
Douglas A Hibbs
Deakin University Melbourne, March 2014
Bread and Peace in History

“*The people have been promised more than can be promised; they have been given hopes that it will be impossible to realize ... The expenses of the new regime will actually be heavier than the old. And in the last analysis the people will judge the revolution by this fact alone – does it take more or less money? Are they better off? Do they have more work? And is that work better paid?”* – comte de Mirabeau (Honoré Gabriel Riqueti, moderate French revolutionary), 1791
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“Two questions now take precedence over all other political questions—the question of bread and the question of peace. ... Peace and bread, the overthrow of the bourgeoisie, revolutionary means for the healing of war wounds, the complete victory of socialism – such are the aims of the struggle.” – V.I. Lenin (leader of the Bolsheviks), 1917
Bread and Peace in Postwar US Presidential Elections

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“Westy, the American people don’t care about the ten. They care about the one.” –Senator Ernest Hollings, during a visit to his fellow South Carolinian in the field.
According to the *Bread and Peace* model, postwar American presidential elections can for the most part be interpreted as a sequence of referendums on the incumbent party’s record during its four year mandate period. In fact aggregate votes for president during the postwar era are well explained by just two objectively measured fundamental determinants:
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1. Weighted-average growth of per capita real disposable personal income over the term, and
2. Cumulative US military fatalities (scaled to population) owing to unprovoked, hostile deployments of American armed forces in foreign wars.

No other objectively measured exogenous factor systematically affected postwar aggregate votes for president.
Factor 1: Bread

- Economic performance is generally the dominant factor. The incumbent party is rewarded for good real income growth performance and punished for poor performance, with growth rates closer to the election date receiving more weight than outcomes earlier in the term. Voting is mainly retrospective (V.O. Key, 1966).
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- Growth of per capita real disposable personal income is probably the best single aggregate measure of changes in the electorate’s economic wellbeing available over the whole postwar period in as much as it includes cash and in-kind income and income supplements from (almost) all sources, includes transfer payments to persons, and is adjusted for inflation, taxes levied at all levels of government, and population growth.
Some limitations are that personal disposable income is measured only for geographic areas and not persons, takes no account of benefits people perceive from government supplied public goods, and does not include increments to income from realized capital gains while at the same time deducting from gross incomes taxes on such gains (thereby potentially giving an inaccurate picture of personal savings rates).
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My research indicates that electorally relevant economic performance is best measured by a weighted-average of (annualized, quarterly) growth rates of per capita disposable personal income, computed from the election quarter back to the first full quarter of each presidential term.
Factor 2: Peace

- The second factor systematically influencing postwar aggregate votes for president is US military fatalities owing to unprovoked, hostile deployments of American armed forces in foreign conflicts – namely the military interventions in Korea, Vietnam, Iraq and the second Afghanistan campaign (under Obama).
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- My research shows that the electoral penalties exacted by such unprovoked wars affect the presidential vote of party initiating the commitment of US forces – the Republicans for Iraq, and the Democrats for Korea, Vietnam and most recently Afghanistan – and those vote penalties are proportionate to the cumulative number of American military fatalities (scaled to US population size) over the presidential term.
My research also shows that Presidents inheriting unprovoked foreign wars are given a 1-term grace period before US fatalities begin to negatively affect the incumbent vote share in presidential elections. Hence Nixon’s vote in 1972 was not significantly affected by US fatalities in Vietnam during his first term because the Vietnam war was inherited from Kennedy-Johnson, and Obama’s vote in 2012 was not significantly affected by fatalities in Iraq because the Iraq war was inherited from GW Bush. (Evidence: see Hibbs, *Public Choice*, 2000 and 2008)
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The *Bread and Peace* model regards American fatalities in Afghanistan under GW Bush following September 11 2001 as owing to a provoked commitment of US forces and, therefore, unlike Iraq, fatalities in the first US campaign in Afghanistan did not detract from Bush’s vote in 2008.
However, US fatalities in Afghanistan beginning under President Obama’s prolonged “war of necessity” against the Taliban more than seven years later are treated as owing to an unprovoked foreign war, and as a result under the *Bread and Peace* model those fatalities will negatively affect the Democrat party’s presidential vote in the 2012 election.
However US fatalities in Afghanistan beginning under President Obama’s prolonged “war of necessity” against the Taliban more than seven years later are treated as owing to an unprovoked foreign war, and as a result under the *Bread and Peace* model those fatalities will negatively affect the Democrat party’s presidential vote in the 2012 election.

