



# MARTIN-LUTHER-UNIVERSITY HALLE-WITTENBERG

Faculty of Law and Economic Sciences  
Chair of Economic Ethics  
Prof. Dr. Ingo Pies

## Ethics and Economics of Institutional Governance

*Lecture 12  
Winter Term 2025/26*

# Overview

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## *Ethics and Economics of Institutional Governance: 14 Lectures (L)*

### Introduction (L 1)

1. The Ordonomic Approach (L 2 + 3)
2. The Social Structure of Modern Society (L 4 + 5)
3. The Semantics of Modern Society (L 6)
4. Societal Learning Processes for the Reciprocal Adaptation of Social Structure and Semantics (L 7 + 8 + 9)
5. Case Study on Climate Policy (L 10 + 11)
6. Applications: The Ordonomic Line of Argumentation (L 12 + 13)

### Summary and Outlook (L 14)



# What have we learned?

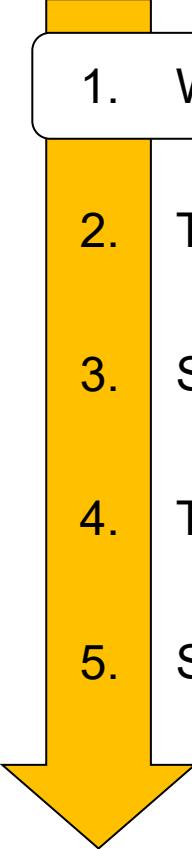
*The most important lessons of the eleventh lecture are:*

- So far, climate policy has not been particularly successful. This is mainly due to conceptual reasons.
- The climate problem involves unusual challenges: (a) a long time horizon including (b) sectoral and geographical dimensions. It is a truly global public good.
- The climate problem must be considered in the context of other pressing challenges, some of which are also truly global (and involve existential threats for humanity).
- Nordhaus' (contested) idea: Based on a cost-benefit analysis, the 1.5° C target is unrealistic and the 2° C target extremely expensive. The optimal policy goal seems to be just over 3° C by 2100.
- Consistent (= inter-nationally and inter-sectorally uniform) pricing of greenhouse gases is generally desirable. The price level should increase over time to reflect the course of negative externalities.
- The most important instrument for effective protection against climate damage is innovation.
- Without radical innovation, decarbonization of the economy (and, in particular, energy supply) cannot succeed.
- For developing countries, it should be borne in mind that economic growth contributes to the resilience of these countries and can be interpreted as a genuine contribution to protection against climate damage.



# Structure of Today's Lecture

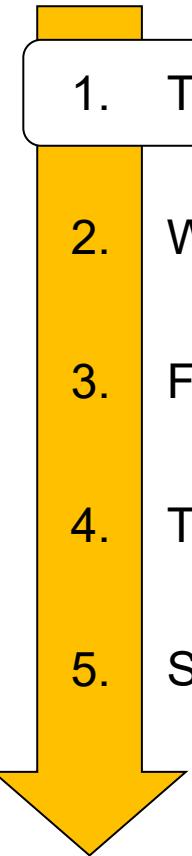
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1. Where was Marx wrong?
  2. Trade unions between class struggle and social partnership
  3. Social insurance
  4. Tax incidence
  5. Sketches of further applications



# Structure of Next Lecture

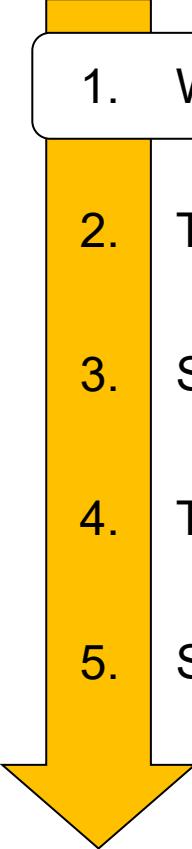
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1. The Malthusian logic
  2. What does democracy mean?
  3. Freedom of thought and speech
  4. Terror (perception)
  5. Sketches of further applications



