# Market and political power interactions: A DSGE Model of Southern European Capitalism and the Great Recession

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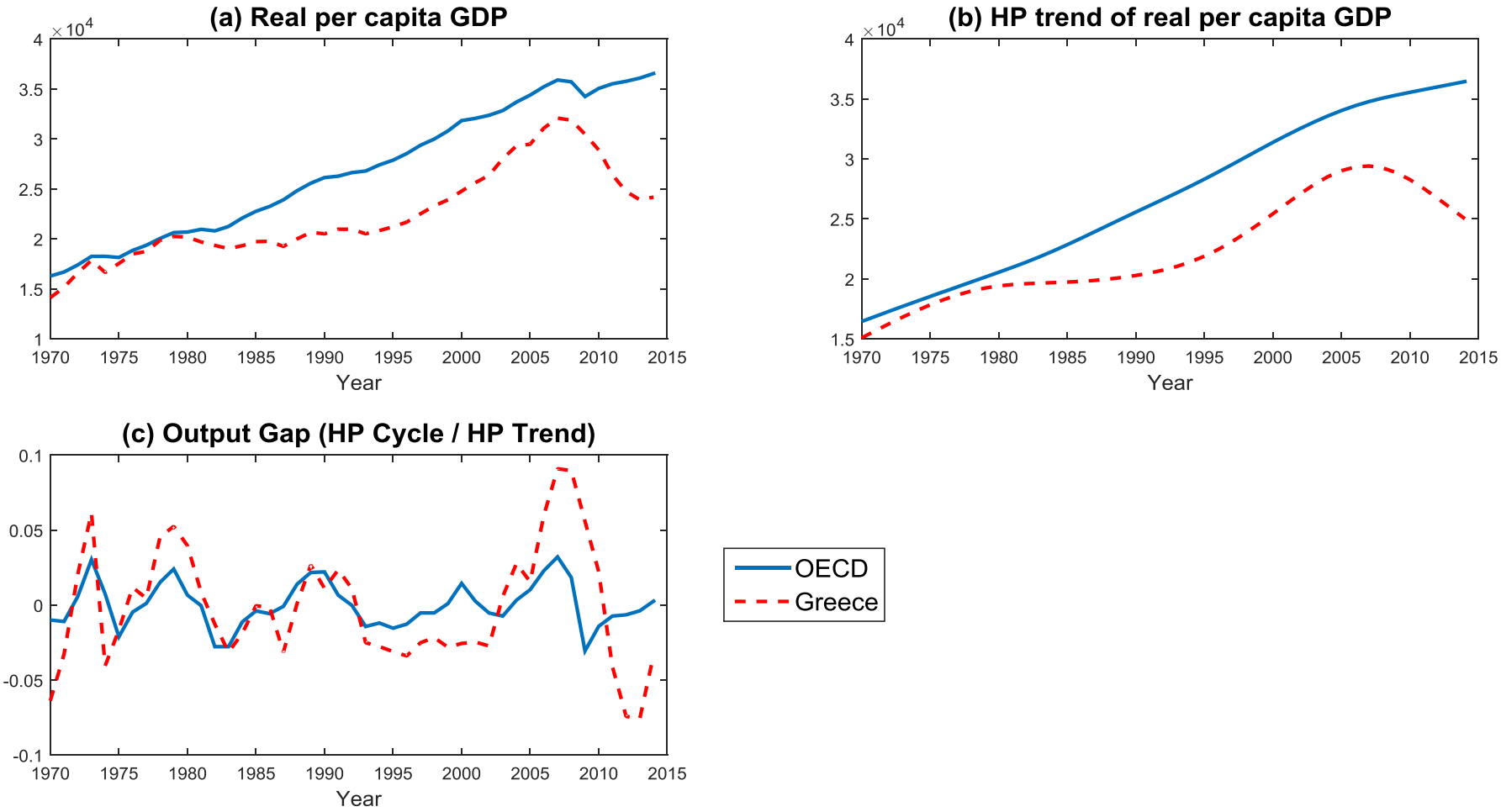
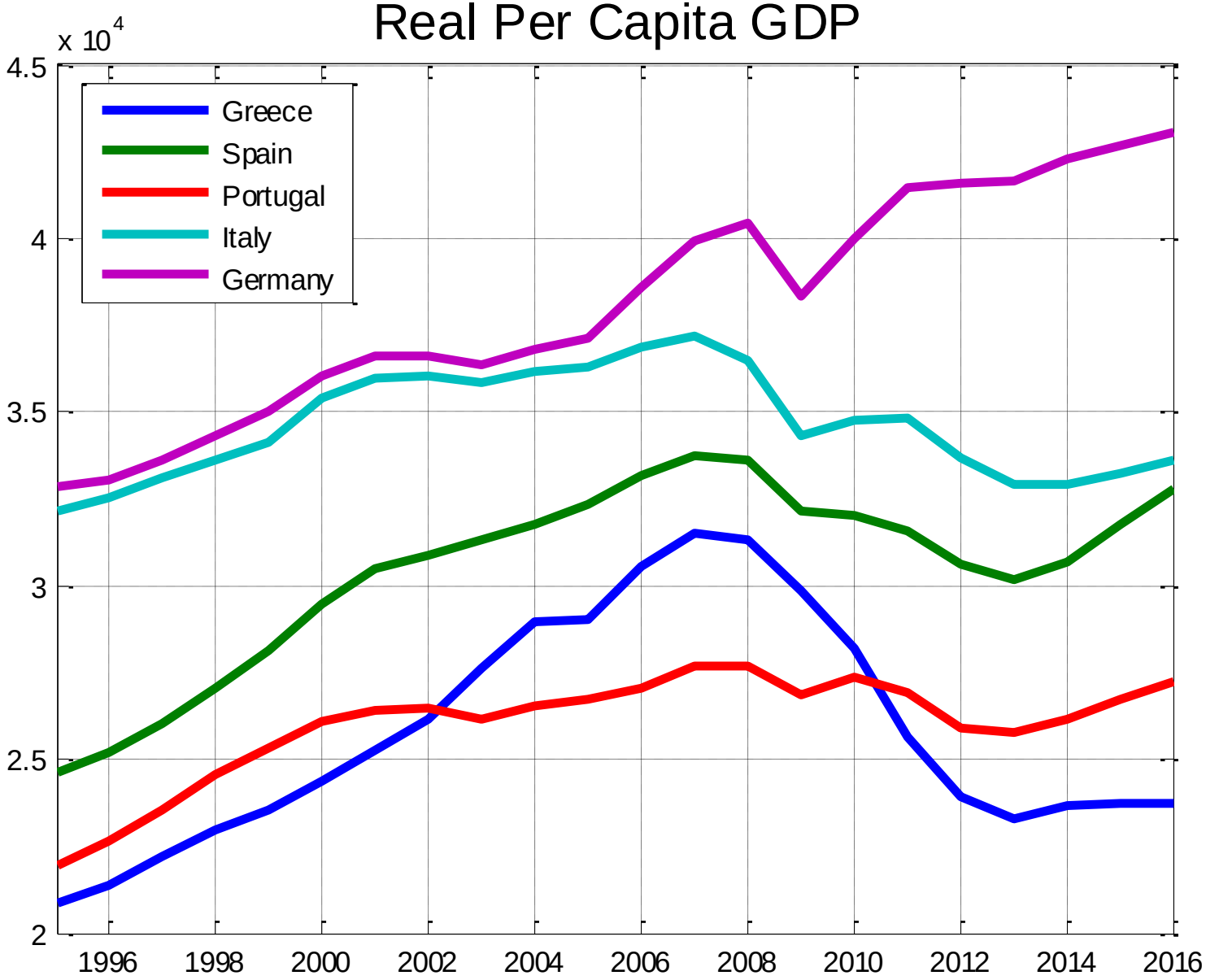
ESRI, Dublin, June 13, 2019