Fatalities exert no systematic influence on aggregate congressional election outcomes.
Other Factors

- Other factors of course influence presidential voting; potentially so dramatically that the persistent signal of objective *bread and peace* fundamentals may be obscured. However such events are transitory/idiosyncratic rather than persistent/systematic. They randomly from election to election, and they defy ex-ante objective measurement.

My ex-post reading of polling data suggest that partisan cleavage over immigration reform and reproductive rights were the main idiosyncratic factors helping President Obama overcome the fairly poor 2012 reelection prospects implied by relatively weak economic performance during his first term.
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- The accounts of Talking Heads and journalists (and, alas, some academic analyses as well) of election results are frequently populated with stories revolving around election-specific idiosyncratic factors, whose true influence can be assessed scientifically only by statistical conditioning on persistent fundamentals.
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Of course if every election were dominated by transitory idiosyncratic issues — and there is no reason in principle why every election could not — we wouldn’t observe the strong relationship of incumbent vote shares to Bread and Peace fundamentals shown ahead.
Objective of the Bread and Peace Model

- The *Bread and Peace* model is designed to *explain* presidential election outcomes in terms of objectively measured political-economic fundamentals, rather than to *predict* optimally election results, or to track them *statistically* after the fact. The objective is to pin down quantitatively the impact of persistent fundamental determinants on the incumbent party’s aggregate vote.
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- For those reasons the model includes no arbitrarily coded dummy, count, trend, and related time-coded variables, which are not objective measurements of policies and performance affecting voters.
Likewise the Bread and Peace Model makes no use of preelection poll readings of voter sentiments, preferences, and opinions. Attitudinal variables are endogenous: they are affected causally by objective fundamentals and consequently supply no insight into the root causes of voting behavior, no matter how much they may enhance accuracy of prediction.
The *Bread and Peace* model is written:

\[ \text{Vote}_t = \alpha + \beta_1 \left( \sum_{j=0}^{14} \lambda^j \Delta \ln R_{t-j} \cdot \left( 1 \big/ \sum_{j=0}^{14} \lambda^j \right) \right) + \beta_2 \text{Fatalities}_t \]

*where:*

- *Vote* is the percentage share of the two-party vote for president received by the candidate of the incumbent party.
- $R$ is per capita disposable personal income deflated by the Consumer Price Index, $\Delta \ln R_t$ is the quarter-to-quarter log-percentage change expressed at annual rates and is computed $\ln \left( \frac{R_t}{R_{t-1}} \right) \cdot 400$, $\lambda \in (0, 1)$ is a lag weight parameter determining the electoral effect of real income growth rates just before the election as compared to growth rates earlier in the term, and the reciprocal of the sum of the lag weights $\left( \frac{1}{\sum_{j=0}^{14} \lambda^j} \right)$ scales the real income growth rate sequence $\Delta \ln R_t + \lambda \Delta \ln R_{t-1} + \lambda^2 \Delta \ln R_{t-2} + \ldots + \lambda^{14} \Delta \ln R_{t-14}$ so that the coefficient $\beta_1$ represents the effect on the incumbent vote share of each log-percentage point of weighted-average, annualized, quarter-to-quarter real income growth sustained over the presidential term.
Note that as the weighting parameter $\lambda$ approaches a value of 1.0 the incumbent party vote share is affected by a simple average of per capita real income growth rates over the whole term – growth at the beginning of the term has the same electoral impact as growth just before the election:

$$\text{At } \lambda = 1 \Rightarrow \left( \sum_{j=0}^{14} 1^j \Delta \ln R_{t-j} \cdot \left( 1 / \sum_{j=0}^{14} 1^j \right) \right)$$

$$= \sum_{j=0}^{14} \Delta \ln R_{t-j} / 15 = \Delta \ln R$$

As $\lambda$ approaches zero only the election quarter growth rate affects votes for president:

$$\text{At } \lambda = 0 \Rightarrow \left( \sum_{j=0}^{14} 0^j \Delta \ln R_{t-j} \cdot \left( 1 / \sum_{j=0}^{14} 0^j \right) \right) = \Delta \ln R_t$$