# Structure of Today's Lecture

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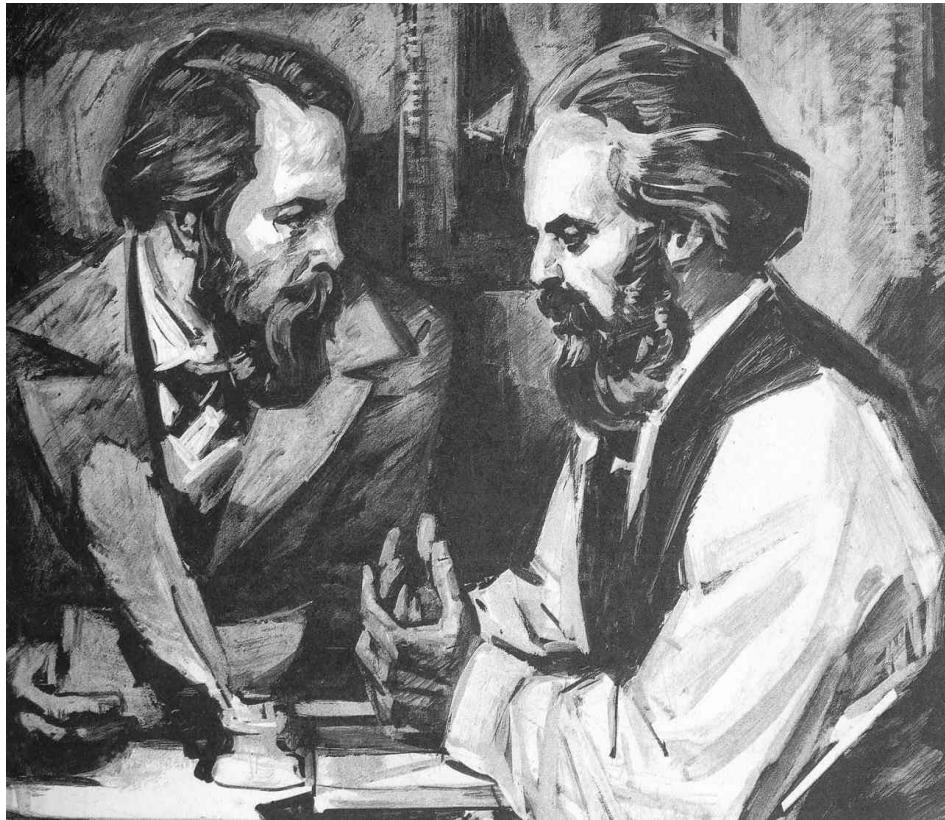
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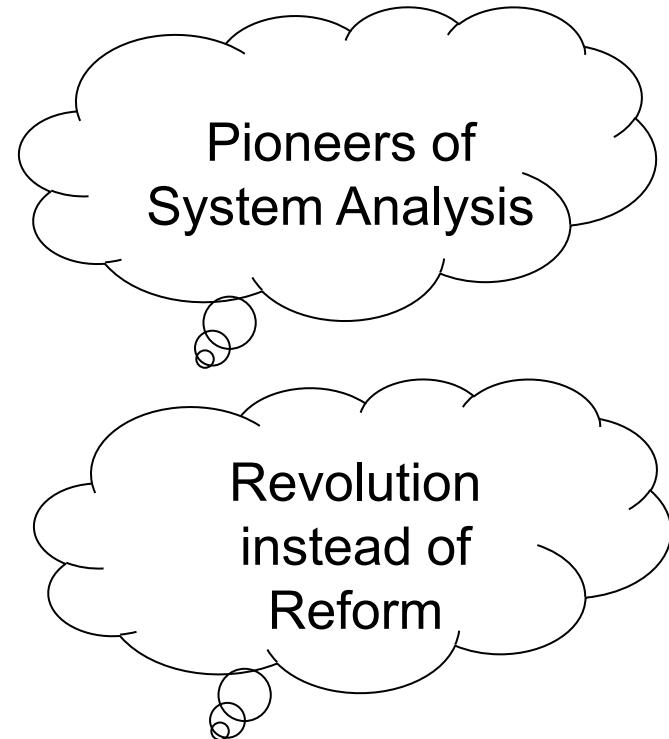


# Friedrich Engels (\* 1820; † 1895) and Karl Marx (\* 1818; † 1883)

*The two authors of the "Communist Manifesto" (1848) argued the following main thesis:  
Capitalism is a system for exploiting workers!*