In recent years the growth pattern of Greece as well as most Southern European countries has been disturbed, as those countries are suffering from economic crises that go beyond the usual business cycle.

## Real Per Capita GDP in PPP Values (1970-2014)




Real Per Capita GDP
x 10^4
4.5
4
3.5
3
2.5
2
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
Greece
Spain
Portugal
Italy
Germany

Why are these phenomena happening?

How can they be stopped?

- Seek answers to these questions in the way the Greek politico-economic system is organized and in particular, the way it affects the country's total factor productivity

The **politico-economic system** of Greece is the basic culprit for its weak growth performance over the last thirty five years, as well as its present crisis.

Since the re-establishment of democracy in 1974, Greece developed its own brand of capitalism.

This initially may have helped the country grow, but eventually handicapped and finally jeopardised its ability to grow as well as its ability to deal with the sovereign debt crisis that broke out in 2010.

This happened because the politicoeconomic system that emerged had two remarkable features:

**First**

It allowed for the creation and operation of certain groups of economic agents we shall refer to as **“elites”** or **“insiders”**, enjoying considerable market and/or political power and organized in powerful unions / professional associations

**Second**

Although each group of insiders behaved independently in the market for its labor services (i.e., ignoring the effects of its actions on the other groups of insiders and society as a whole), it, nevertheless, **cooperated** with all other groups of insiders within the dominant political parties and government so as to **influence government decisions**.

We refer to this politicoeconomic system as the “**insiders – outsiders society” - IOS**.

The main consequence of IOS is to lower the growth rate of total factor productivity (TFP) and in extreme cases to lower even the level of TFP.

**The workings of IOS:**

In **noncompetitive** markets, the powerful civil servant and public corporation unions succeed in securing very high wages and incomes for their members.

These wages lead, in turn, to very high prices for all state services.

The latter are both basic inputs in the economy's production process.

Hence, there are important factor allocation distortions that jeopardize total factor productivity and overall competitiveness.

In **competitive**, by their very nature, markets, economic power is expressed through market regulation in such a way as to ensure minimum compensations and preferential tax treatments for the members of important professional associations

Minimum compensations work like the wages in the public sector and ΔΕΚΟ and preferential tax treatments increase disproportionally the tax burden of outsiders, leading likewise to lower total factor productivity and increased production costs throughout the economy.

At the same time, the major political parties and government are influenced by the powerful unions and professional associations.

These elites cooperate in the governance of the country to ensure their interests.

All this results in relatively high taxes and/or budget deficits and government borrowing.

This leads to further distortions in the economy, further reducing total factor productivity, output and growth.

In relatively low stages of development, the advent of IOS may promote growth. However, as the power of insiders grows stronger, the detrimental effect of the above mentioned distortions becomes dominant.

At such a point, the stronger the power of insiders, the lower is the level of TFP.

Such a strategic interdependence does not happen in Anglo-Saxon countries, because there unions / professional associations have little power,

and does not happen in the Scandinavian countries where, although strong, unions / professional associations work together, thereby taking account of possible negative effects of their decisions on the whole of society.

It is then this decrease in total factor productivity stemming from both market and fiscal policy distortions that explains the “low flight” of the Greek economy over the past thirty years, as well as the severity of the recession and the ineffectiveness of policies to deal with the crisis.

**Some Stylized Facts (1970-2010)**

We first need to identify variables that can serve as indicators of the degree a real world politico-economic system behaves like the insiders – outsiders society of the theory.

So, we identify certain public finance features of Greece that make this country stand out among a representative group of OECD countries:

Greece stands out among OECD countries having:

the highest **public sector wage premium** WPR

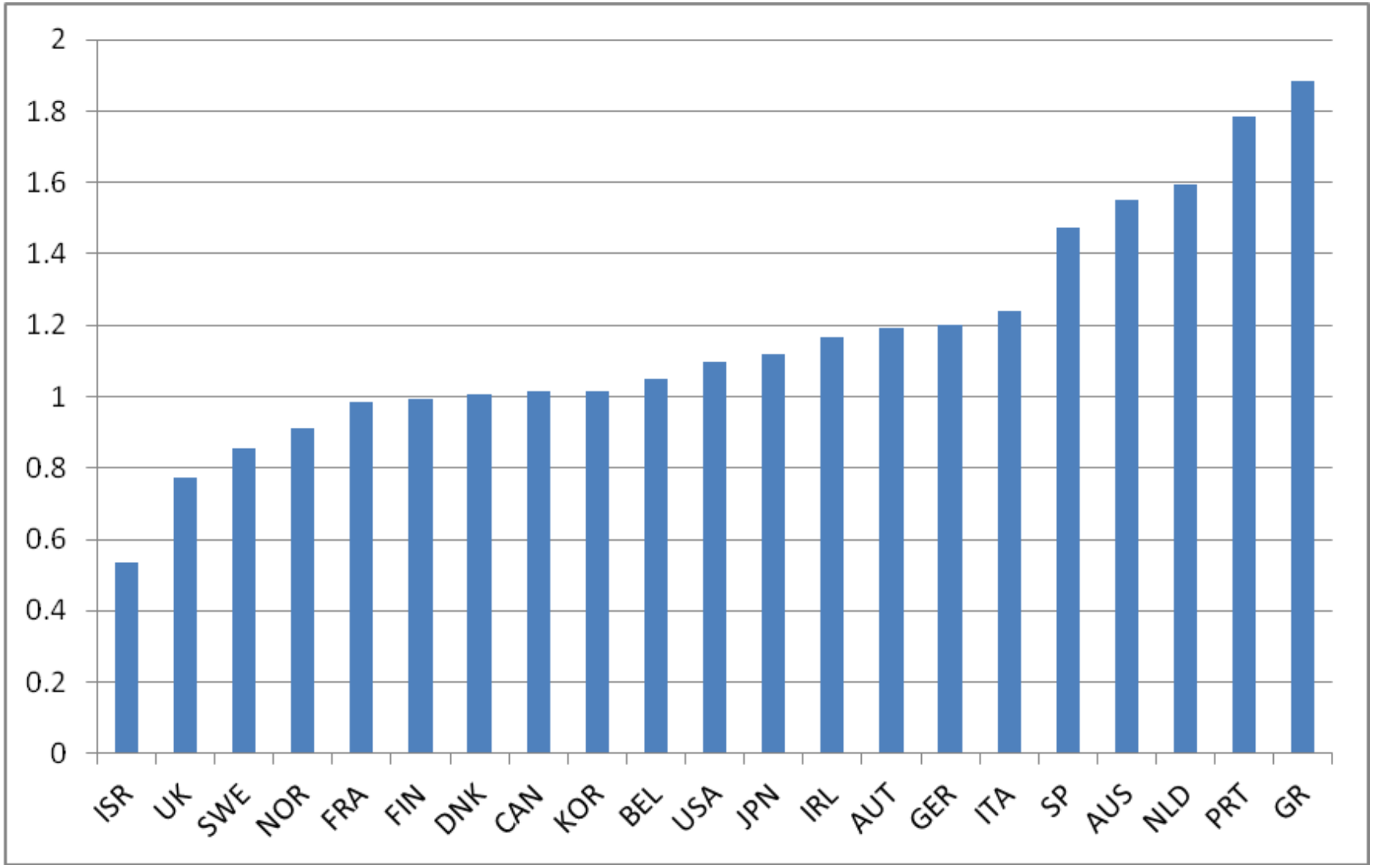
and

the highest **self employed taxation gap** TSL

**Moreover**

- public sector wage premia are quite different across a representative sample of developed economies
- in some of those economies, the public sector wage premium exhibits significant variability over time
- the **South European** countries top the list as the countries with the highest wage premium

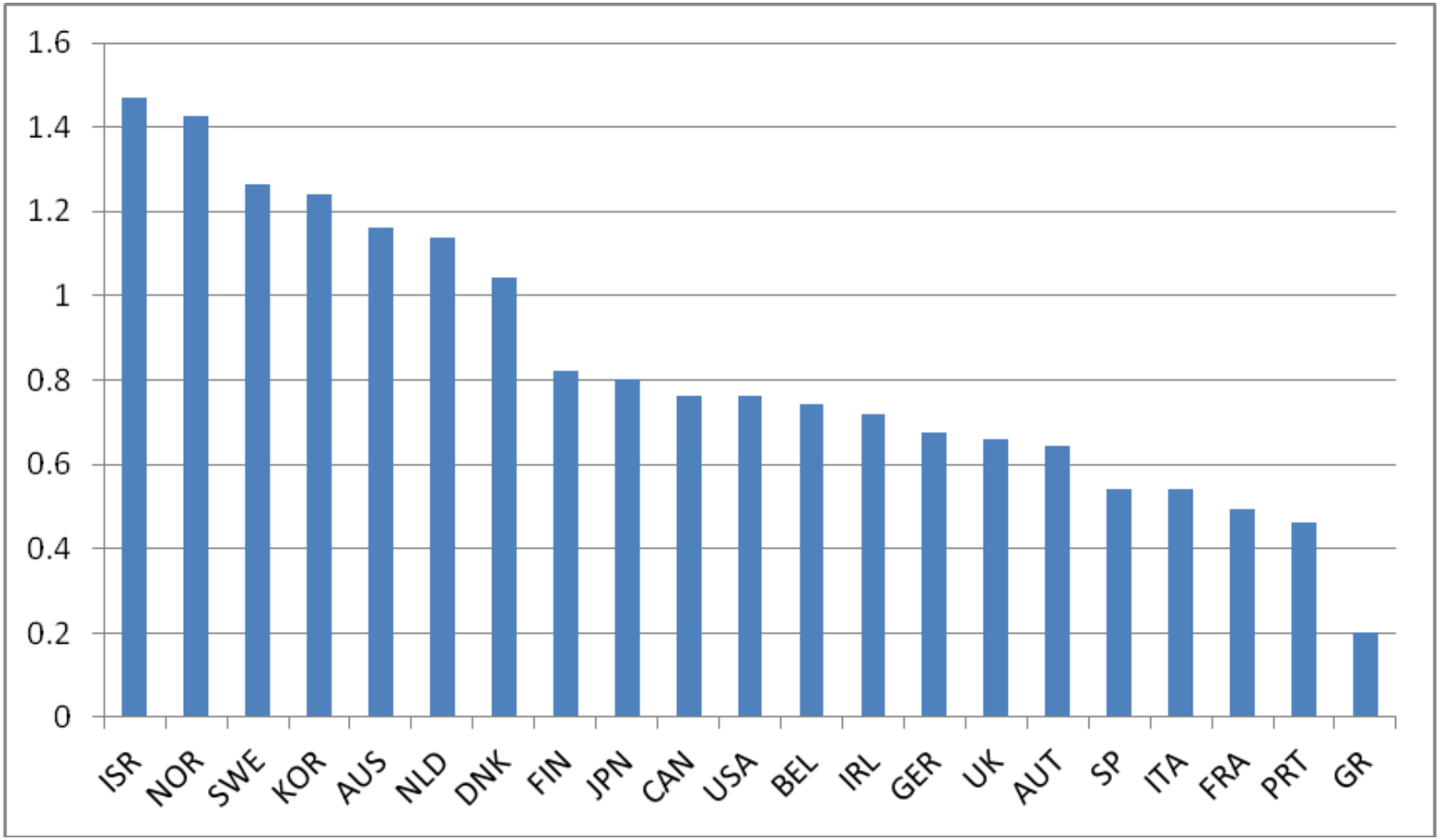
# Public sector wage premium (WPR, Median 1970-2010)



| A Comparison of wages: The Greek Power Company (ΔΕΗ) | | | | |
|---|---|---|---|---|
| | **ΔΕΗ** | **Public Sector** | **Private Sector** | **EON** |
| **2008** | 68176 | 38562 | 23336 | 54844 |
| **2009** | 74155 | 42094 | 23526 | 60718 |

Source: Greek Budget / ΔΕΗ and EON annual financial statements.