Values of $\lambda$ between 0 and 1 reveal the relative effects of real income growth rates just before the election as compared to growth rates earlier in the term.
# Bread and Peace Equation Estimates

Dependent variable: incumbent two-party vote share (%)  
N=16 elections, 1952-2012

<table>
<thead>
<tr>
<th>Coefficient estimate</th>
<th>std. error</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant ($\alpha$)</td>
<td>47.1</td>
<td>1.1</td>
</tr>
<tr>
<td>Weighted-average per capita real income growth rate, % ($\beta_1$)</td>
<td>3.1</td>
<td>0.55</td>
</tr>
<tr>
<td>Lag weight ($\lambda$)</td>
<td>0.87</td>
<td>0.07</td>
</tr>
<tr>
<td>US military fatalities per millions population ($\beta_2$)</td>
<td>-0.05</td>
<td>0.01</td>
</tr>
</tbody>
</table>

$Adj.R^2 = .81$  
$SER = 2.4$
Interpretation of Coefficients

\[ \text{Vote}_t = 47 + 3 \left( \sum_{j=0}^{14} 0.9^j \Delta \ln R_{t-j} \cdot \left( 1 / \sum_{j=0}^{14} 0.9^j \right) \right) - 0.05 \text{ Fatalities} \]

**Real income growth rate effect, \( \Delta R \)**

- \( \hat{\beta}_1 \approx 3 \) implies that each percentage point of growth in per capita real disposable personal income sustained over a presidential term boosts the in-party candidate’s vote share by about 3 percentage points above a benchmark constant of approximately 47 percent.
\[ \text{Vote}_t = 47 + 3 \left( \sum_{j=0}^{14} 0.9^j \Delta \ln R_{t-j} \cdot \left( 1 / \sum_{j=0}^{14} 0.9^j \right) \right) - 0.05 \text{ Fatalities} \]

**Lag weight (electorally relevant political memory)**

- The weighting parameter estimate \( \hat{\lambda} \approx 0.9 \) implies that the real income growth rate in the last full quarter before an election (quarter 3 of election years) has almost four times the electoral impact of income growth in the first full quarter of the term: \( 0.9 / 0.9^{14} \approx 4 \).
\[ Vote_t = 47 + 3 \left( \sum_{j=0}^{14} 0.9^j \Delta \ln R_{t-j} \cdot \left(1 / \sum_{j=0}^{14} 0.9^j \right) \right) - 0.05 \text{ Fatalities} \]

**Fatalities effect**

- The fatalities coefficient estimate \( \hat{\beta}_2 = -0.05 \) means that each 100 US military fatalities per millions of population owing to hostile deployments of American armed forces in unprovoked wars depresses the incumbent party’s presidential vote by 5 percentage points.
The Relation of Vote Shares to Real Income Growth


Incumbent share of two-party vote (%)

Weighted-average per capita real income growth over the term (%)

Regression line and war effects computed from Bread and Peace equation estimates.
Source: www.douglas-hibbs.com, 27 December 2013
The Relation of Vote Shares to Real Income Growth and Fatalities Combined


Combination of real growth and fatalities weights each variable by its estimated coefficient. Estimated effects of fatalities on vote shares: -0.7% in 2008 (Iraq), -7.6% in 1968 (Vietnam), -9.9% in 1952 (Korea); negligible in 1964, 1976, 2004, 2012 and null in other years.