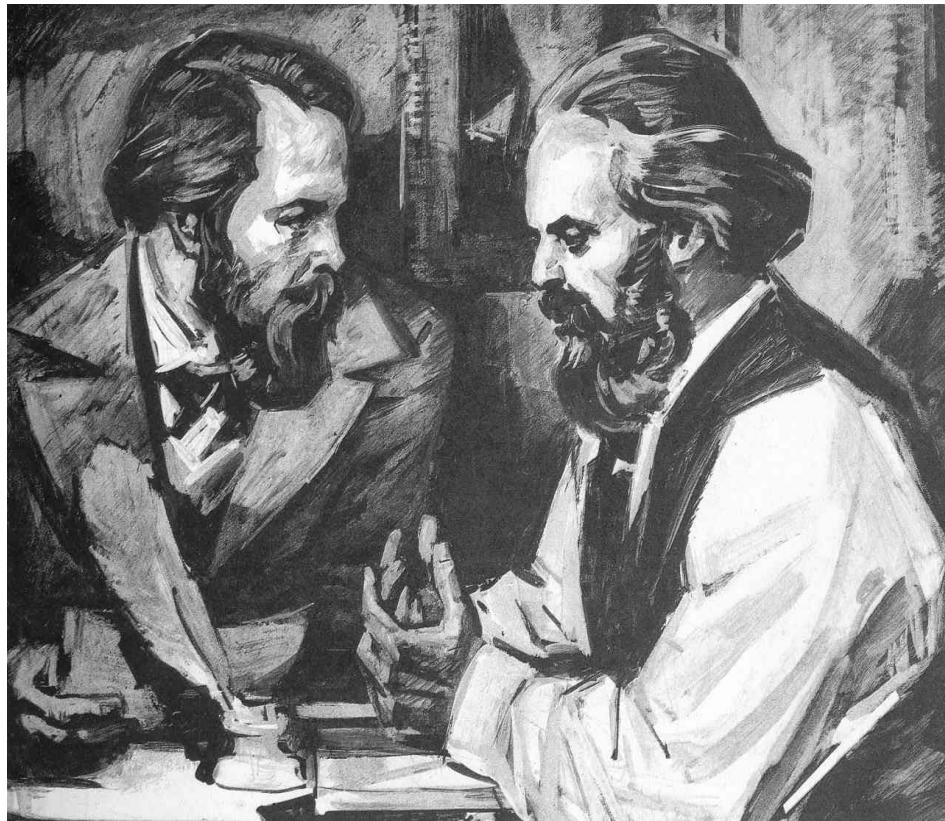


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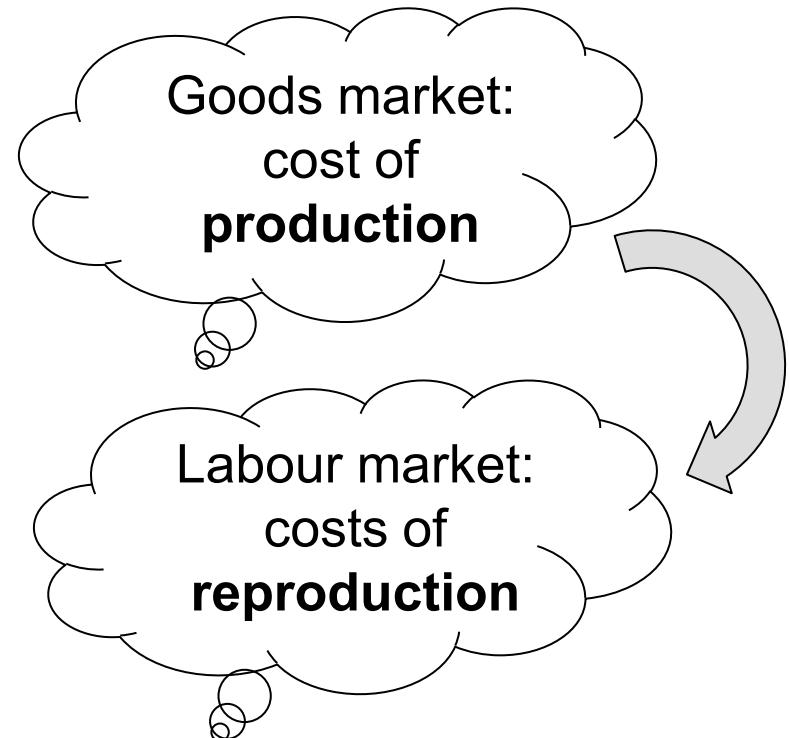


# Basic idea: Analogy between goods market and labour market

*Marx and Engels were familiar with the basics of classical economics. They knew that the price on the goods market is determined by the **cost of production**. They concluded by analogy that the price on the labour market must be determined by the **cost of reproduction**.*



