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Politica climatica ed energetica Considerazioni economiche

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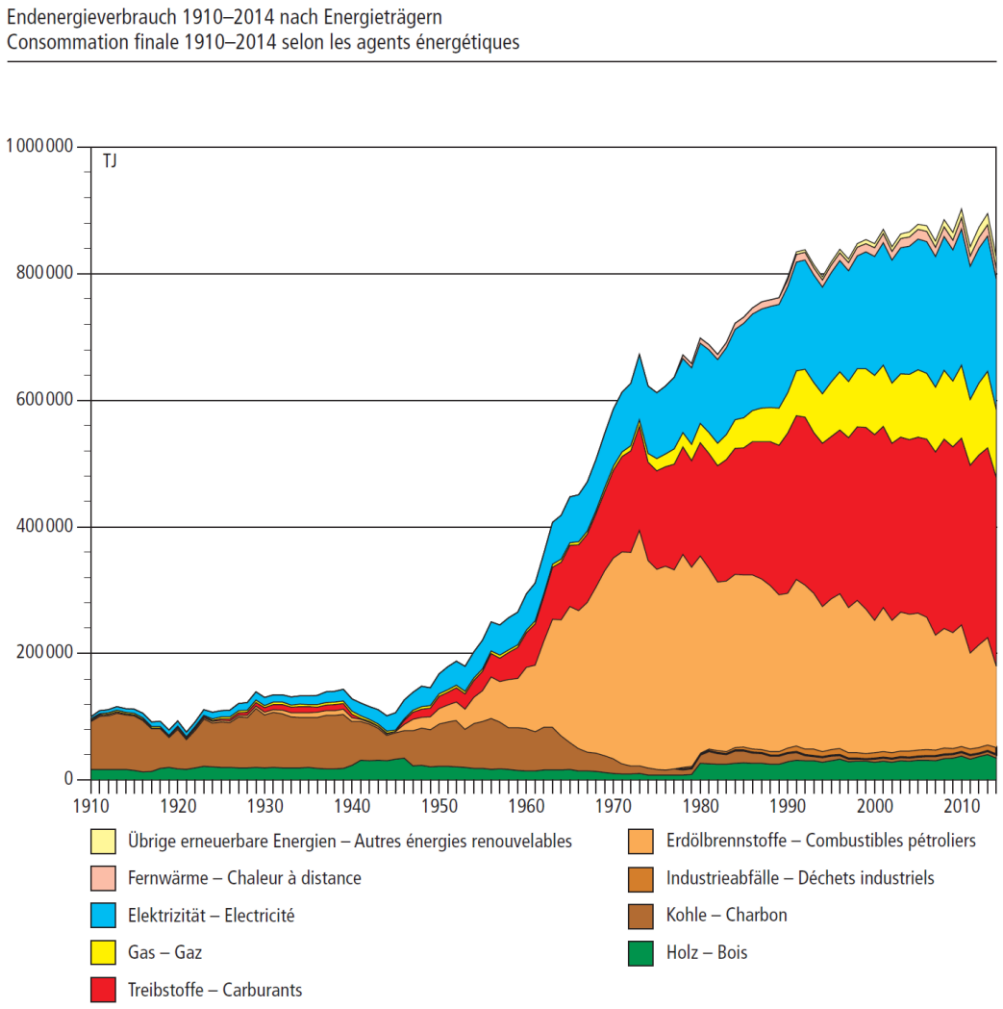
Growing energy consumption



Source: Energy statistics, SFOE 2014.