Source: www.douglas-hibbs.com, 27 December 2013
## Data and Model Fits

<table>
<thead>
<tr>
<th>Candidates</th>
<th>Year</th>
<th>Vote</th>
<th>Fit</th>
<th>Error</th>
<th>Real_Income_Growth</th>
<th>Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stevenson v. Eisenhower</td>
<td>1952</td>
<td>44.7</td>
<td>45.4</td>
<td>-0.7</td>
<td>2.6</td>
<td>190</td>
</tr>
<tr>
<td>Eisenhower v. Stevenson</td>
<td>1956</td>
<td>58.0</td>
<td>56.3</td>
<td>1.7</td>
<td>2.9</td>
<td>0</td>
</tr>
<tr>
<td>Nixon v. Kennedy</td>
<td>1960</td>
<td>49.9</td>
<td>49.9</td>
<td>0.0</td>
<td>0.9</td>
<td>0</td>
</tr>
<tr>
<td>Johnson v. Goldwater</td>
<td>1964</td>
<td>61.2</td>
<td>60.8</td>
<td>0.4</td>
<td>4.4</td>
<td>1</td>
</tr>
<tr>
<td>Humphrey v. Nixon</td>
<td>1968</td>
<td>49.4</td>
<td>48.5</td>
<td>0.9</td>
<td>2.9</td>
<td>146</td>
</tr>
<tr>
<td>Nixon v. McGovern</td>
<td>1972</td>
<td>61.8</td>
<td>59.4</td>
<td>2.4</td>
<td>3.9</td>
<td>0</td>
</tr>
<tr>
<td>Ford v. Carter</td>
<td>1976</td>
<td>49.0</td>
<td>49.8</td>
<td>-0.8</td>
<td>0.9</td>
<td>2</td>
</tr>
<tr>
<td>Carter v. Reagan</td>
<td>1980</td>
<td>44.8</td>
<td>44.4</td>
<td>0.4</td>
<td>-0.9</td>
<td>0</td>
</tr>
<tr>
<td>Reagan v. Mondale</td>
<td>1984</td>
<td>59.1</td>
<td>59.2</td>
<td>-0.1</td>
<td>3.9</td>
<td>0</td>
</tr>
<tr>
<td>GHW Bush v. Dukakis</td>
<td>1988</td>
<td>53.8</td>
<td>55.6</td>
<td>-1.7</td>
<td>2.7</td>
<td>0</td>
</tr>
<tr>
<td>GHW Bush v. Clinton</td>
<td>1992</td>
<td>46.4</td>
<td>49.4</td>
<td>-3.0</td>
<td>0.7</td>
<td>0</td>
</tr>
<tr>
<td>Clinton v. Dole</td>
<td>1996</td>
<td>54.7</td>
<td>50.8</td>
<td>3.9</td>
<td>1.2</td>
<td>0</td>
</tr>
<tr>
<td>Gore v. GW Bush</td>
<td>2000</td>
<td>50.3</td>
<td>54.9</td>
<td>-4.7</td>
<td>2.5</td>
<td>0</td>
</tr>
<tr>
<td>GW Bush v. Kerry</td>
<td>2004</td>
<td>51.2</td>
<td>52.9</td>
<td>-1.7</td>
<td>1.9</td>
<td>4</td>
</tr>
<tr>
<td>McCain v. Obama</td>
<td>2008</td>
<td>46.3</td>
<td>45.9</td>
<td>0.5</td>
<td>-0.2</td>
<td>14</td>
</tr>
<tr>
<td>Obama v. Romney</td>
<td>2012</td>
<td>52.0</td>
<td>49.4</td>
<td>2.6</td>
<td>0.8</td>
<td>5</td>
</tr>
</tbody>
</table>
The graph depicts a strong connection of major-party vote shares received by incumbent party candidates to weighted-average per capita real personal disposable income growth rates at postwar presidential elections 1952-2012.

Notice that even the two elections regarded as the most “ideological” in postwar American presidential politics – 1964 and 1980 – are explained perfectly by real income growth over the presidential term.
1964

In 1964 the Democratic Party incumbent Lyndon Johnson, the most important agent of American welfare-state liberalism since Franklin Roosevelt, faced Barry Goldwater, the godfather of modern American conservatism. Johnson won with 61.2% of the vote, one of the biggest margins in US presidential election history.

The result was widely viewed as a popular rejection of Goldwater’s alleged right-wing views on the Federal Government’s proper role in society and economy and his bellicose posture on America’s Cold War rivalry with the Soviet Bloc.

