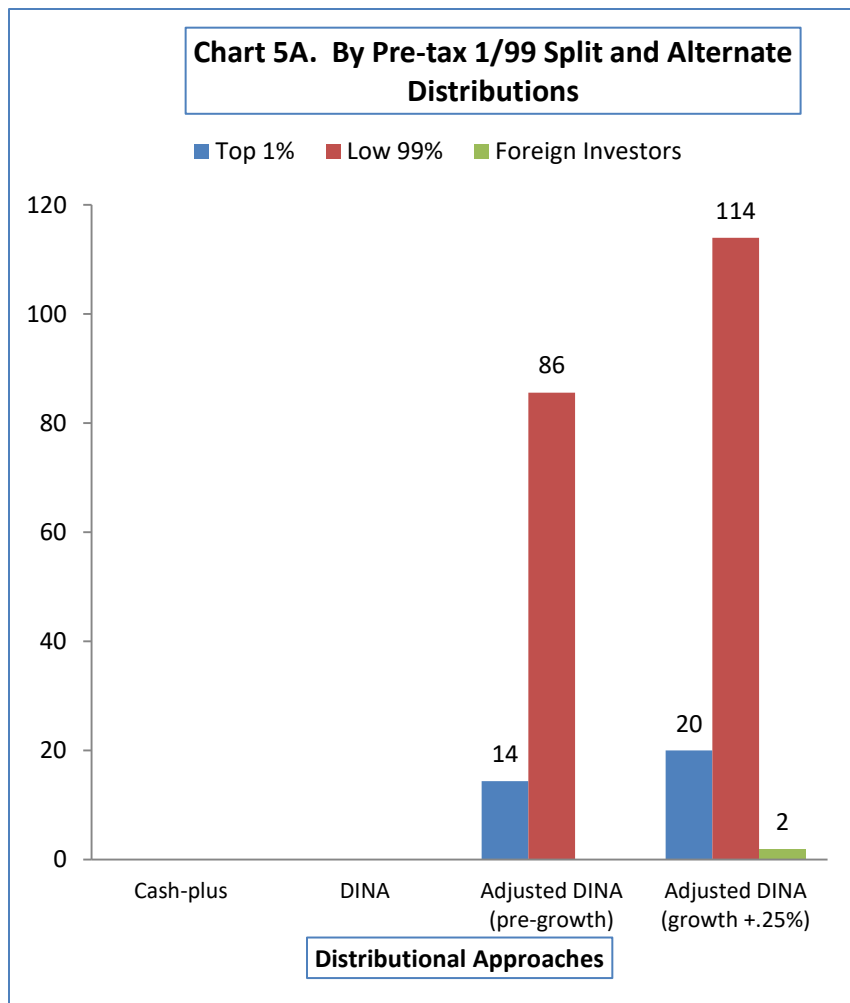


Chart 4A: Annual Post-tax Income Effects of \$200 Bils. Shift of Corporate Tax, by 1/99 Income Split and Distributions (2013 levels, \$ billions)



Charts 5A and 5C: Annual Post-tax Income Effects of Harsh Worldwide with Corporate Tax Cut, by Pre-tax Income Splits and Distributions (2013 levels, \$ billions)



Charts 6A and 6C: Annual Post-tax Income Effects of Harsh Worldwide to Pay Down Debt, By Pre-tax Income Splits and Distributions (2013 levels, \$ billions)