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# Propositions

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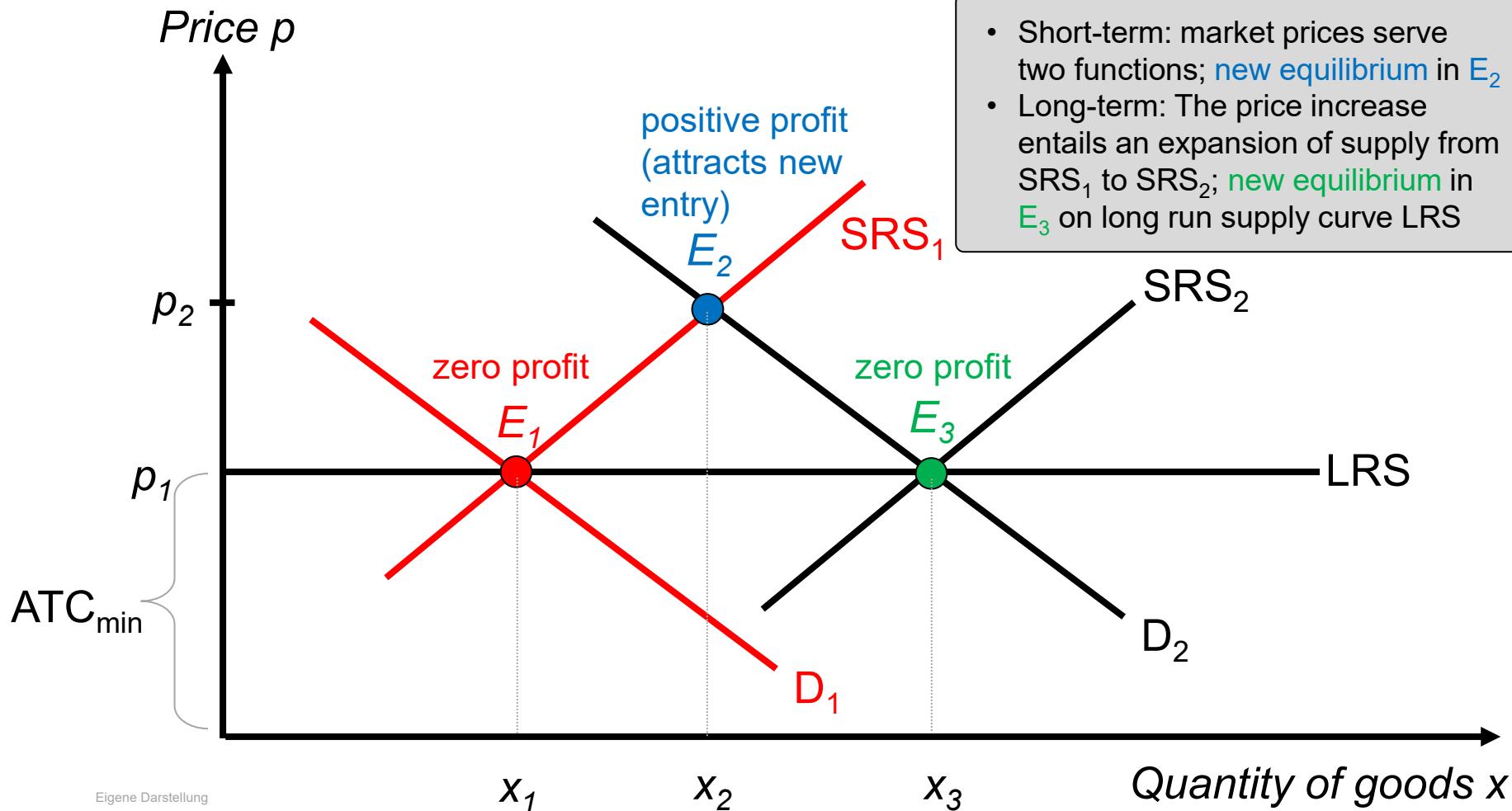


1. In the analogy of the goods market to the labour market, Marx and Engels make a serious error of thought
2. If one corrects this error of thought, one gets completely different conclusions
3. The most important is that in capitalism it is not the workers, but the companies that are "exploited"



# The Goods Market: The Classical Analysis

The minimum average total cost ( $ATC_{min}$ ) of production is the gravitational point of short-term price fluctuations. To illustrate, let us start in  $E_1$  and assume demand increases from  $D_1$  to  $D_2$ .