Yet one need not appeal to such grand ideological themes to explain the 1964 election result – Johnson’s landslide victory conforms exactly to the historical connection between presidential voting outcomes and real income growth.
1980

- In 1980 the incumbent Jimmy Carter faced Ronald Reagan, Goldwater’s successor as the icon of the Republican Party’s conservative wing. Unlike the Goldwater-Johnson contest in 1964, this time the arch conservative Reagan trounced the liberal Democrat Carter. The election was commonly interpreted in the media as signaling a fundamental “shift to right” among American voters.

- Yet again one need not appeal to grand ideological themes: As shown by the graph, Carter’s big loss (he received only 44.8% of the vote – tied for the worst election showing by an incumbent party presidential candidate during the postwar era) was the predictable consequence of poor real income growth over the 1977-80 term.
The elections of 1952 and 1968 exhibit the biggest deviations from the statistical prediction line based on weighted-average over the term real income growth performance.

Those deviations are explained by the second fundamental systematic determinant of votes for president: American military fatalities in unprovoked foreign wars.
Korea and Vietnam

- High cumulative US military fatalities in Korea at the time of the 1952 election (29,260 or 190 per millions of population), and in Vietnam at the 1968 election (28,900 or 146 per millions of population), most likely caused Adlai Stevenson’s loss to Dwight Eisenhower in 1952 by depressing the incumbent party’s presidential vote by almost 10 percentage points, and it almost certainly caused Hubert Humphrey’s loss to Richard Nixon in 1968 depressing the incumbent party’s vote by more than 7 percentage points. Absent America’s interventions in the Korean and Vietnamese civil wars, the strong real income growth record prior to those elections (particularly in 1968) should easily have kept the Democrats in the White House.
Inherited Wars

- Recall that in the *Bread and Peace* model presidents get a one-term grace period when unprovoked foreign wars are inherited from the opposition party.
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- Hence the 1956 vote for Dwight Eisenhower (who inherited American involvement in the Korean civil war from Harry Truman) was unaffected by the relatively small number of US military fatalities in Korea after Eisenhower assumed office in 1953.

- In like fashion the 1972 vote for Richard Nixon (who inherited American involvement in the Vietnamese civil war from Lyndon Johnson) was unaffected by the large (but declining) number of US fatalities in Vietnam after Nixon assumed office in 1969.
Iraq and Afghanistan

- Cumulative fatalities in Iraq preceding the 2004 and 2008 elections (4 and 14 per millions of population, respectively) were too small to depress significantly the vote shares of the incumbent Republicans, and the cumulative fatalities in Afghanistan at the 2012 election (5 per millions of population) were too small to detract much from Obama’s vote share in 2012.
The postwar presidential election results least well accounted for by the *Bread and Peace* model are 1996 and 2000. In 1996 the vote received by the incumbent Democrat Clinton was almost 4% higher than expected from political-economic fundamentals, whereas in 2000 the vote for the incumbent Democratic Party candidate Gore was almost 5% lower than expected from fundamentals.
Big Errors in 1996 and 2000

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- One might conjecture that idiosyncratic influence of candidate personalities took especially strong form in those elections – with the ever charming Bill Clinton looking especially attractive when pitted against the darkly foreboding Bob Dole in 1996, and with the unfailingly wooden Al Gore paling by comparison to an affable George Bush in 2000.
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That line of reasoning is of course entirely ad hoc and without scientific merit.
Rising Income Inequality and Aggregate Vote Models

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- Indeed Gerald Kramer – whose ground-breaking 1971 APSR article launched modern macro-quantitative analyses of economics and voting – believes that concentration of increases to income in the very highest income classes during recent decades invalidates macro-quantitative models of income-driven voting. (Reported by Rosenthal, APSR 2006)
Time-wise Stability of the Bread and Peace Equation

The data graphed below indicate that the magnitudes of unmeasured factors (idiosyncratic/transitory shocks?) seem to grow somewhat over time implying that Bread and Peace fundamentals are less important during the last couple of decades (last 5 presidential elections).
Bread and Peace Model Residual Errors 1952-2012

Source: www.douglas-hibbs.com, 27 December 2013
Absolute Values of Bread and Peace Model Residual Errors 1952-2012