Chart 6A. By Pre-tax 1/99 Split and Alternate Distributions

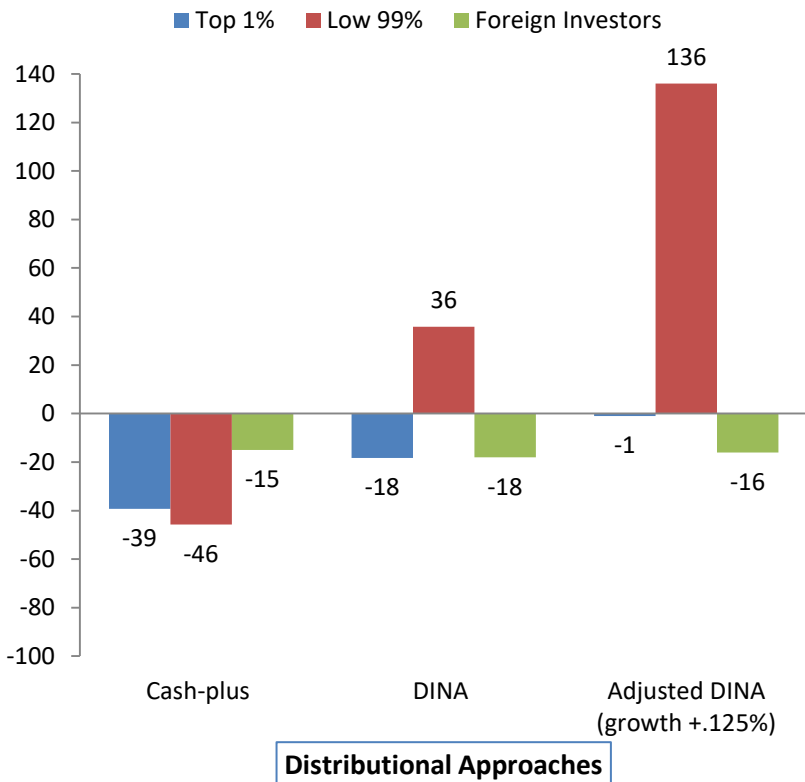
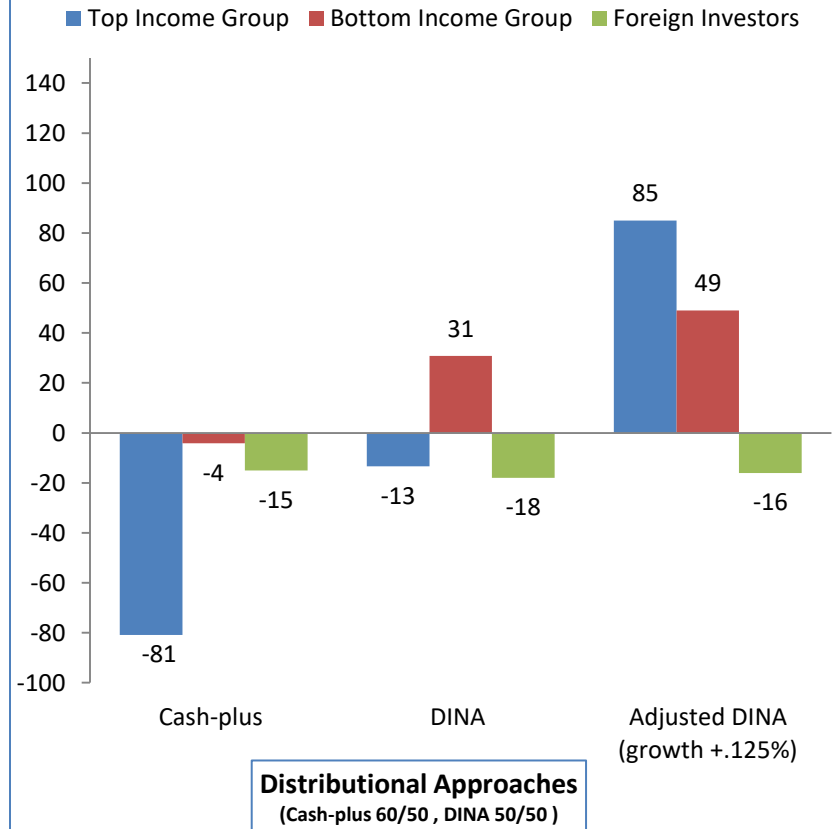


Chart 6C. By Pre-tax 60/40 and 50/50 Splits and Alternate Distributions



Charts 7C and 8C: Annual Post-tax Income Effects of Pending (Dec.2017) U.S. Legislation (with and without ACA mandate repeal) by Pre-tax Income Splits and Distributions (2013 level,\$bils.)

