# PUBLIC DEBT AND INEQUALITY

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# Presentation Outline

Outline

- ☐ The role of public debt
  - ☐ Motivations, effects and trade offs of debt financing
- ☐ The effects of inequality on debt accumulation
- ☐ The impact of debt on income distribution
  - ☐ Debt financing as a burden on future generations
  - ☐ Debt induced changes in capital and labor income
  - ☐ Debt crises, fiscal adjustment and the distribution of taxation

# The role of Public Debt

Debt is a crucial instrument for <u>development</u> and <u>fiscal stabilization</u> policies.

- ☐ It can be used as an alternative to taxation to finance:
  - ☐ Military spending during wars
  - ☐ Investment in physical capital (infrastructures), in human capital (education) and in research and development
  - ☐ Fiscal stimulus: spending and tax cuts in recessions
  - ☐ Social security
- ☐ It allows to postpone taxes and to spread their burden over many years and generations.

# Motivations for Debt Financing

Debt financing is used instead of taxation because of

- **Output stabilization:** Debt allows a countercyclical fiscal policy; e.g. lower taxes in recessions.

- **Intergenerational distribution**: For intergenerational equity it is reasonable to make future generations contribute to the cost of wars, infrastructures, education.

- **Political opportunistic behavior:** Shifting taxation to future generations brings electoral benefits because future generations do not vote. Debt also allows to avoid distributional conflicts.