Regression slope only marginally significant. Source: douglas-hibbs.com, 27 December 2013
Rolling Regression Experiments
Real income growth coefficients from eight-election rolling regressions from the Bread and Peace model

\[ Vote_t = \alpha + \beta_1 \left( \sum_{j=0}^{14} \lambda^j \Delta \ln R_{t-j} \cdot \left( \frac{1}{\sum_{j=0}^{14} \lambda^j} \right) \right) + \beta_2 \text{Fatalities}_t \]

and from Bartels’ Myopic Economic Voting model (Bartels, Princeton UP 2008, Table 4.1)

\[ Vote_t = \alpha + \beta_1 (\Delta R/R)_t + \beta_2 \text{Incumbent Party Tenure}_t \text{ (years in office)} \]

imply some decline in the response of aggregate incumbent vote shares in presidential elections to real income growth rates beginning in 1970s and 1980s:
Time Profile of Real Income Growth Coefficients in Vote Share Models

Source: www.douglas-hibbs.com, 27 December 2013
Below I reproduce some famous ‘Piketty-Saez’ graphs on the market income shares of various quantiles of the size distribution.
Some Headline-High Drama Facts on US Income Distribution Trends: What’s All the Buzz About?

Below I reproduce some famous ‘Piketty-Saez’ graphs on the *market income* shares of various quantiles of the size distribution.

Note that essentially all of the much heralded growth in US inequality, which begins in the late 1970s/early 1980s, occurs at the higher percentiles of the size distribution.
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Consider first the shares going to the top 10% income class:
Top 10% Pre-tax Income Share in the US, 1917-2011

Source: Piketty and Saez, 2003 updated to 2011. Series based on pre-tax cash market income including realized capital gains and excluding government transfers.
Decomposition of the top 10% shows that most of action in US market income distribution trends occurs within the top 1% of the size distribution:
Decomposing Top 10% into 3 Groups, 1913-2011

Source: Piketty and Saez, 2003 updated to 2011. Series based on pre-tax cash market income including realized capital gains and excluding government transfers.
And about half of the growing share of the top 1% has been captured by the top 0.1%, that is, the top 10% of the top 1%, and maybe even in yet higher reaches of the distribution (about which we cannot speak very authoritatively because of weakness in the data):
Top 0.1% US Pre-Tax Income Share, 1913-2011

- Top 0.1% income share (incomes above $1.56m in 2011)

Source: Piketty and Saez, 2003 updated to 2011. Series based on pre-tax cash market income including or excluding realized capital gains, and always excluding government transfers.
In the Piketty-Saez graphs above note the sharp declines in the income shares going to the top 1 percenters, and especially the top 0.1 percenters, following the “dot com” market crash in the spring of 2000, and again after the real estate bubble market meltdown in the autumn of 2007. The latter decline prompted Robert Frank’s catchy-titled 2011 book *The ‘High-Beta’ Rich*. 
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The reason is that a lot of the income of the very highest income groups is from business profits, dividends and capital gains, rather than from employee wages and salaries:
Source: Piketty and Saez, 2003 updated to 2011. Series based on pre-tax cash market income including or excluding realized capital gains, and always excluding government transfers.
Finally, note that the upward trend in income shares going to the top income classes in the US are mimicked (to lesser degree) in other English-speaking countries:
Top 1% share: English Speaking countries (U-shaped)

- United States
- United Kingdom
- Canada
But the rise in market income inequality in English-speaking countries is perhaps less pronounced in Europe and Japan:
Wealth

- Concentration of wealth is everywhere much greater than concentration of income.
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- World-wide it is estimated the wealthiest 1% of world population holds nearly 50% of world total wealth, and the total wealth of just 85 of the world’s richest people equals that of the poorest 1/2 of world population. (Credit Suisse 2013 and Oxfam, 14 January 2014; however consider the scale of “dead capital” featured in Hernando de Soto’s The Mystery of Capital, Basic Books 2000)

Today the top 1% of the US wealth distribution holds ~35% of total US wealth, whereas the top 1% of the income distribution commands ~20% of total income. Both concentrations are around 10 percentage points higher than in Europe.

The income-wealth copula – the joint distribution – exhibits a moderately strong relation across time and countries, which has become more pronounced in recent decades (Aaberge, Atkinson, Königs, and Lakner, forthcoming).
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If US Incomes Have Become So Concentrated at the Top End of the Distribution, Why Haven’t Macro Economic Voting Models Based on Average Real Income Developments Broken Down Completely?