# Ratio of the Effective Tax Rate of the Self Employed over the Effective Tax Rate of Employees (TSL, Median 1970-2010)



High values of the public sector wage premium might be related to the influence exerted by public sector employees organized in powerful unions.

High values of the self employed taxation gap might be related the influence exerted by self employed, organized in powerful professional associations.

According to our theory these features are indicative of an “insiders – outsiders society.”

**Moreover, looking at other variables related to**

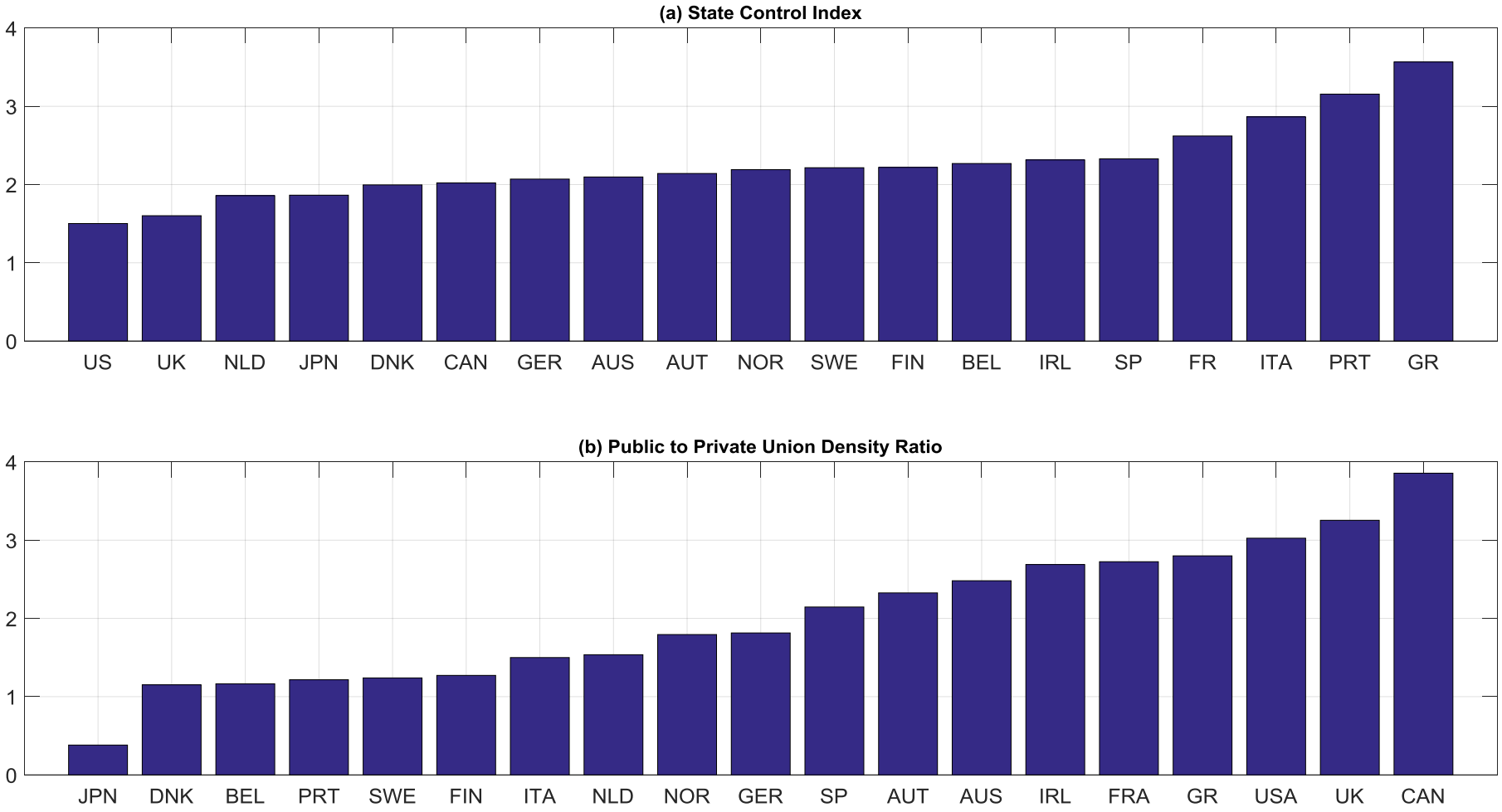
- the involvement of government in the economy and especially in basic sectors,
- union power in these basic sectors,
- strategic behavior of unions whether private or public, especially the degree of independence from- or cooperation with other unions and other government agencies;
- most importantly, the degree to which unions internalize the effects of their decisions on the rest of society,
- product market regulation and state control or the extent of anti-competitive regulations in markets with powerful professional associations,

**Southern European Countries** also

- share similar labor market institutions, trade union fragmentation and, at the same time, lack of co-ordination, as well as product market regulation characteristics

Note also that in what concerns Spain and Portugal, labour market (and other) institutions where developed in the mid seventies after the fall of the respective military regimes

# State Control Index and Union Density in the Public over the Private Sector



In addition,

- there is a strong and statistically significant negative correlation between the public sector wage premium and:
  - ➢ total factor productivity growth
  - ➢ the output per capita growth rate

- This might have ominous implications for countries with relatively high wage premia like the four Southern European countries (Greece, Portugal, Spain and Italy) that top the list

## THE MODEL

We seek to explain the growth disruption of recent years in Southern European countries, like Greece, Italy, Portugal and Spain, while being consistent with the above mentioned stylized facts.

The organization of the economic and political systems of these countries is characterized by large public sectors with basic networks and utility services provided by government and agencies or firms that are heavily regulated and labor therein is organized in powerful labor unions.