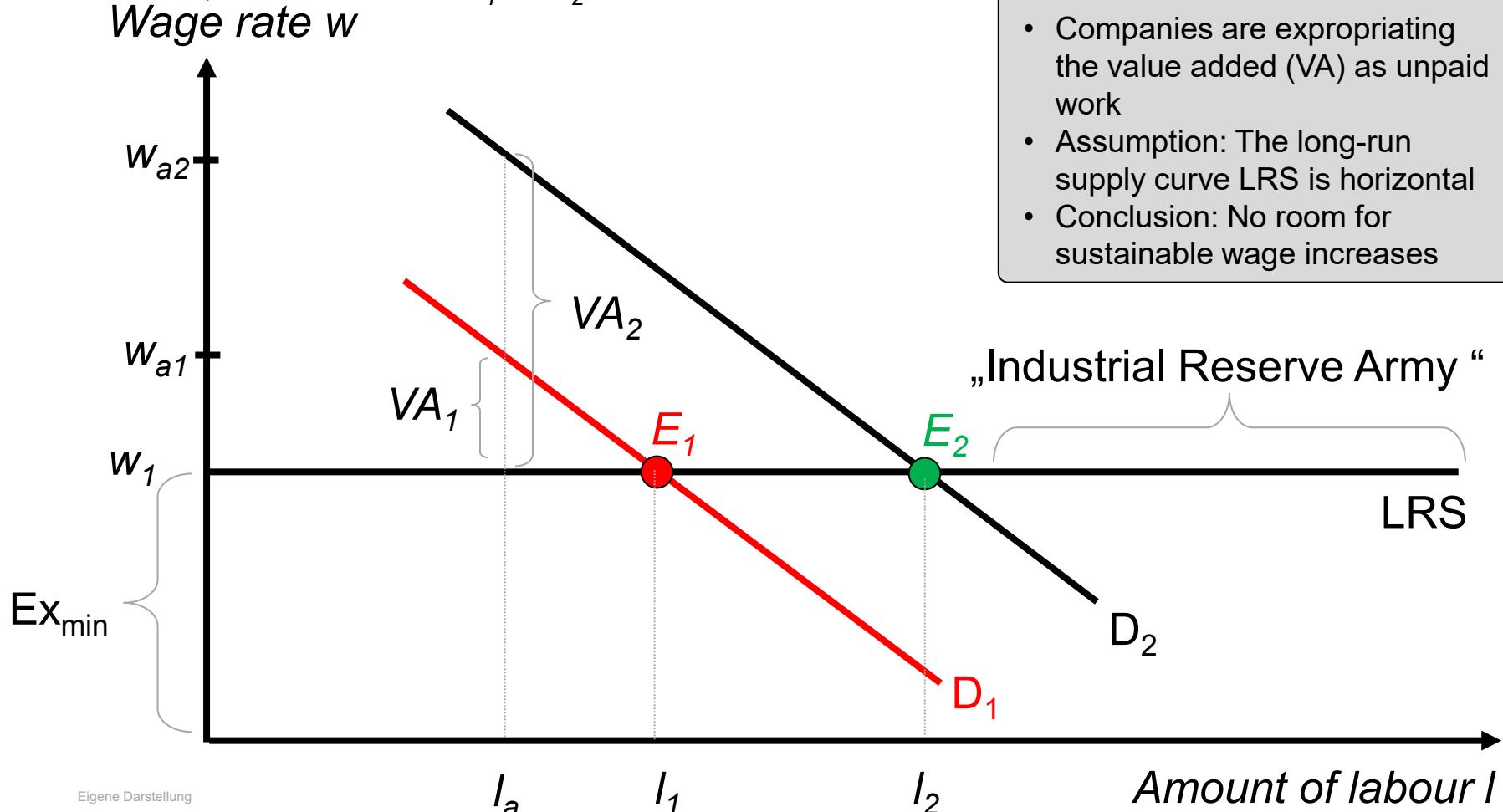


Eigene Darstellung



# The Labour Market: The Analysis by Marx and Engels

Marx and Engels believed that the subsistence minimum ( $Ex_{min}$ ) was the gravitational point of short-term price fluctuations in the labour market. Again, let us assume an increase in demand. As a result, we move from  $E_1$  to  $E_2$ .



# The Communist Manifesto (1848)

*Marx and Engels believed that in capitalism there was an inexhaustible "industrial reserve army" of unemployed people who were willing to take up a minimum wage job. Therefore, within this system, they saw no way out of raising the standard of living of workers. Consequently, they propagated revolution rather than reform.*



[http://www.jochen-ebmeier.de/resources/MARX\\_ENGELS\\_edited.JPG](http://www.jochen-ebmeier.de/resources/MARX_ENGELS_edited.JPG)