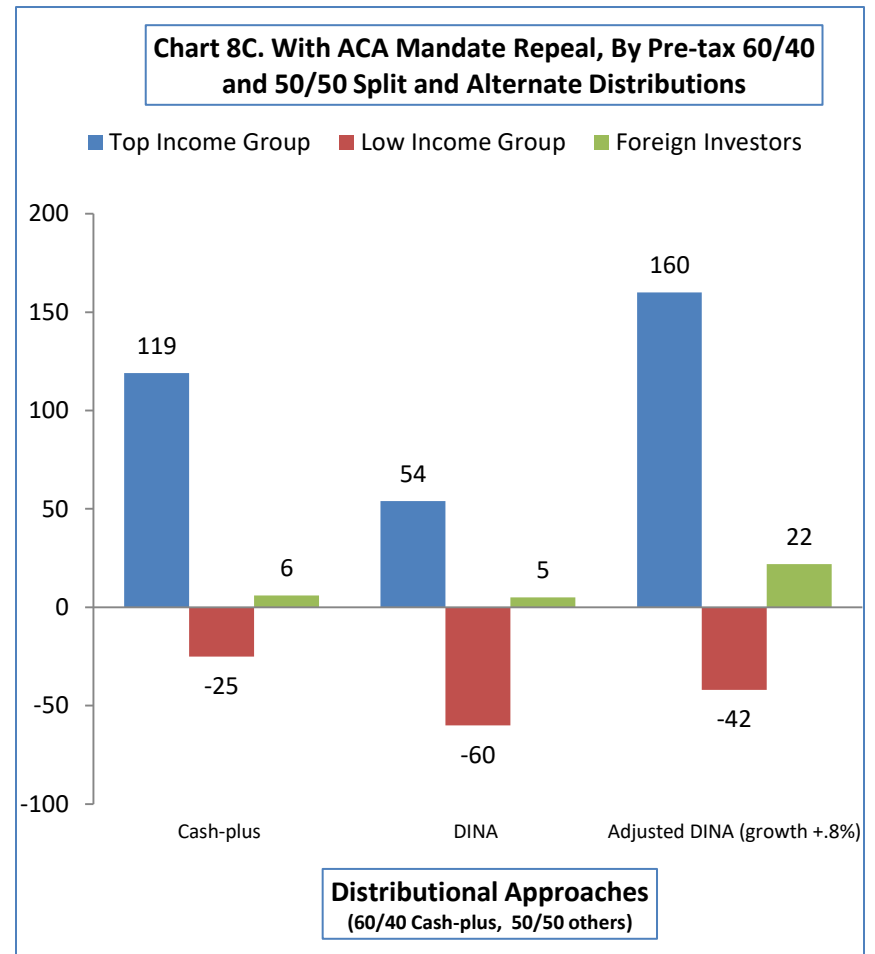
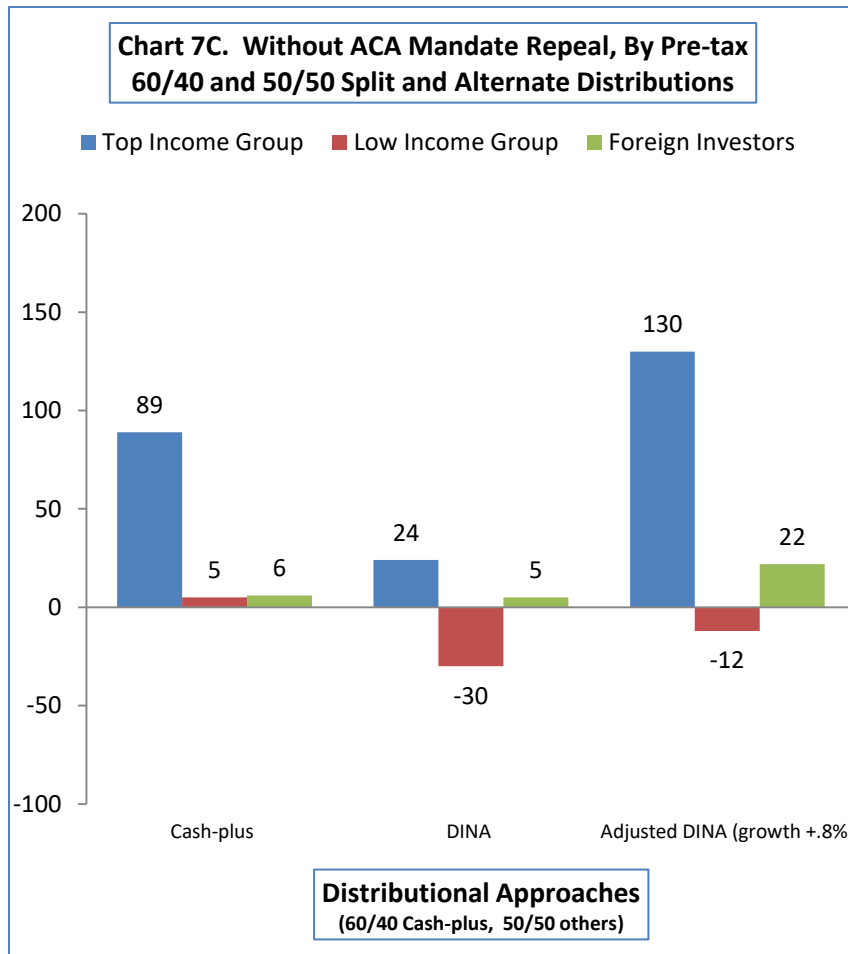