Moreover, there are important strategic interactions between these unions and the government.

We develop an otherwise simple neoclassical growth model, which takes into account these particular features shared by Southern European economies.

This model incorporates and extends the idea of the insiders – outsiders labor market (Lindbeck & Snower 1986), with wages differing across identical labor services due to the particular organization of the labor market.

Although insiders and outsiders are identical, the wages of insiders are higher than those of the outsiders, creating, what we call the "**labor misallocation effect**" that lowers output and output growth towards the steady state.

Outsiders work on the production of a final good

The main idea is the modeling of insiders' unions. That is, powerful unions that set wages in the production of services associated with publicly provided intermediate goods, like basic networks and major utilities; and, that cooperate to control / influence the government in deciding for the creation / destruction and maintenance of these publicly provided intermediate goods.

This seems to be the case in Southern European countries, where political parties and governments have been dominated by union leaders and especially those of the greater public sector.

The model explains the above stylized facts as differences in the efficacy of insiders' unions in establishing a wage premium in the public sector and their ability to influence government in providing a sufficiently high number of intermediate goods.

## Literature

- rent seeking / special interests political economy literature / politico-economic equilibria (Tullock, Acemoglu, et al)
- “common pool” property of public finances whereby there is an inherent bias towards higher government spending (Hallerberg and von Hagen (1999), Hallerberg et al. (2009), Cawson (1986))
- “varieties of capitalism” / “neo-corporatism” literatures of political science (Hall and Soskice (2001), Molina and Rhodes (2007), Schmitter (1977))

## Brief Overview of the Model

- A neoclassical growth model of a closed economy that produces a homogeneous final good, which can either be consumed or saved and invested, by means of physical capital and labor services, as well as, the services of a number of intermediate goods provided by the state.
- Outsiders work on the production of a final good, while insiders work on the production of intermediate goods, produced by monopolistic firms, owned by Government.
- The wage rate of outsiders is determined competitively.
- Intermediate goods enter the final goods production function through a Dixit-Stiglitz aggregator that incorporates the so called "variety" effect, whereby an increase in the number of intermediate goods increases output. This aggregator allows for intermediate goods to be gross complements, as one should think of the services of various networks, provided by the State (e.g., power, water, phone, roads, rail, harbors, airports, etc.).
- Each intermediate good producer prices its output satisfying a zero profit condition, taking the wage rate offered by the corresponding insiders' union as given. This determines each

intermediate good producer's employment and output. Then, the corresponding wage rate is determined by the respective union, that takes the demand for labor it faces, as given (Monopoly-Union model, McDonald and Solow (1981), Oswald (1983).

- Since there are as many independent unions of insiders as there are intermediate good producers, overall equilibrium in the market for insiders' labor is characterized by a Nash equilibrium among all insiders' unions.
- This modeling choice is, again, consistent with labor market institutions of Southern European countries, where the wage setting process in the public sector is characterized by trade union fragmentation and, at the same time, lack of co-ordination.
- This is quite different from other typically identified country clusters:
  - In Anglo-Saxon countries wage bargaining is thought, in general, to be competitive and labor unions are thought to play a relatively small role in wage setting.
  - In the Nordic countries, labor unions in all sectors are thought to be powerful but cooperative, thereby internalizing the externalities associated with a high wage premium of one industry/sector on the rest.

## The model in detail

### Households

This economy consists of a large number of identical households.

Each household has available a fixed amount of labor time, that can be allocated to the production of the final good, and the production of services from a continuum of intermediate goods, $\left[0, N_t\right]$, provided by government.

### The time constraint of each household, in every period t

$$h_t^o + \int_0^{N_t} h_t^i(z)\,dz \leq \bar{h}$$

$h_t^i(z)$ is labor time devoted by each household to the production of services from the $z$ intermediate good, in period $t$

**The budget constraint facing each household, in any given period t**

$$c_t + i_t \leq (1-\tau_t)\left[ r_t k_t + w_t^o h_t^o + \int_0^{N_t} w_t^i(z) h_t^i(z) dz \right]$$

$\tau_t$ is the income tax rate in period *t*,

$r_t$ is the rental rate of capital services in period *t*,

$w_t^o$ is the wage rate for labor time devoted to the production of the final good,

$w_t^i(z)$ is the wage rate for labor time devoted to the production of services from the *z* intermediate good in period *t*.

## Final Good Producers

Production in the final good sector takes place in a large number of identical firms by means of physical capital services, labor services, and the services of a number of intermediate goods provided by government.

We assume that there is a continuum of $N_t$ intermediate good products and that $N_t$ is a positive real number.

**The constant returns to scale production technology of the representative firm in the final good sector**

$$Y_t = K_t^a (A_t L_t^0)^b \left[ \int_0^{N_t} x_t(z)^{\zeta} dz \right]^{\frac{1-a-b}{\zeta}}; \quad a,b>0,\ a+b<1 \ \& \ \zeta \in (0,1]$$

$Y_t$ is output supplied in period *t*,

$K_t$ is physical capital services used in period *t*,

$L_t^0$ is labor services used in period *t*,

$A_t$ designates the level of (Harrod–neutral) technology and grows according to: $A_{t+1} = (1+g_A) A_t, \quad g_A \in [0,\infty)$;

$x_t(z)$ is the services from the *z* intermediate good used in period *t*.

The **Dixit-Stiglitz aggregator** exhibits constant elasticity of substitution across intermediate goods, $\sigma = \frac{1}{1-\zeta}$.

$$\left[\int_0^{N_t} x_t(z)^{\zeta}\, dz\right]^{(1/\zeta)}$$

$\zeta \to 1$, $\sigma \to +\infty$ (intermediate goods are perfect substitutes); $\zeta \to -\infty$, $\sigma \to 0$ (perfect complements); For $\zeta < 1-a-b$ (gross complements)

- **Gross complementarity** is more compatible with the idea of public intermediate goods being basic utilities, transportation networks, licenses, etc.
- The restriction $\zeta \in (0,1]$ ensures that **output increases with the number of intermediate goods**, so as to capture the so called **"variety" effect**.
- Obviously, the way the variety effect is modeled, here, gives an incentive for expanding the public sector via the increase of the number of publicly provided intermediate goods, $N_t$ .