# Public Debt in Wars and Recessions
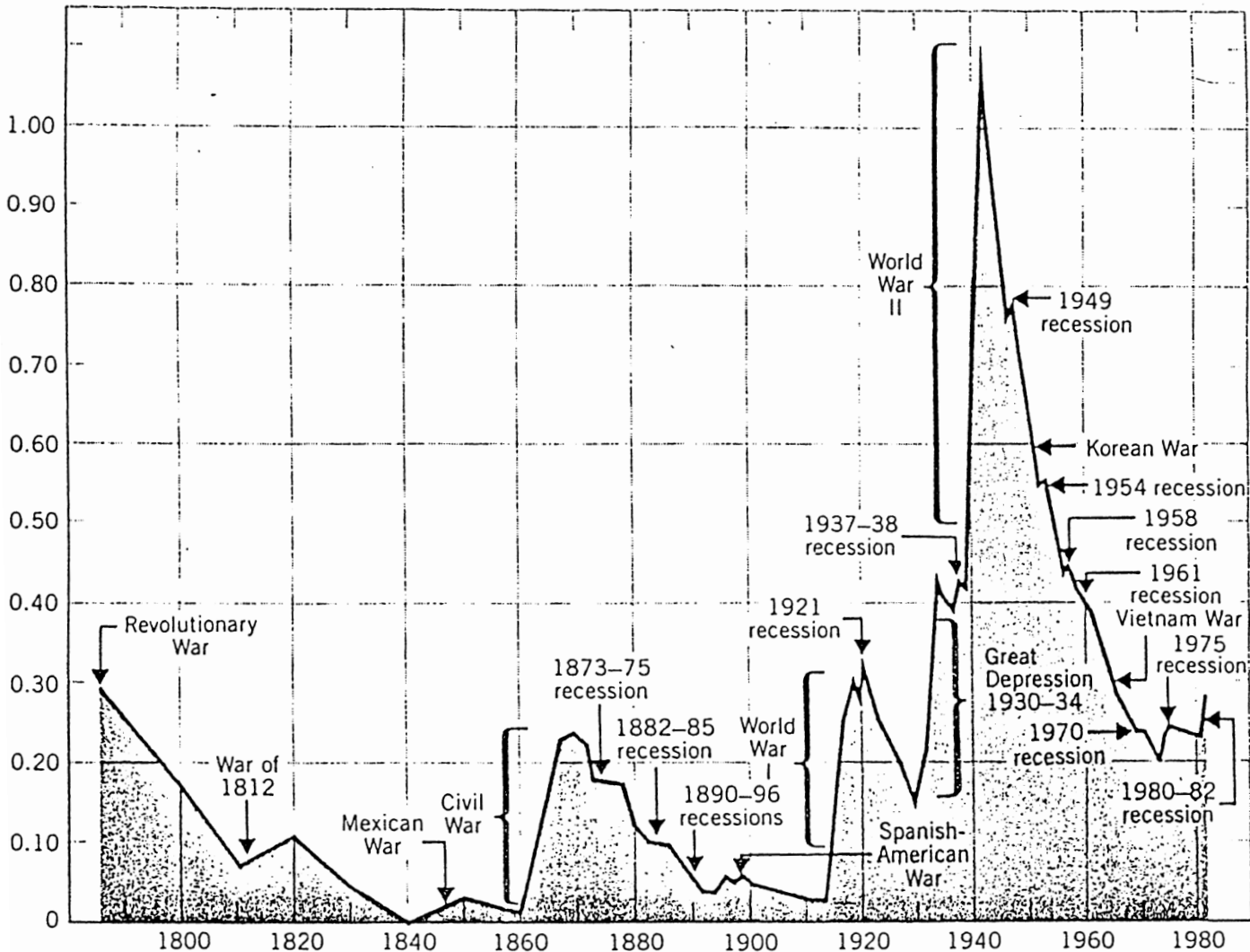## British Public Debt (ratio to GDP)