- The incomes graphed are pre-tax and pre-transfer, and they exclude untaxed fringes and in-kind benefits. As we shall see, “comprehensive” family-size-adjusted incomes (particularly when inclusive of accrued rather than realized capital gains to wealth) do not exhibit the increasing inequality that Gerry Kramer (2006) thought had invalidated macro-quantitative economic voting models.

- The most important “fringe” factor over the past 3 decades are the really big increases to employer supplied health care insurance, which are tax deductible for firms and untaxed implicit income to employees.

- The mildly progressive US tax system makes a significant contribution to post-tax income equality.
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Even more efficacious in leveling market income distribution is the US income support system – social security retirement pensions, medicare, medicaid, nutrition assistance ("food stamps"), disability income, unemployment compensation, housing assistance, and more – some of which were launched, and all of which were strengthened, in the 1960s and 1970s.
Haig-Simons-Hicks income \((Y)\) is the maximum amount that could be consumed \((C)\) in a given time period while keeping net real wealth \((W)\) unchanged:
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The Congressional Budget Office (CBO) has constructed annual series, currently available for annual cross-sections form 1979 to 2010, on “comprehensive” household incomes which are intended to approximate Haig-Simons-Hicks incomes at various fractiles of the size-weighted household distribution.
Two disadvantages of the CBO calibrations are:

(1) $\Delta W$ is measured by (taxable) \textit{realized} capital gains each year, rather than by \textit{accrued} gains which theoretically is the more appropriate concept.

(2) CBO income measurements – based on Census Bureau’s Current Population Survey (CPS) and IRS tax return data – take no account of state and local taxes, which vary by jurisdiction but can run as high as 1/2 the magnitude of federal tax burdens on middle income households.
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On the other hand postwar data on aggregate personal disposable income from the National Income and Product Accounts (NIPA) take no account of capital gains income, and because the data are for geographic aggregates they can only be size-adjusted by population (per capita), as opposed to adjustments based on numbers of individuals in various household consumption units made by the CBO.
What are most directly relevant for macro-quantitative models of aggregate voting outcomes are not trends at the top of the income distribution but trends in the gap between mean and median incomes – a gap that becomes larger the greater is the right-skew of the distribution.
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The next two graphs of CBO size-weighted household comprehensive real incomes show that although gaps between mean and median tend to grow larger after the mid-1990s, the Bread and Peace per capita disposable personal income variable closely tracks median household comprehensive income over the entire 1979-2010 overlapping period.
First look at CBO comprehensive incomes, currently available for the 1979-2010 period, in perspective of the full postwar range of per capita disposable personal income (the Bread and Peace model’s income variable):
Real Mean and Median Comprehensive Household Incomes and Per capita Disposable Personal Income, 1949/79 - 2010

Incomes in 2010 dollars. Household incomes are equivalized by sq. root of household size and include realized rather than accrued capital gains. Source: www.douglas-hibbs.com, 27 December 2013
Now let’s take a close-up view of the overlapping 1979-2010 period alone.
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Note the ‘high-beta’ surges and declines of mean comprehensive incomes during the dot com and real estate bubble cycles beginning in early 2000 and early 2008, respectively.
Incomes in 2010 dollars. Household incomes are equivalized by sq. root of household size and include realized rather than accrued capital gains. Source: www.douglas-hibbs.com, 27 December 2013
Two conclusions from the previous graph:

- Developments in comprehensive/disposable incomes are clearly superior to developments in pre-tax and transfer market incomes for models of economy-influenced voting because the former embody the effects of government policy.
- Macro-quantitative models of aggregate voting outcomes are not undermined decisively by the disproportionate gains to market incomes enjoyed by the very highest fractiles of the distribution.
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A weakness of the CBO comprehensive income calculations is the use of realized capital gains as opposed to accrued capital gains – the former being used only because the data on capital asset sales are more readily available from federal tax records.