Outline

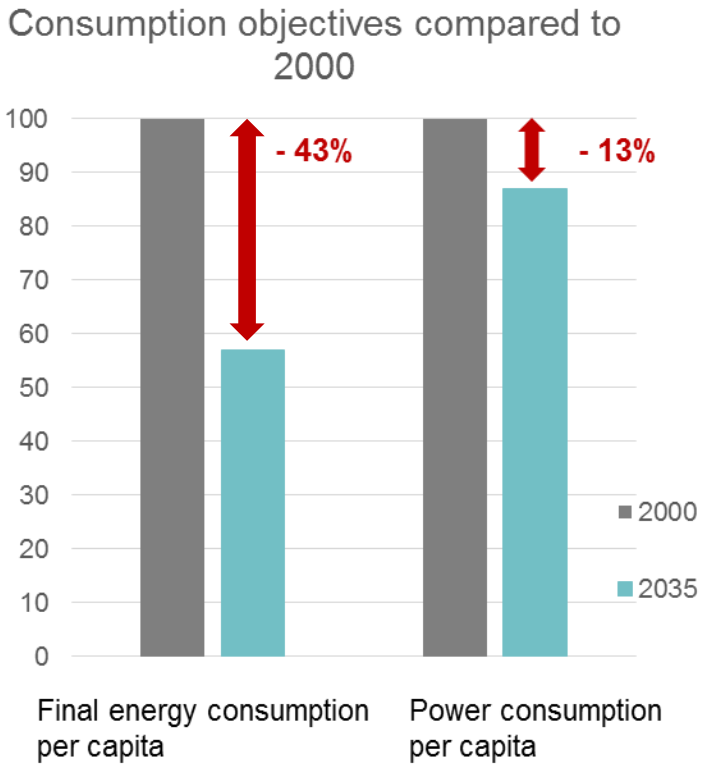
- **Energy and climate objectives of Switzerland**
- **Why do we want to use more incentive taxes in order to achieve energy & climate objectives?**
  - Incentive taxes as economic policy instruments
- **Questions regarding the design of incentive taxes**
- **The political economy of incentive taxes**
  - Subconstitutional political process
  - Constitutional stage
- **Concluding remarks**

I Energy and climate objectives of the Swiss government

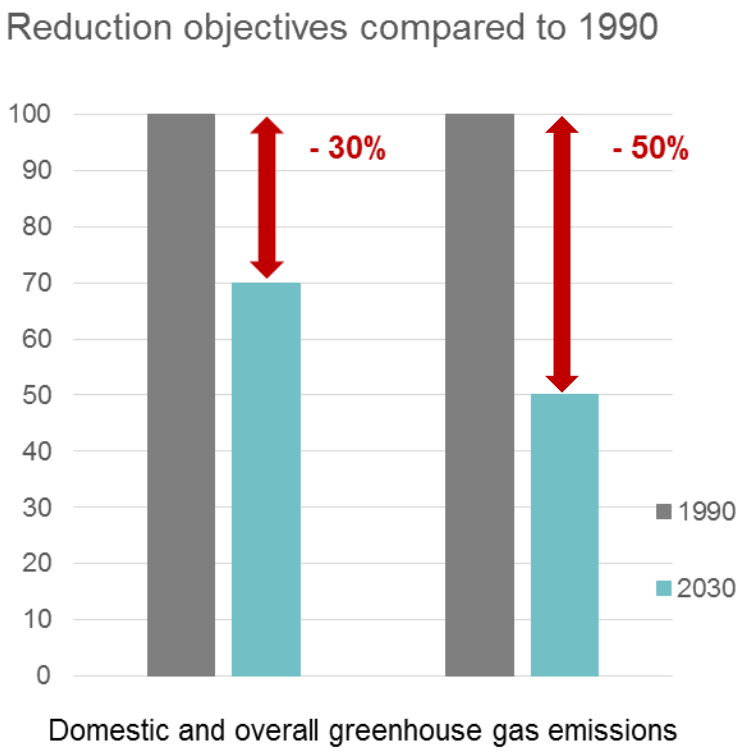
- Withdrawal from the use of nuclear energy on a step-by-step basis
- Reduction of CO2 emissions
- Increasing share of renewable energy

Energy and climate policy objectives

Energy policy - 2035



Climate policy - 2030



Expansion targets in the area of power production from new renewable energies (4 times more until 2035 & expansion of hydropower)

Energy strategy 2050 – two stages

First stage

- The first stage consists in a comprehensive bill – a package of measures to expand the existing instruments to increase energy efficiency and promote the domestic generation of electricity using renewable energy sources.
- Strengthening subsidy measures
  - in the area of buildings
  - the cost-covering remuneration for feed-in to the electricity grid.
- Stricter CO2 emissions regulations for passenger cars & extension of efficiency requirements for electrical appliances.
- In Sept. 2013, the Federal Council submitted an initial package of measures to Parliament.