**Alternative Production Technology Formulation** (Cole & Ohanian, JPE, 2004)

Here, appropriate stylized facts on the relative real compensation rates and relative net profit margins among industries serve as motivation

$$y_t = A_t\left[\varphi\left(\mathrm{Y}_t^i\right)^{\phi} + (1-\varphi)\left(\mathrm{Y}_t^o\right)^{\phi}\right]^{(1/\phi)}; t \in \mathbb{N}_+, \phi < 1, \varphi \in (0,1)$$

$y_t$: output of representative final good producer in period t

$\mathrm{Y}_t^i$: aggregate input of intermediate goods of **insiders**' sector (**non-competitive**)

$\mathrm{Y}_t^o$: aggregate input of intermediate goods of **outsiders**' sector (**competitive**)

$$\mathrm{Y}_t^i = \left[\int_0^{\chi_t} y_t^i(\varsigma)^{\theta} d\varsigma\right]^{(1/\theta)} \quad \text{and} \quad \mathrm{Y}_t^o = \left[\int_{\chi_t}^{1} y_t^o(\varsigma)^{\theta} d\varsigma\right]^{(1/\theta)} \quad \theta \in (0,1)$$

$\chi_t$: **fraction of insiders' industries in the economy**

$y_t^i(\varsigma)$: input of the intermediate good of the $\varsigma$ industry in insiders' sector

$y_t^o(\varsigma)$: input of the intermediate good of the $\varsigma$ industry in outsiders' sector

## Intermediate Goods Services Producers

Services of intermediate goods are produced using labor only.

In any given period *t*, the representative producer of services from the *z* intermediate good chooses labor input, so as to achieve zero profits taking the production technology constraint, the demand for its services, the number of intermediate good producers and the labor input choices of all other intermediate good producers and wages as given.

**The production technology for the services from the *z* intermediate good**

$$X_t(z) = \Phi(z) A_t L_t^i(z); \quad \Phi(z) \in (0,\infty), \forall z \in [0, N_t) \,\&\, t \in \mathbb{N}_+$$

$X_t(z)$ is output supplied in period *t*

$L_t^i(z)$ is labor services used in period t.

## Insiders' Unions

- We have in mind the Southern European economic model, where public utilities, transportation networks, and other publicly provided services are supplied by a single agency/firm that has a monopoly, but is heavily regulated.
- These agencies/firms end up behaving like unregulated monopolist, due to the behavior of the union that controls their labor input.
- So, labour used in the production of services from each intermediate good $z$ is organized in a (trade) union.
- There is a separate union $z$ for each intermediate good $z$, for all $z$.
- We refer to these unions as "insiders' unions."

**The preferences of the *z* union of insiders** (McDonald and Solow (1981) and Oswald (1982))

$$\sum_{t=0}^{\infty} \beta^t \left[ w_t^i(z) - w_t^0 \right]^{\lambda(z)} L_t^i(z); \qquad \lambda(z) \in (0,1), \forall z \in [0, N_t] \;\&\; t \in \mathbb{N}_+$$

$w_t^0$ is the "alternative wage" for insiders

$\lambda(z)$ stands for a measure of the union's relative bargaining power.

At the beginning of any given period *t*, the *z* union of insiders seeks a wage and employment plan so as to maximize its utility, subject to the aggregate demand for labour in the production of services from the *z* intermediate good (and the institutional constraint $L_t^i(z) > 0$ iff $w_t^i(z) > w_t^o$).

In so doing, the *z* union of insiders takes the aggregate capital, the aggregate employment of outsiders, the wage and employment choices of all other unions of insiders and the number of intermediate good producers, as given.

Although all union members are employed, the union restricts employment, and hence union membership, in order to raise the wage rate enjoyed by its members.

This, of course, implies an important **"misallocation" effect** of the insiders-outsiders society that has profound implications for both output and growth.

**Government**

**The Government's budget constraint, in any given period t**

$$\int_{N_t}^{N_{t+1}} \tilde{\Psi}_t(z)dz + \int_0^{N_t} \hat{\Psi}_t(z)dz = \tau_t \left[ r_t k_t + w_t^0 h_t^0 + \int_0^{N_t} w_t^i(z) h_t^i(z)dz \right]$$

$\tilde{\Psi}_t(z)$ is the cost of setting up (dismantling) new (old) *z*-intermediate good infrastructure in period *t (i.e.* investment cost of new infrastructure)

$\hat{\Psi}_t(z)$ is the cost of administering and maintaining the existing *z*-intermediate good infrastructure in period t (i.e. maintenance cost of existing infrastructure).

## Symmetric Equilibrium

For tractability purposes, we shall characterize the equilibrium in the symmetric case, where there are no differences across intermediate good service producers, the corresponding insiders' unions, and investment in new infrastructure and maintenance of existing infrastructure, fixed functions of output

$$\Phi(z) = \Phi; \qquad \Phi > 0,\ z \in [0, N_t]$$

$$\lambda(z) = \lambda; \qquad \lambda \in (0,1),\ \forall z \in [0, N_t]\ \&\ t \in \mathbb{N}_+$$

$$\tilde{\Psi}_t(z) = \tilde{\psi} y_t; \qquad \tilde{\psi} > 0$$

$$\hat{\Psi}_t(z) = \hat{\psi} y_t; \qquad \hat{\psi} > 0$$

where $\tilde{\psi} > \hat{\psi}$ (it is more expensive to develop than to maintain one unit of public sector infrastructure)

Then, the equilibrium of this economy, where all agents solve their respective problems and all markets clear, is characterized by the following set of equations:

$$h_t^o = \frac{b\nu(N_t)}{b\nu(N_t)+(1-a-b)}\bar{h} \tag{12}$$

$$N_t\, h_t^i = \frac{(1-\alpha-b)}{b\nu(N_t)+(1-\alpha-b)}\bar{h} \tag{13}$$

$$y_t = \xi(N_t)k_t^a \tag{14}$$

$$\frac{c_{t+1}}{c_t} = \left[\beta\left(1+g_A\right)^{-1}\left\{\left(1-\delta\right)+\alpha\left[1-\tilde{\psi}(N_{t+2}-N_{t+1})-\hat{\psi}N_{t+1}\right]\xi(N_{t+1})k_{t+1}^{a-1}\right\}\right]^{\frac{1}{\gamma}} \tag{15}$$

$$\frac{k_{t+1}}{k_t} = \left(1+g_A\right)^{-1}\left\{\left(1-\delta\right)+\left[1-\tilde{\psi}(N_{t+1}-N_t)-\hat{\psi}N_t\right]\xi(N_t)k_t^{a-1}-c_t k_t^{-1}\right\} \tag{16}$$

where

$$\nu(N_t) \equiv \frac{w_t^i}{w_t^0} = \frac{N_t}{[1-\lambda(1-\zeta)]N_t+\lambda(1-\alpha-b-\zeta)} \tag{17}$$

and

$$\xi(N_t) \equiv b^b(1-a-b)^{(1-a-b)}\Phi^{(1-a-b)}\; N_t^{\frac{(1-a-b)(1-\zeta)}{\zeta}}\; \frac{\nu(N_t)^b}{[1-a-b+b\nu(N_t)]^{1-a}} \tag{18}$$

$\xi(N_t)$, is total factor productivity, in period *t*.