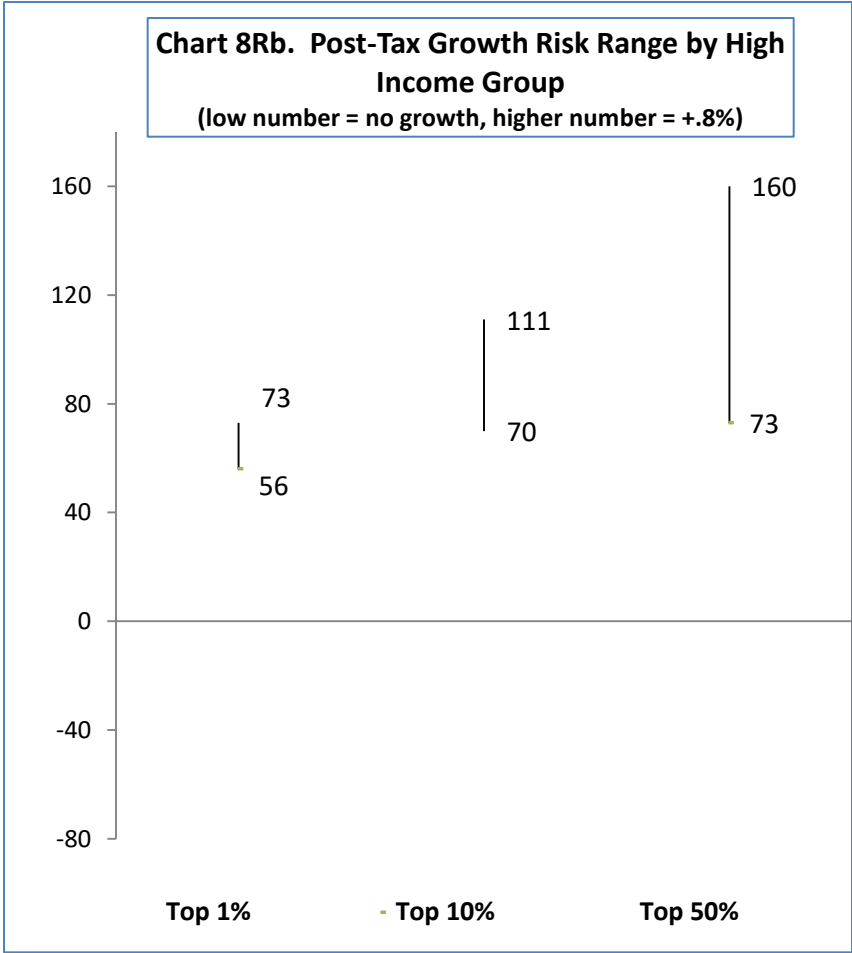
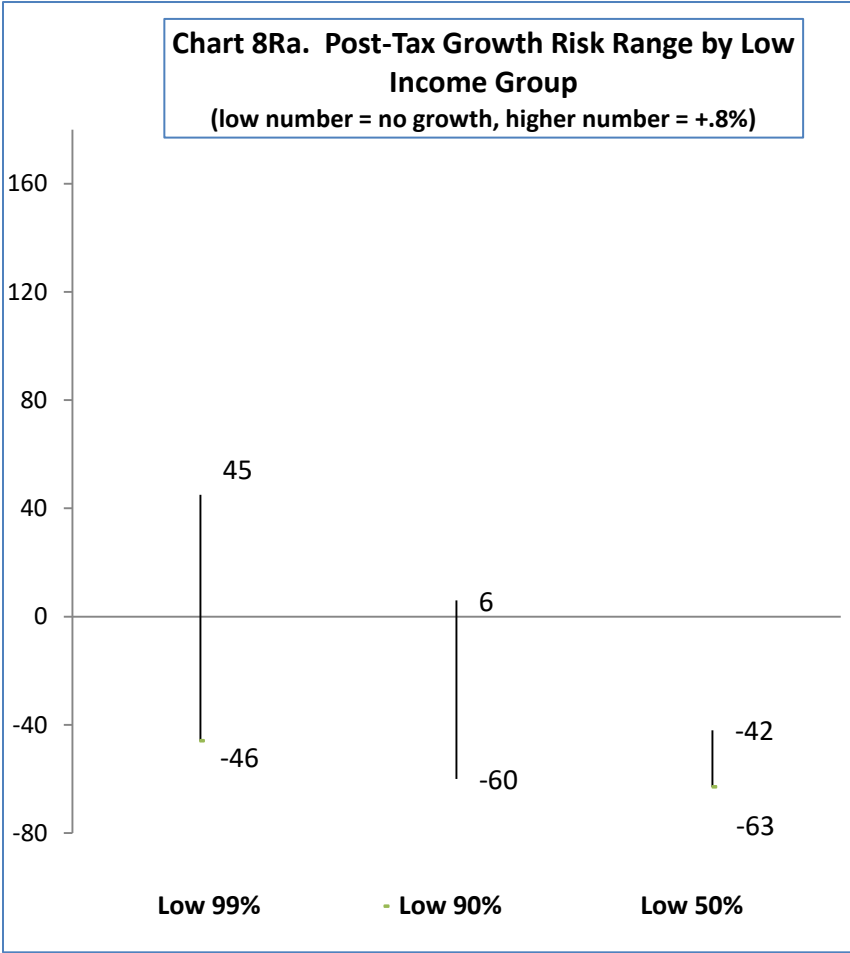