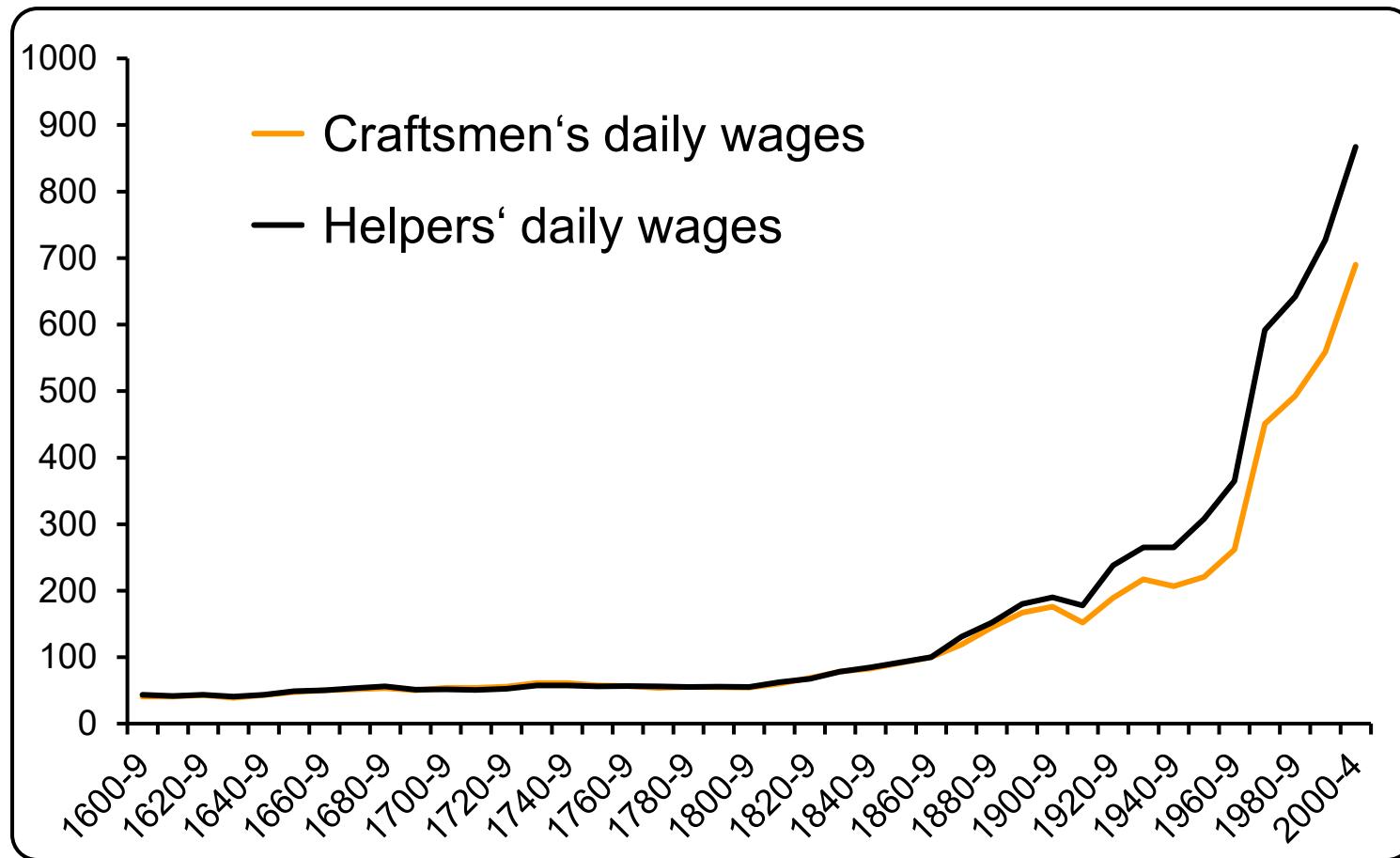
„The average price of wage labour is the minimum wage, i.e. the sum of the food necessary to keep the worker alive as a worker. So what the wage worker acquires through his activity is only enough to regenerate his naked life.“

Marx, Karl and Friedrich Engels (1848, 1959): Manifest der Kommunistischen Partei, in: MEW, Bd. 4, Berlin, p. 459-493, here p. 476.



# Real Wages in England, 1600-2004, Index (1860-9=100)

*Empirically, the expectation of Marx and Engels has not been fulfilled. On the contrary, it is the workers who have benefited sustainably from capitalism.*