Second stage

- From 2021 on, the Federal Council wants to ultimately replace the existing subsidy system with an incentive tax mechanism.
- A consultation procedure has been conducted this spring and a dispatch on a constitutional amendment has been submitted to Parliament in October 2015

II Why do we want to use more incentive taxes?

- Producers and consumers of environmental goods do not bear all costs of their actions and generate negative externalities.
- Part of these costs are borne by society as a whole.
  - Overconsumption and pollution
- “Polluter pays” principle: Polluters should be charged the cost of the negative environmental externalities associated with their activities.
  - Producers and consumers would take into account the costs of pollution in their production and consumption choices.
- Market-friendly environmental policy instrument
  - Set correct price signals for optimal allocation of scarce resources by internalizing the externality with an incentive tax which is equal to the marginal external cost (Pigovian tax).

Pigovian approach

Problems

External costs are often unknown or only rough estimates available

- Climate change: costs will occur in the distant future.
- Nuclear power plants: high costs & low probabilities of occurence.

Alternative: Standard-price approach (Baumol & Oates 1988).

- No intention to achieve the welfare optimum, environmental objectives are politically determined and tax rates are set accordingly.
- Information about price and substitution elasticities rather than about external costs are necessary.

However, as marginal abatement cost curve is not exactly known, a step by step pocedure will be applied. Accordingly, the standard itself is the result of the cost-benefit analysis of decision makers.

Incentive taxes as instruments for energy and climate policy

Advantages primarily in the medium to long term

- Change in relative prices leaves households and enterprises free to adapt their energy consumption in a way that will minimize their costs.
- Price incentives encourage efforts to find even better ways to reduce emissions and energy consumption (beyond the regulations set by the authorities).
- Price incentives lead to development of innovative solutions, as investment in energy and emission reducing technologies becomes attractive.
- The state has limited ex-ante knowledge of the “best technology”.
- No windfall gains and no increased consumption due to artificially low prices (rebound effect).

Incentive taxes as instruments for energy and climate policy

Advantages primarily in the medium to long term

- Incentive taxes work via the price mechanism and thus infringe less on individual freedom.
- Incentive taxes entail lower administrative implementation costs (& cost related to controlling compliance) than subsidy-based or regulatory measures.
- The burden of incentive taxes will be offset by recycling the incentive tax revenue to households and companies. The recycling mechanism may imply efficiency gains.

➢ **Energy and climate goals can be achieved at a lower economic cost with incentive taxes than with regulatory or subsidy-based measures.**

Idea of an ecological tax reform

Basic idea

Introduction of incentive taxes, which conserve the environment and, at the same time, reduce tax system distortions via an adequate recycling mechanism.

- Revenue-neutral shift from taxation of labor and capital to taxation of environmental goods.

Three dividends of an ecological tax reform

- **First Dividend**: Increase in prices leads to a reduction of externalities, which increases environmental quality (reduction of energy use, reduction of CO2 emissions and secondary benefits, such as health, buildings, biodiversity).

Idea of an ecological tax reform

Second dividend: Efficiency gains by means of reducing other distorting taxes with the revenue from incentive taxes.

- „double dividend hypothesis“ (improvements of environmental quality and efficiency gains).