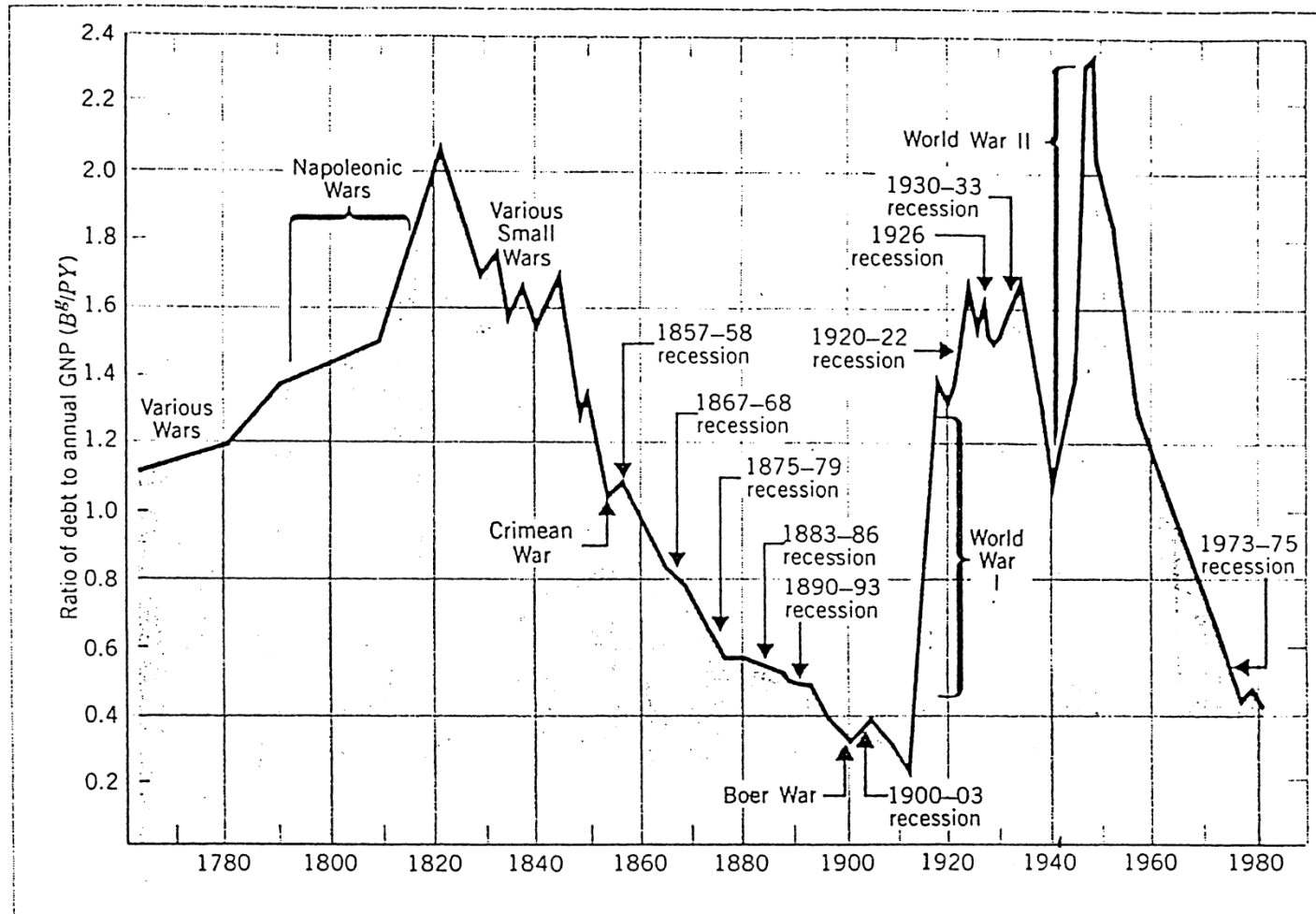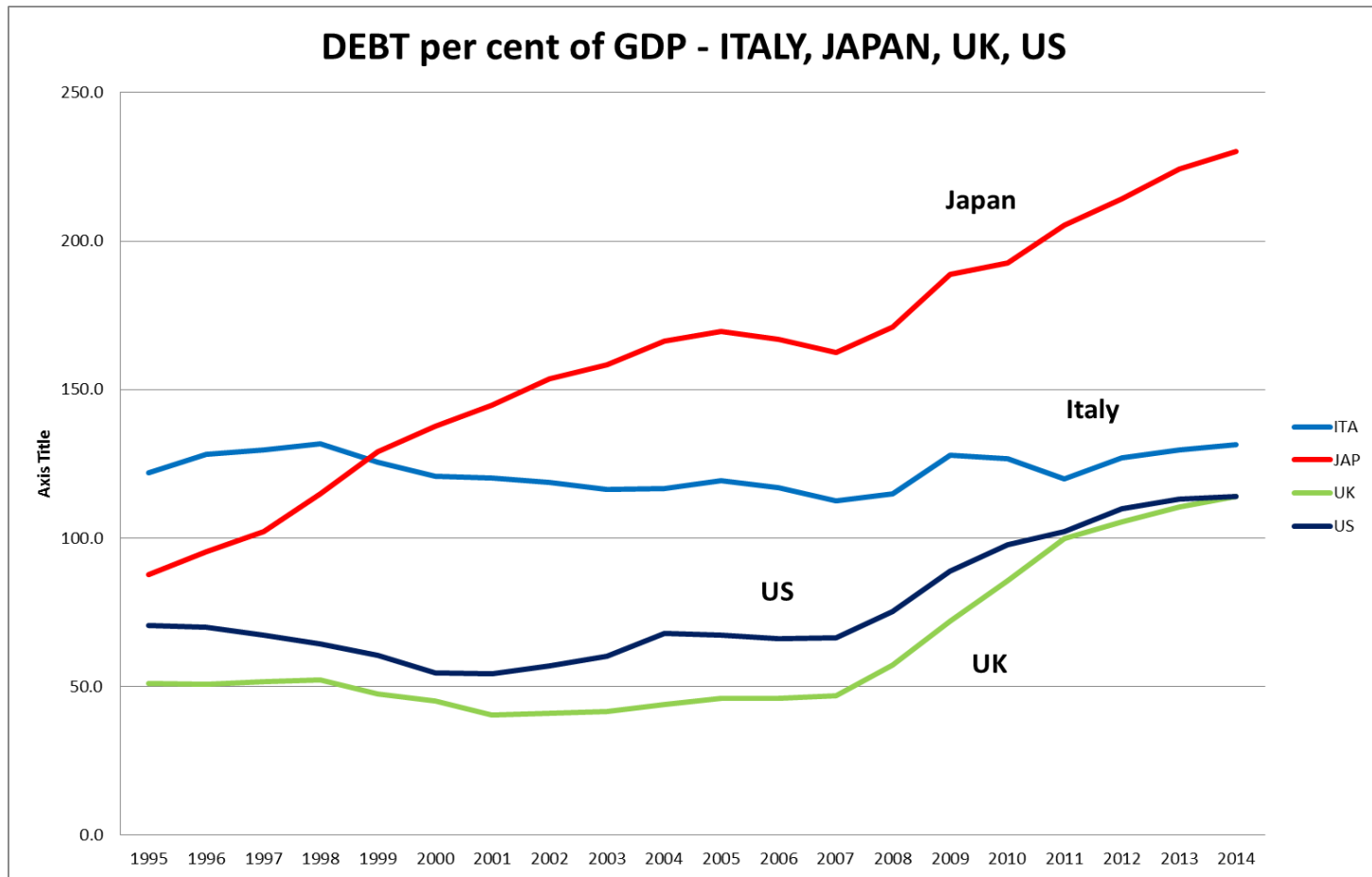
# Public Debt in Wars and Recessions
## US Public Debt (ratio to GDP)