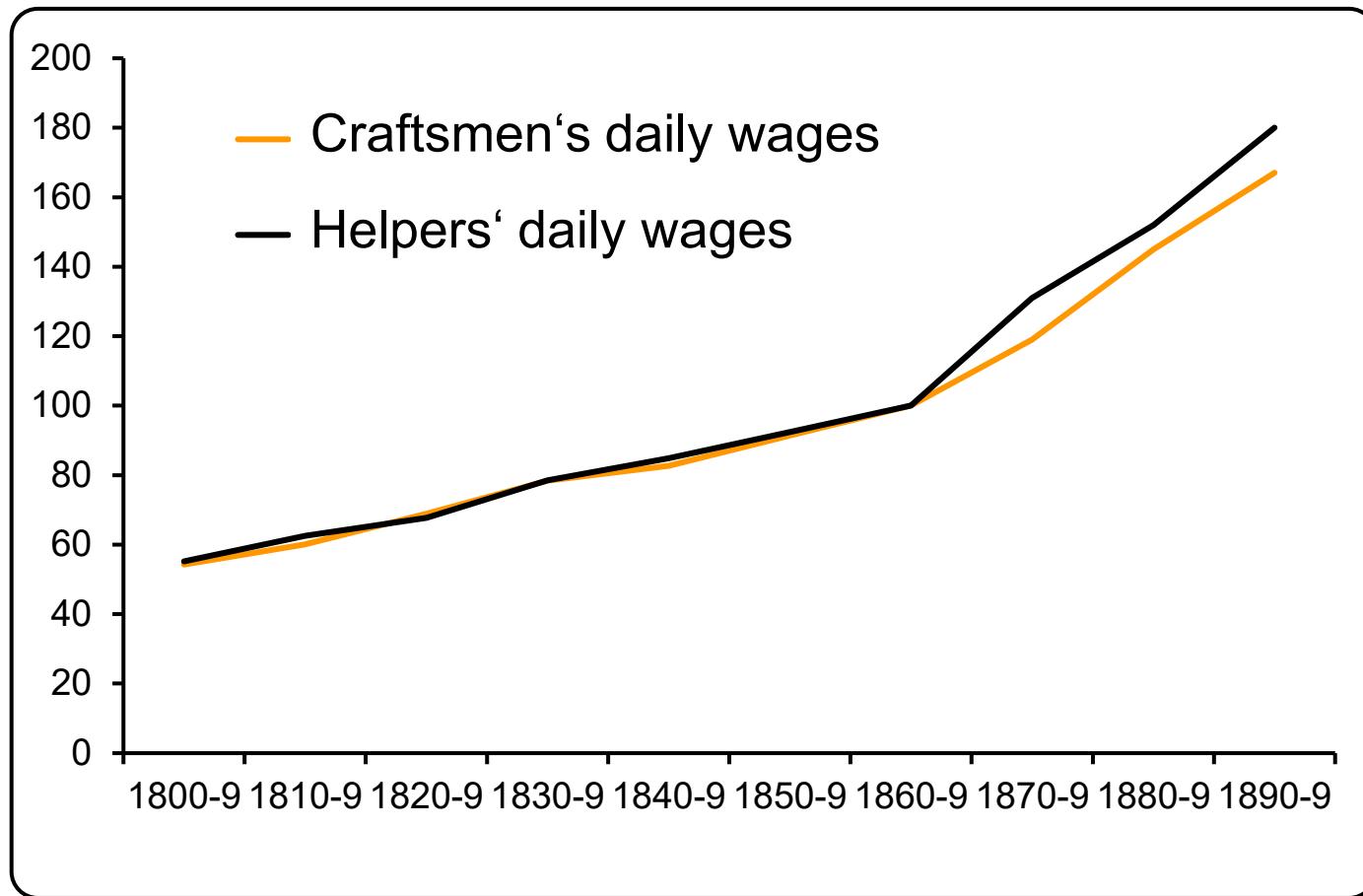


Quelle: Clark Gregory (2005; Table A2, S.1324-1325): The Condition of the Working-Class in England, 1209-2004



# Real Wages in England, 1800-1899, Index (1860-9=100)

Obviously, the authors of the Communist Manifesto made a serious mistake. But which one? What made them overlook the fact that the standard of living of workers had already risen significantly in their time?