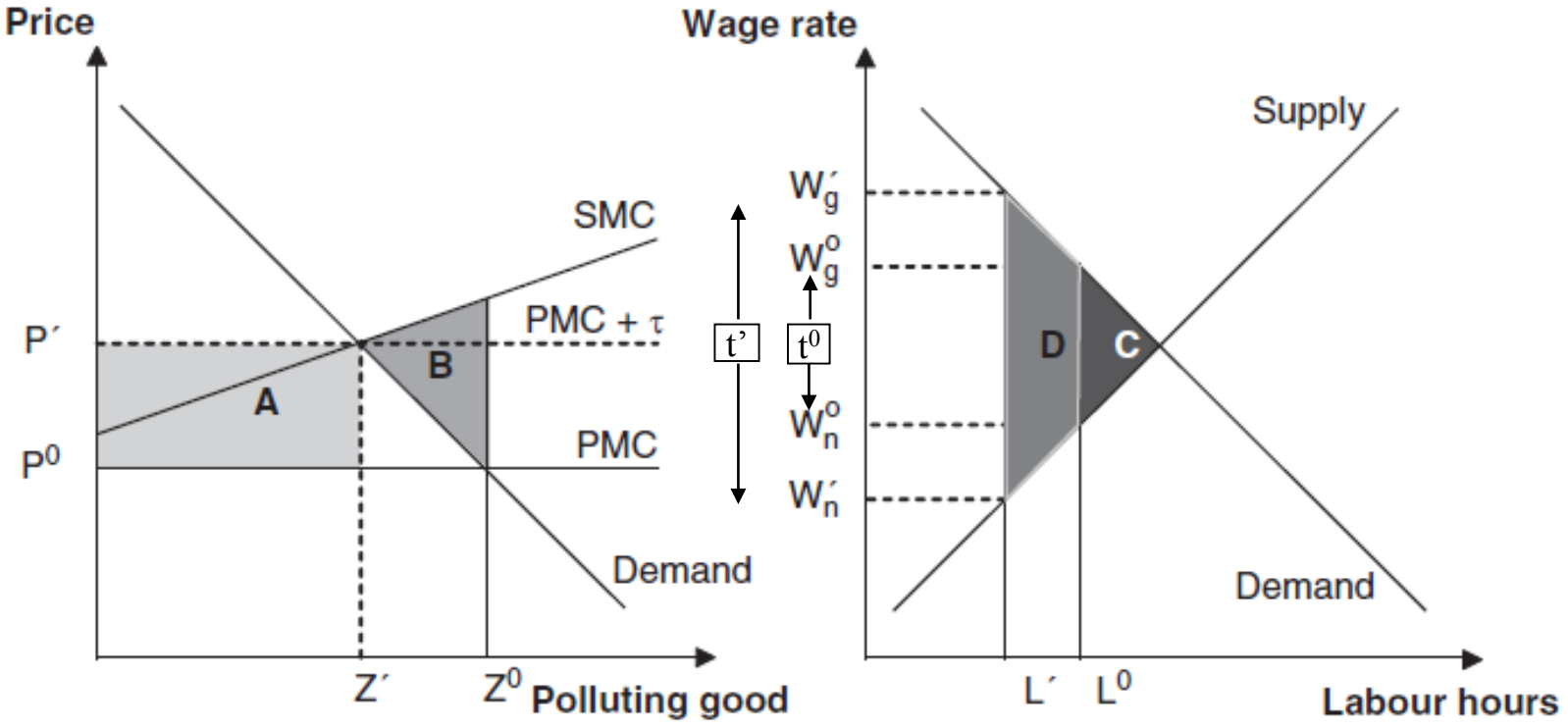
Weak form of double dividend

- Excess burden of an incentive tax is smaller when the environmental tax revenues are used to reduce distortionary taxes instead of recycling revenues to taxpayers through lump-sum payments.

Strong form of double dividend

- Raising an incentive tax and reducing a distorting tax has not only an environmental gain (first dividend) but it also reduces the overall distortion costs of taxation (second dividend).
  - Overall welfare gain is achieved even without environmental gain.

Idea of an ecological tax reform



Source: Fullerton/Leicester/Smith (2010): Environmental taxes, chapter 5 of Mirrlees Review, p. 444.

2 benefits of green tax τ: 1. Welfare gain B (environmental gain) and 2. With revenue A cut wage tax from t‘ to t^0, raise labor supply from L‘ to L^0 and reduce welfare cost on the labor market (C+D) by D.

Idea of an ecological tax reform

Weak or strong form of «double dividend» depends on:

- Structure of the economy, e.g., (functioning) labor markets, substitutability of production factors, in particular labor & energy.
- Degree of distortions in current tax system.

Third dividend: Improving competitiveness and innovation.

- Change in relative prices continuously provides incentives for innovation, in particular, regarding green technologies.
- Innovations can contribute to competitive advantages in export markets (first-mover advantage).

Idea of an ecological tax reform

Assessment

- Straightforward and attractive theoretical concept.
- Double-dividend hypothesis with restrictive assumptions
- Empirics
  - Since other economic policy conditions also change, identification of causal effects attributable to incentive taxes is difficult.
  - How to measure first-mover advantages?