# Public debt in times of peace and crisis

# The Effects of Public Debt
# The Traditional View

Distributional Trade Off:

- Debt allows to spread the burden of financing wars and development over many generations

BUT

- Debt reduces capital accumulation and future income; it is a **burden on future generations**

Stabilization Trade Off:

- Debt financing stimulates the economy, counters recessions and restores stability/employment which **benefits the poor**

BUT

- A high debt may lead to a crisis which **harms the poor**

# The Irrelevance of Public Debt
# The Ricardian Equivalence View

Barro (1974):

☐ Debt financing is irrelevant. For any given path of government consumption, the way it is financed, by public debt or taxes, does not matter. Public debt only affects the intertemporal distribution of taxation.

  ☐ From the government IBC, debt financing means lower taxes in exchange for a PV equivalent increase in future taxes. Then, people will save if they care about their descendants who have to pay higher future taxes.

# The effect of inequality on debt accumulation
## The political economy literature

- Cukierman and Meltzer (1989): The greater the share of the wealthy and the poor (the smaller the middle class) the greater the majority in favor of debt financing.

- Larch (2012): Inequality may give rise to distributional/social conflicts and the costs to solve them can be shifted to future generations.

- Alesina and Drazen (1991), Hsieh (1997) "*War of Attrition*": Conflicts over the distribution of fiscal adjustment delay the necessary reforms and lead to higher debt.

- Tabellini (1991): Taxes/costs can be transferred to future generations who do not vote even in the absence of inequality.

# The effect of inequality on debt accumulation

- Inequality may increase deficits because of political pressure or social preferences for redistribution in democratic societies;
- Inequality may increase deficits through the costs of social conflicts and/or political instability
- Distributional conflicts may delay fiscal reforms because they heighten the "*war of attrition*"
- Inequality may give rise to redistribution but the latter could be achieved through a balanced budget and no debt
  - However, redistributive spending may lower investment and growth and lead to a higher debt to GDP ratio

**Income inequality may affect spending, taxes and thus debt accumulation but the channel is unclear; Empirical issue!**

# Empirical Evidence

Little empirical work on the effect of income inequality and distributional conflicts on the performance of fiscal policy.

Larch, M. (2012) considers:

- 35 high and middle-income countries over 1960–2008 and 5 data sets on income distribution (GINI coefficients)

- Positive but not significant direct effect of income inequality (GINI) on budget deficits, BUT:

- Strong evidence that inequality has an impact when interacted with *political instability* and *government ideology* (right-left).