$\nu(N_t)$ specifies the public sector wage premium, which is tantamount to the wage premium of insiders over outsiders.

- The wage premium affects the economy's resource allocation through total factor productivity

- $N_t$, affects the economy's resource allocation via after-tax total factor productivity, threefold:

  - First, through the wage premium - the **misallocation effect**,
  - Second through the **variety effect**,
  - Third through taxation - the **political effect**.

## THE WORKINGS OF THE MODEL

***<u>Proposition 1</u> (Properties of Insiders' Wage Premium $\nu(N_t)$)***

*The relative wage premium $\nu(N_t)$ is*

*a)* ***positive and greater than one****,*

*b) strictly increasing and strictly concave in $N_t$*

*c) is greater:*

*(i) the greater the relative bargaining power of unions,*

*(ii) the lower the elasticity of labor demand facing intermediate good service producers,*

*(iii) the greater the degree intermediate goods are gross complements,*

So, the wage premium is a consequence of the organization of the labor market. And, in particular, of the market power enjoyed by insiders' unions

In the presence of a wage premium, the monopolistic unions restrict labor input, so as to receive a higher wage rate. This result relates to what we refer to as the **"labor misallocation" effect**

***<u>Proposition 2</u> (Properties of Total Factor Productivity $\xi(N_t)$):***

$N_t$ affects $\xi(N_t)$ both directly and, indirectly, through the relative wage premium, $\nu(N_t)$

The **direct** effect of $N_t$ on $\xi(N_t)$ is **positive**: "love-for-variety" effect or **"variety" effect**

The **indirect** effect related to the wage premium being greater than one is **negative** and defines the **"labor misallocation effect."**

The overall effect on $\xi(N_t)$ of a change in $N_t$ is not obvious.

Given gross complementarity and unions facing downward sloping labor demand, the "variety" effect dominates over the "labor misallocation" effect.

**Efficiency losses with respect to a "Second Best"**

**Second Best**: There is no insiders-outsiders organization of society, $\nu(N_t)=1$, but there is a "tax distortion" effect

$\pi(N_t)$ is the TFP gap due to the "labor misallocation" effect.

# Growth with a Fixed Number of Publicly Provided Intermediate Goods

$N_t = \bar{N}$

***<u>Proposition 3</u> (Variety and Labor Misallocation Effects vs Tax Distortion Effect):***

In the case of a fixed N, an increase in the number of these goods will have ambiguous effects on steady state output and growth towards this steady state, as these effects will depend on the existing number of publicly provided intermediate goods.

For a relatively low *N*, an increase in this number is associated with the dominance of the "variety" effect over the combination of the "labor misallocation" and "tax distortion" effects.

On the contrary, for a relatively high *N*, an increase in this number is associated with the dominance of the combination of the "labor misallocation" and "tax distortion" effects over the "variety" effect. For, as it can be easily verified, the "variety" effect ("labor misallocation" and "tax distortion" effects) is decreasing (are increasing) with *N*.

- The threshold value of *N:* $\dfrac{(1-a-b)(1-\zeta)}{\hat{\psi}\left[(1-a-b)(1-\zeta)+\zeta\right]}$

# The Politicoeconomic Equilibrium.

## The case of an endogenous income tax rate or an endogenous number of publicly provided intermediate goods decided by government

Government decides on the income tax rate or the number of publicly provided intermediate goods, so as to maximize its objective function, subject to the equilibrium laws of motion of the previous section and the government budget constraint.

## Government's Objective Function

### I. Median Voter Government

The objective function of government is the objective function of the representative household.

## II. **Government of Insiders**

- Motivated by the paradigm of South European countries, where political parties and governments have been dominated by unions and especially those of the greater public sector, we wish to consider a situation where insiders' unions are controlling government.
- Unions have an incentive to cooperate with each other with respect to the income tax rate / the number of publicly provided intermediate goods.
- This is because a higher, say, income tax rate, increases the number of publicly provided intermediate goods and increases the demand for labor facing each union, also due to gross complementarity.
- Hence, all insiders' unions have an incentive to increase this tax rate (financing of the underlying infrastructure).
- Unions' interests are simultaneously to compete for wage premiums and cooperate for the number of publicly provided intermediate goods.

**The objective function of the Government of Insiders is a function of the sum of utilities of all insiders' unions**

## III. A Hybrid Government

A government that seeks to minimize a weighted average of the percentage deviations of:

(a) the welfare of the representative household from the welfare achieved under the solution of the Median Voter; and

(b) the welfare of all insiders' unions from the welfare achieved under the solution of the Government of Insiders

$1-\rho \in (0,1)$ is the relative influence of insiders' unions on government.

***Proposition 4 (Politico-economic equilibrium):***

The steady state number of publicly provided intermediate goods in the Median Voter politico-economic equilibrium, $N^{MV}$, is less than the corresponding number of the Government of Insiders politico-economic equilibrium, $N^{MV}$.

- The ordering between $N^{GI}$ and $N^{MV}$ is a manifestation of the "political effect"
- Recall that the Median Voter solution incorporates the "labor misallocation" effect.
- So, steady state capital per efficient household in the Median Voter solution is already lower than the Second Best (i.e., the no wage premium but with distorting taxation Median Voter politico-economic equilibrium).

An increase in insiders influence over government, $(1-\rho)$, would imply a higher steady state number of publicly provided intermediate goods.

There is no direct answer to the question whether there will be a higher or a lower steady state capital in the Median Voter social planner solution or the Government of Insiders solution.

or

in the Hybrid politicoeconomic equilibrium, how steady state capital will vary with an increase in the influence of insiders over government.

For relatively low numbers of steady state publicly provided intermediate goods, an increase in insiders influence over government, leading to a higher number of those goods in the steady state, may entail higher steady state capital and faster growth (i.e., growth along the convergence to the steady state).