- Questions difficult to tackle:
  - Distributional consequences
  - Concerns regarding the loss of competitiveness/loss of jobs in several sectors of the economy.
  - Conflict between incentive objectives and fiscal objectives.

III Questions regarding the design of incentive taxes

Which tax base?

Increase in energy efficiency and reduction of CO2-emissions

- Incentive tax on heating fuel and motor fuel
  - Taxation of motor fuel has to take into account the existing mineral oil tax burden, other existing measures, such as emission standards, and fuel tourism.
- Tax on electricity: uniform tax versus a differentiated tax based on different production methods.
  - If the various external costs are taken into account, it would make sense for electricity generation using renewable energy sources to benefit from a lower tax rate.
    - Certificates of origin as precondition
    - (In)compatibility with EU/international trade law

How to maintain competitiveness?

- Protection of domestic energy-intensive (& greenhouse gas intensive) companies that are exposed to international competition by means of exemptions from incentive taxes.
- Avoid carbon leakage
  - Domestic climate policy leads to an increase in emissions abroad due to relocations of production sites to countries with lower environmental standards.

Maintaining competetiveness: exemptions

Range of companies/sectors benefitting from exemptions

- Exemption rule is too narrow
  - Loss of competitiveness and carbon leakage
- Exemption rule is too lose
  - Incentive effect of green taxes is undermined.
  - Higher energy-related costs for economic agents who are not covered by the exemption rule (households and other companies).
  - Extending exemptions can result in higher costs for the exempted, as soon as inputs of non-exempted companies become more expensive due to the incentive tax burden.

Principles

- Exemption rules make only sense if foreign competitors do not pay comparable incentive taxes.
- Exemption rules have to be monitored periodically in order not to be considered concealed state support.

Maintaining competetiveness: exemptions

Criteria for exempting entreprises/branches

- Intensity of energy
  - Intensity of energy measured as energy costs or effective incentive tax burden in % of gross value added.
- Reduction of international competitiveness
  - List of sectors: administrative costs versus disadvantages of aggregation
  - Competition exposure (export and import competition)
- Commitment to reduction measures in the form of target agreements

How to use incentive tax revenues?

Budgetary neutrality of incentive taxes

- The public sector should have the same amount of financial resources available to it as without the incentive taxes.
- Tax revenue is to be recycled in full to households and companies.
  - See idea of an ecological tax reform
- After a clearly defined transition phase, it should not be permissible for subsidy-based measures to be financed with the revenue from the incentive taxes.
  - ➢ This will ensure that the revenue will not be subject to new earmarking without a new constitutional amendment.

IV The political economy of incentive taxes

Subconstitutional political process and interest groups

Economic interest groups

- Umbrella organizations will basically approve of the incentive tax as a market-oriented economic policy instrument, however the loss of competetiveness is a major concern.
- Energy-intensive sectors will reject an incentive tax & will demand extensive exemptions.
- Cleantech industry will support energy & climate objectives and thus incentive taxes; however, it is also in favor of subsidies which explicitly increase planning reliablity.

Environmental groups

Focus on energy & climate objectives, choice of economic policy instruments is of secondary importance.

Interest group influence

Organizational capacity

- Common economic interests as a necessary condition
- Overcome the free-rider incentives as a sufficient condition
  - Small groups, selective incentives and mandatory membership
  - Special interests versus latent interests (Olson 1965)

Causes of influence

- Extent of involvement and visibility
- Ability to challenge measures (e.g., mobilization of members)
- Market power

Interest group influence

Channels of influence

- Provision of information to public administration and politicians
- Participation in the pre-parliamentary process (consultation)
- Parliamentary process
- Participation in direct democratic decision making by means of voting recommendations and campaigning

Subconstitutional political process and further political players

Public administration

- Influence in the ongoing political process is weaker when using incentive taxes instead of subsidies & regulation.

Political decision makers

- Ideology matters (green & center left vs conservative parties).
- Visibility of intervention and public acceptance of incentive taxes.

Citizens

- Lack of understanding of price mechanism, subsidies & regulation are easier to understand.
- Moral concerns
- Distributional consequences (households with low income & households with high expenditure on mobility)
- Extension of power to tax is rejected (Brennan & Buchanan 1980).

Constitutional stage

A new basic consensus regarding climate & energy policy is pursued.