Chart 8R: Pending (Dec.2017) U.S. Legislation (with ACA mandate repeal) - Annual Post-tax Income Growth Range Risk by Pre-tax Income Splits for Adjusted DINA (2013 levels, \$ bills.)



Results Summary

- Adjusted DINA offers way of modeling BEPS's impact on labor as substitute for current U.S. agency corporate income tax distributional approach
- Adjusted DINA begins to show why investors/companies want territoriality
- Cash-plus can be misleading for integration proposals, both as to level of post-tax benefits and progressivity engendered with corporate tax change
- Tracking growth risk formalizes distributional intuition
- Generally, Cash-plus approaches show more favorable overall results, and particularly better relative and absolute results for low-income groups, for capital income tax reduction policies than DINA and Adjusted DINA models

Lessons

- A policy model that distributes deficits and outlays also should distribute growth (or non-growth) to get everything in the story
- May need more sensitivity analysis (i.e., income grouping or even going to more specific percentiles) with policy distributions than needed for historical evaluation
- Much to be done on aggregating source /home country taxation of foreign investors
- Pending U.S. tax legislation has potentially long phase-ins and phase-outs, big wealth effects, all affecting policy and historical distributions
- A consequence of U.S. tax legislation is likely greater diversion of Cash-plus from accrual and DINA-based models in historical evaluation
 - And the latter two models also may diverge more from each other as well)