# Empirical Evidence

- Income inequality leads to higher deficits if paired with **political protests,** as measured by the number of anti-government demonstrations.

- The preference for more fiscal discipline among right-wing governments weakens as the inequality of income increases; inequality gives rise to **political pressure** favoring deficit spending.

- Inequality tends to dampen the positive effect of economic growth on budget balance, perhaps because demand for redistribution cannot be resisted in good times.

# Debt financing, inter-generational distribution and inequality

- ☐ Debt financing is a transfer from the young to the old; from the future to the current generation.
    - ☐ Demographics can be a determinant of debt.
- ☐ Absent altruistically motivated transfers between generations, debt financing reduces capital accumulation and is a burden on future generations.
- ☐ **Debt financing generally implies a redistribution between generations which may reduce or increase inequality.**

# The effect of debt on income inequality

- Diamond (1967): A high steady-state debt reduces welfare if the economy is dynamically efficient, no intergenerational transfers…

- Cukierman and Meltzer (1989): debt may increase inequality if people are heterogeneous in their asset holdings and source of income (capital vs. labour income) because higher debt raises the return on capital and lowers wages (if labor and capital are complements)

- Bohn (1998): debt sustainability requires a primary surplus increasing with debt. This may reduce the policy space for redistributive fiscal policy and increase inequality

# Debt Crises, Fiscal adjustment and its Distribution

Caselli (1997):  The probability of a confidence crisis and a default on debt depends on:

□ The distribution of taxation

□ The type of government

<u>With a welfare maximizing government</u>:

□ The probability of a confidence crisis increases with inequalities in the distribution of taxes across taxpayers and tax-bases (arising e.g. from tax evasion) since the burden of taxation can't be spread evenly across people

□ **Unequal distribution of taxes makes a crisis more likely**

# Debt Crises, Fiscal Adjustment and Inequality

<u>With a government representing specific interests:</u>

- The probability of a crisis is lower the greater the degree of identification of a government with a specific constituency because the cost of adjustment is imposed on the groups which are not represented by the government.

- Coalition governments are more exposed to confidence crises because redistributive taxation is blocked.

- Partisan governments better withstand crises but **Fiscal adjustment *may* imply more inequality.**

# Thank You!

# Diamond (1965) OLG model

Overview of the model:

- People have finite lifes: live for 2 periods (Young: Y, and Old: O);

- They work, consume, pay taxes and save when Young;

- They retire, dissave and consume when Old, and do not leave bequests;

- Price taking firms with Cobb-Douglas F(K,L), renting capital from Old and labour from Young households to produce output;

- The labor force grows at constant rate n>0;

- Logarithmic utility preferences imply constant saving rate.

# Public debt

Suppose debt was issued to finance temporary spending or transfer and is then kept constant at the level $b$.

At the end of each period, the debt, $b$, is rolled over through the savings of the young generation, and interest payments are financed by levying taxes on the young generation:

$$\tau_t = (r_t - n)b$$

so that individual savings are equal to

$$s_t = \gamma[w_t - (r_t - n)b]$$

Debt and capital are perfect substitutes; have the same return.

# Capital Market Equilibrium

Demand of capital: $r_{t+1} = f'(k_{t+1})$
Supply of capital $=$ saving $= s_t L_t$
Capital market equilibrium

$$K_{t+1} + B_{t+1} = s_t L_t$$

or $k_{t+1} = \dfrac{s_t}{1+n} - b = \dfrac{\gamma}{1+n}[w_t - \tau_t] - b$

Public debt crowds out capital for 2 reasons:

- it competes for saving;
- taxes reduce disposable income.

Debt decresases capital and raises the interest rate.