- Choice of instruments behind a (partial) veil of uncertainty in order to reach impartiality and «fair» constitutional arrangements (Brennan & Buchanan 1985).

Institutions which promote the basic consensus

- **Consultation procedure** as constitutional right (Art. 147 BV), in order to include all involved groups (special as well as latent interests) into the decision making process.
  - Protection against an overly strong influence of special interests
  - Protection against an overly strong discretionary decision making power of the executive and legislative branches of government.

Constitutional stage

- **Direct democracy: Anchoring the principle of environmental incentive taxes in the constitution**
  - A constitutional amendment provides democratic legitimacy by means of a majority vote by the people and the cantons.
  - The proposed constitutional amendment creates clear preconditions for the transition from a subsidy-based system to an incentive tax system in that it sets a time limit for earmarking.
  - Exclusion of new forms of subsidy-based measures by using climate and electricity tax revenues.
  - Existing taxes that are not in line with the concept of an incentive tax (various forms of partial earmarking) will be replaced.

I

La Costituzione federale[2] è modificata come segue:

Art. 131a Tasse sul clima e sull'elettricità

[1] Per ridurre le emissioni di gas serra e promuovere un consumo energetico parsimonioso e razionale, la Confederazione può riscuotere una tassa su combustibili e carburanti (tassa sul clima) e una tassa sull'elettricità.

[2] Le tasse sono commisurate in modo da contribuire sostanzialmente al raggiungimento degli obiettivi climatici ed energetici della Confederazione.

[3] La Confederazione tiene conto delle imprese il cui esercizio o la cui produzione presenta un consumo energetico e un'emissione di gas serra particolarmente elevati.

[4] Il prodotto delle tasse è ridistribuito alla popolazione e all'economia.

[5] Se la riscossione della tassa sul clima applicata ai carburanti causa perdite di gettito della tassa sul traffico pesante commisurata alle prestazioni (art. 85), una quota corrispondente del prodotto della tassa sul clima deve essere utilizzata per gli scopi di cui all'articolo 85 capoversi 2 e 3.

II

Le disposizioni transitorie della Costituzione federale sono modificate come segue:

Art. 197 n. 6

6. Disposizioni transitorie dell'art. 131a (Tasse sul clima e sull'elettricità)

1 La tassa sul CO_2 secondo il diritto vigente è sostituita con l'introduzione della tassa sul clima. Il supplemento sui costi di trasporto delle reti ad alta tensione secondo il diritto vigente è sostituito con l'introduzione della tassa sull'elettricità.

2 Le tasse sul clima e sull'elettricità sono aumentate gradualmente nella misura in cui l'effetto di incentivazione perseguito lo richieda.

3 Le misure di promozione che secondo il diritto vigente sono finanziate con il prodotto della tassa sul CO_2 e che sono mantenute nel nuovo diritto devono essere eliminate gradualmente e soppresse completamente entro cinque anni dall'introduzione della tassa sul clima.

4 Le misure di promozione che secondo il diritto vigente sono finanziate con il supplemento secondo il capoverso 1 e che sono mantenute nel nuovo diritto devono essere eliminate gradualmente e soppresse completamente entro dieci anni dall'introduzione della tassa sull'elettricità. Gli impegni assunti durante questo periodo transitorio devono terminare al più tardi 25 anni dopo l'introduzione della tassa sull'elettricità.

5 La ridistribuzione secondo l'articolo 131*a* capoverso 4 può essere effettuata solo nella misura in cui il prodotto della tassa sul clima non venga utilizzato per le misure di promozione ai sensi del capoverso 3 e il prodotto della tassa sull'energia elettrica non venga utilizzato per misure di promozione ai sensi del capoverso 4.

V Concluding remarks

Energy und climate policy as one of the central areas of policy.

➢ Proposal for a new constitutional amendment

Specificities of Swiss institutions and „policy of small steps“.

Economic policy advice

– Promote consensus about objectives and the most adequate economic policy instruments to achieve them.

– Provide information (long run advantages & disadvantages of possible institutional arrangements) and increase pluralism of information.

– At the same time, emphasize possible sources of uncertainty.

– Facilitate consensus finding by means of adequate compensation measures (e.g., recycling of tax revenues, measures that maintain competitiveness).

Appendix

Some literature

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