Hence in principle a much better measure of the $\Delta W$ factor in comprehensive/Haig-Simons-Hicks income are changes in the market values of capital assets in each evaluation period (typically yearly), not the values realized by (taxable) asset sales in any period.
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Armour, Larrimore and Burkhauser (NBER W.19110 June 2013; AER 3:2013) calibrated such accrued changes (along with other enhancements to the CBO measurement procedures) and the results were quite startling, prompting a fire storm of controversy about the validity of their various imputation procedures from which the dust has yet to settle.
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Contrary to all the hullabaloo about growing inequality in America and the solidification of a “New Gilded Age” rivaling the 1920s, Armour et al.’s computations undertaken over the period 1989-2007 imply an inverse relation between income quintile and changes in quintile income shares:
<table>
<thead>
<tr>
<th></th>
<th>Tax unit unadjusted cash market income</th>
<th>Household size-adjusted pretax, post-transfer cash income</th>
<th>Household size-adjusted posttax, posttransfer income plus in-kind income</th>
<th>Column (3) plus realized taxable capital gains</th>
<th>Column (3) plus accrued capital gains, excluding housing</th>
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</thead>
<tbody>
<tr>
<td><strong>Panel A. Quintile income growth 1979–2007</strong></td>
<td></td>
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<tr>
<td>Bottom quintile</td>
<td>−33.0</td>
<td>9.9</td>
<td>31.8</td>
<td>31.1</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>0.7</td>
<td>15.6</td>
<td>31.3</td>
<td>32.0</td>
<td>−</td>
<td>−</td>
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<tr>
<td>Middle quintile</td>
<td>2.2</td>
<td>22.8</td>
<td>34.4</td>
<td>36.7</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td>4th quintile</td>
<td>12.3</td>
<td>29.2</td>
<td>38.8</td>
<td>42.7</td>
<td>−</td>
<td>−</td>
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<tr>
<td>Top quintile</td>
<td>32.7</td>
<td>42.0</td>
<td>54.0</td>
<td>83.1</td>
<td>−</td>
<td>−</td>
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<tr>
<td>Top 5 percent</td>
<td>37.9</td>
<td>48.7</td>
<td>68.9</td>
<td>136.7</td>
<td>−</td>
<td>−</td>
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<tr>
<td><strong>Panel B. Quintile income growth 1989–2007</strong></td>
<td></td>
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</tr>
<tr>
<td>Bottom quintile</td>
<td>−32.9</td>
<td>9.9</td>
<td>26.4</td>
<td>28.0</td>
<td>32.2</td>
<td>14.6</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>0.8</td>
<td>10.8</td>
<td>22.7</td>
<td>24.0</td>
<td>25.0</td>
<td>9.9</td>
</tr>
<tr>
<td>Middle quintile</td>
<td>2.3</td>
<td>12.6</td>
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<td>20.2</td>
<td>7.9</td>
</tr>
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<td>8.0</td>
<td>14.4</td>
<td>20.0</td>
<td>23.5</td>
<td>18.7</td>
<td>7.3</td>
</tr>
<tr>
<td>Top quintile</td>
<td>12.9</td>
<td>15.1</td>
<td>19.0</td>
<td>37.5</td>
<td>12.8</td>
<td>−1.6</td>
</tr>
<tr>
<td>Top 5 percent</td>
<td>9.9</td>
<td>12.7</td>
<td>16.8</td>
<td>52.2</td>
<td>9.3</td>
<td>−1.4</td>
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</tbody>
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**Notes:** Author calculations based on March CPS data merged with SOI tax return data, Survey of Consumer Finance data, Medical Expenditure Panel Survey data, and NBER TaxSim results. Accrued capital gains are unavailable prior to 1989 due to availability of Survey of Consumer Finance data.
Assortative Mating

- Building on earlier research by Cancian and Reed (Rev. Econ. & Stat. 1998) and Schwartz (Amer. J. Soc. 2010), Greenwood, Guner, Kocharkov, and Santos (2014 NBER W19829) find that the rise of assortative mating has had major impact on the rise of household labor income inequality. In fact had couples been randomly matched over 1960-2005 the household income Gini index would have exhibited basically no change at all, as opposed to the rise from around .34 to .43 observed in Census survey data.

- The rise of female entry to high-pay professional employment is a major underlying force in this striking finding.

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What Implications Have the Foregoing for Voters’ Rational Assessment of Government Culpability for Distributional Trends?