# Debt Financing: a burden on future generations

Assume $r > n$ and Cobb-Douglas production $Y_t = K_t^\alpha L_t^{1-\alpha}$.
Then taxes and wage are:

$$\tau_t = (r_t - n)b = \alpha k_t^{\alpha-1} b - nb$$

$$w_t = (1 - \alpha)k_t^\alpha$$

Capital market equilibrium gives capital accumulation dynamics

$$k_{t+1} + b = \frac{\gamma}{1 + n}[(1 - \alpha)k_t^\alpha - \alpha b k_t^{\alpha-1} + nb]$$

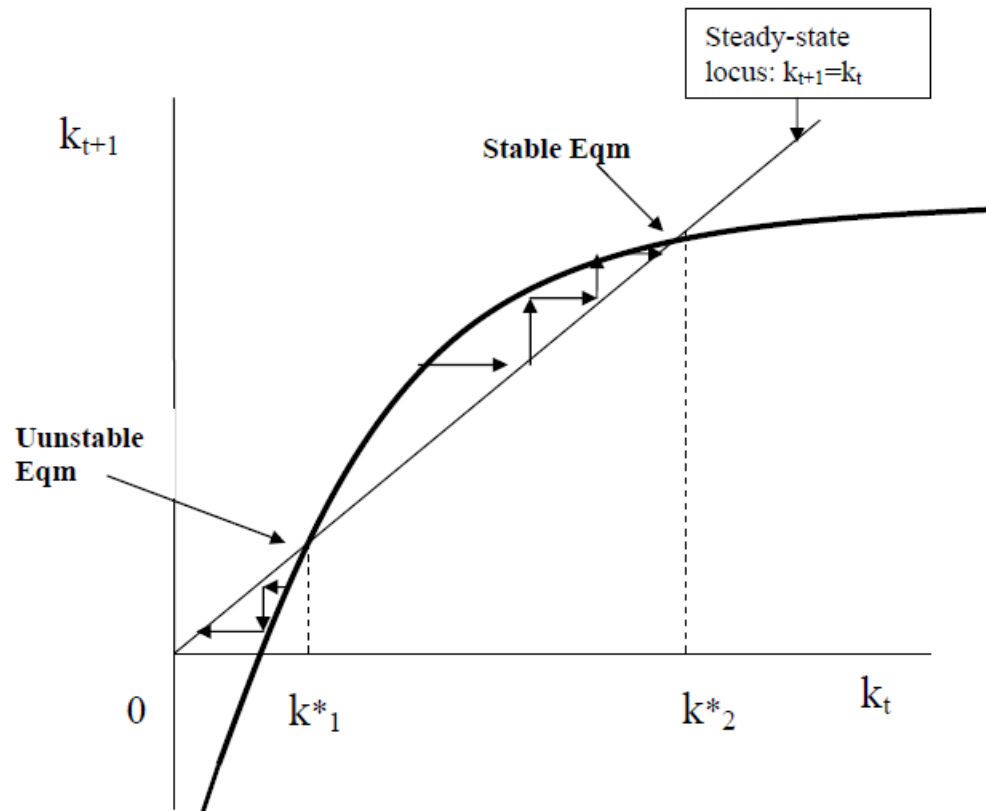$k_{t+1}$ increases with $k_t$, but to low $k_t$ may correspond a lower $k_{t+1}$.
There are 2 steady states: one stable; one unstable.
In **the stable steady state** higher debt reduces s.s. capital.
**The debt issued today is a burden on future generations.**

# Debt lowers steady state capital;
## It shifts down the capital-accumulation equation

# Welfare in Steady State and Redistribution(?)

**If the economy is dynamically efficient a higher debt decreases welfare:**

- Public debt reduces steady state *k*, increases *r* and reduces labor income, *w* (if labor and capital are complements)

- As higher debt implies lower k and higher r, the debt moves the economy away from the golden rule capital, reducing the resources available to society.

- A second negative effect follows from the higher taxes that reduce first-period disposable income.

- The payments on debt adds to second period income but this is offset by lower capital, as the latter is displaced in investors' portfolio for given saving (log utility).

# Thank You!