BUT,

For a relatively higher number of steady state publicly provided intermediate goods, a higher number for these goods leads to lower steady state output and growth.

If countries differ with respect to the relative weight of insiders in influencing the government, countries with high $1-\rho$ will eventually have a high number of publicly provided intermediate goods and these countries will be more likely to have a number of publicly provided intermediate goods which is higher than the threshold of Proposition 3.

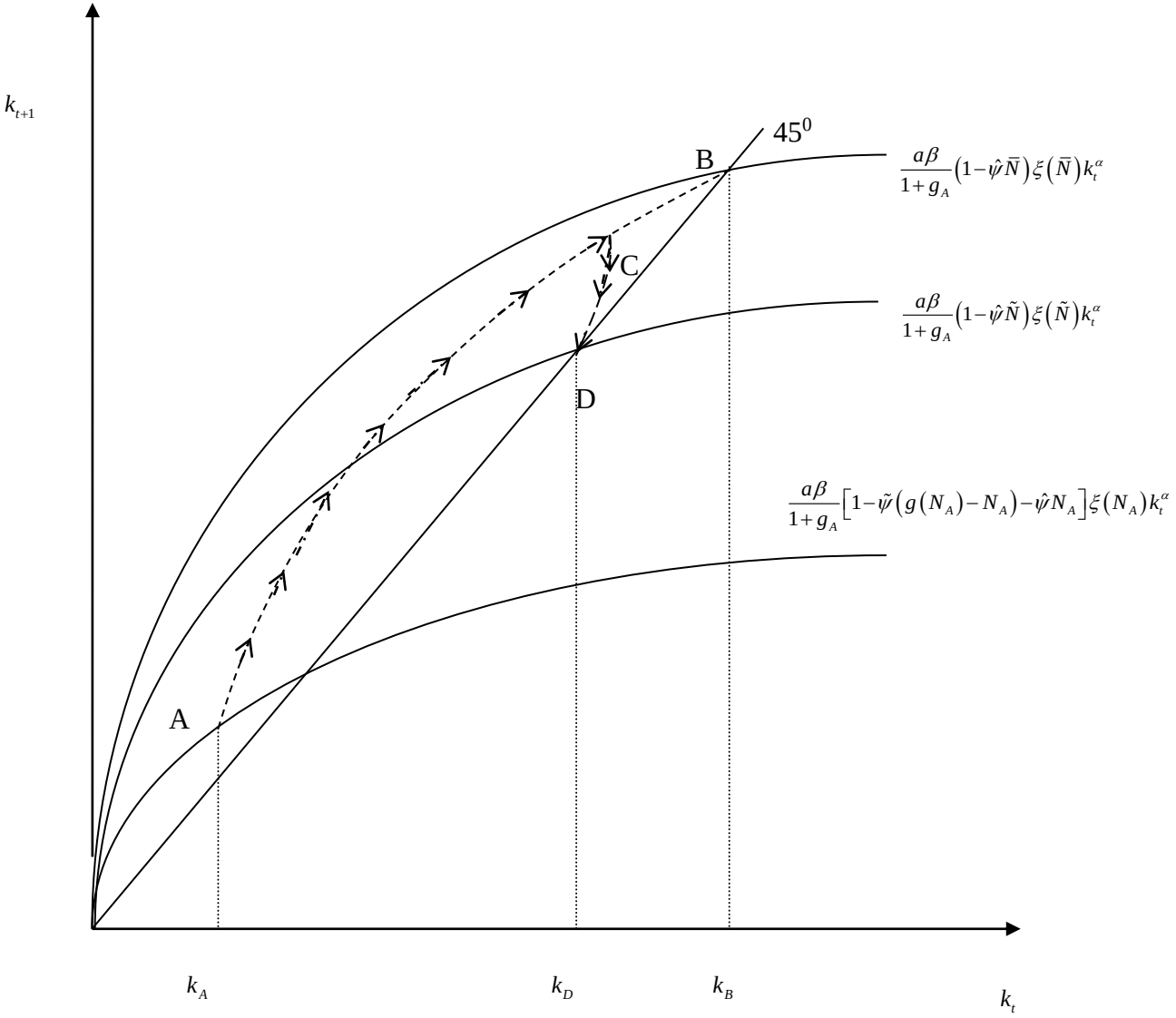
Then these countries will have lower steady state capital and output, than countries with relatively low $1-\rho$

**To summarize**

- an increase in insiders influence over government (i.e., $1-\rho$) will lead to an increase in the steady state number of publicly provided intermediate goods, $N$
- for a relatively low $N$, an increase in this number is associated with the dominance of the "variety" effect over the combination of the "labor misallocation" and the "political effect," while the opposite is true after a certain threshold, $\bar{N}$
- monotonic convergence of $\left\{k_t, N_t\right\}_{t=0}^{\infty}$ towards $\left(k, N\right)$

These results, allow for the possibility of a growth reversal, brought about by an increase in insiders influence over government.

# A Growth Reversal



This growth reversal possibility serves as an explanation of what may have occurred in the Southern European economies.

- In the model's framework, one may think of South European countries, as countries with a low initial level of $N$, but with a progressively higher $1-\rho$, as insiders' influence over government grew stronger.
- Thus, about thirty years ago, the advent of the insiders-outsiders society in Southern European countries, when these countries were at a lower stage of development and, to a varying degree, they were lacking adequate infrastructures, may have helped them develop and grow. Precisely because, it led to the development of that infrastructure, when private provision of this infrastructure was poor or non-existing.
- But, eventually, the insiders-outsiders society may have exceeded its usefulness and insiders' unions enjoyed substantial wage premia, leading to labor misallocation and tax distortion and/or high debt, that caused the growth problems these countries are experiencing at the present.

- **Anglo-Saxon** countries are characterized by very low or non-existent wage premia in the public sector, having **very low** $\lambda$ and **very low** $1-\rho$, so that steady state $N$ is **below** this **threshold**.

- For other countries the model's structure without further adjustments may be altogether **inappropriate**. For example, the **Nordic countries**, where **wage premia** in the public sector are practically **negligible**, have very strong unions in both public and private sectors, but their **unions co-operate** to internalize the cost to the economy associated with a high wage premium in one industry or sector. In our model's jargon this, practically means that **outsiders behave like insiders** and the Government of Insiders behaves like the Median Voter.

That’s it

Thank you all!!!