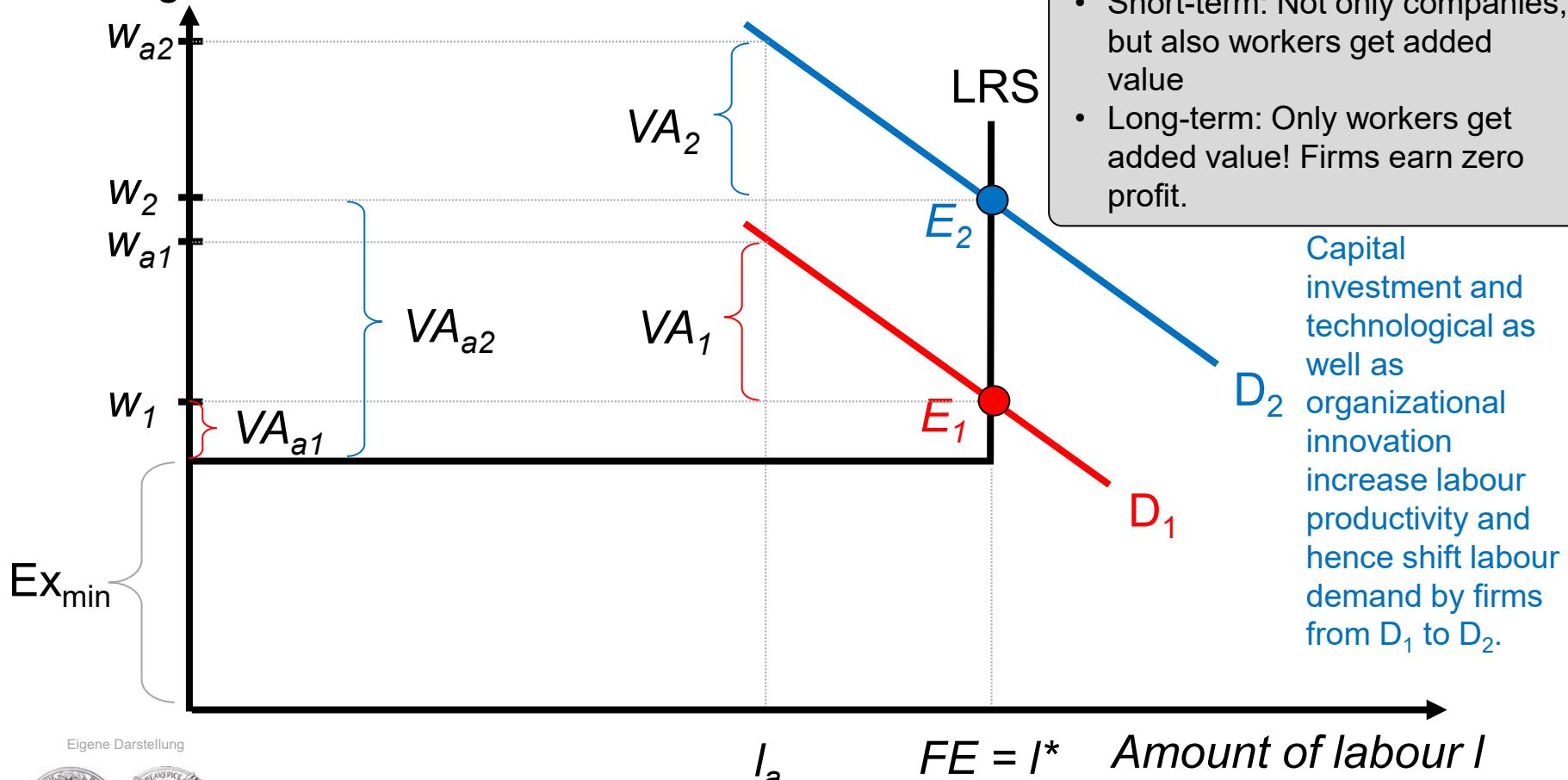
Quelle: Clark Gregory (2005; Table A2, S.1324-1325): The Condition of the Working-Class in England, 1209-2004



# The Labour Market: A Neo-Classical Analysis

Marx and Engels make an important mistake in thinking! The "industrial reserve army" is exhaustible. In capitalism, work becomes a scarce factor. Wages are rising!

Wage rate  $w$



Capital investment and technological as well as organizational innovation increase labour productivity and hence shift labour demand by firms from  $D_1$  to  $D_2$ .

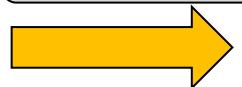
Eigene Darstellung



# Food for Thought



1. Marx and Engels believed that wage competition forced workers to hand over their value-added income to companies, leaving them with only the subsistence wage
2. In reality, however, it is the companies that have to give up their value-added income due to competitive pressure
3. In capitalism, it is not the workers but the companies that are "exploited": as agents with a societal mandate to create value

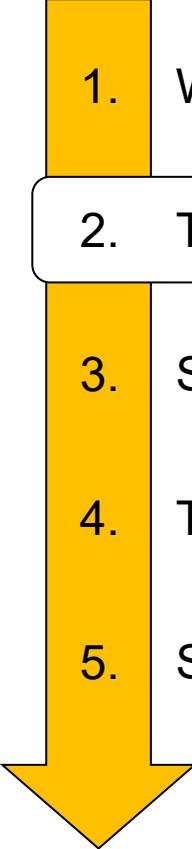


Competition is an instrument for the social diffusion ("expropriation") of entrepreneurial innovation rents.



# Structure of Today's Lecture

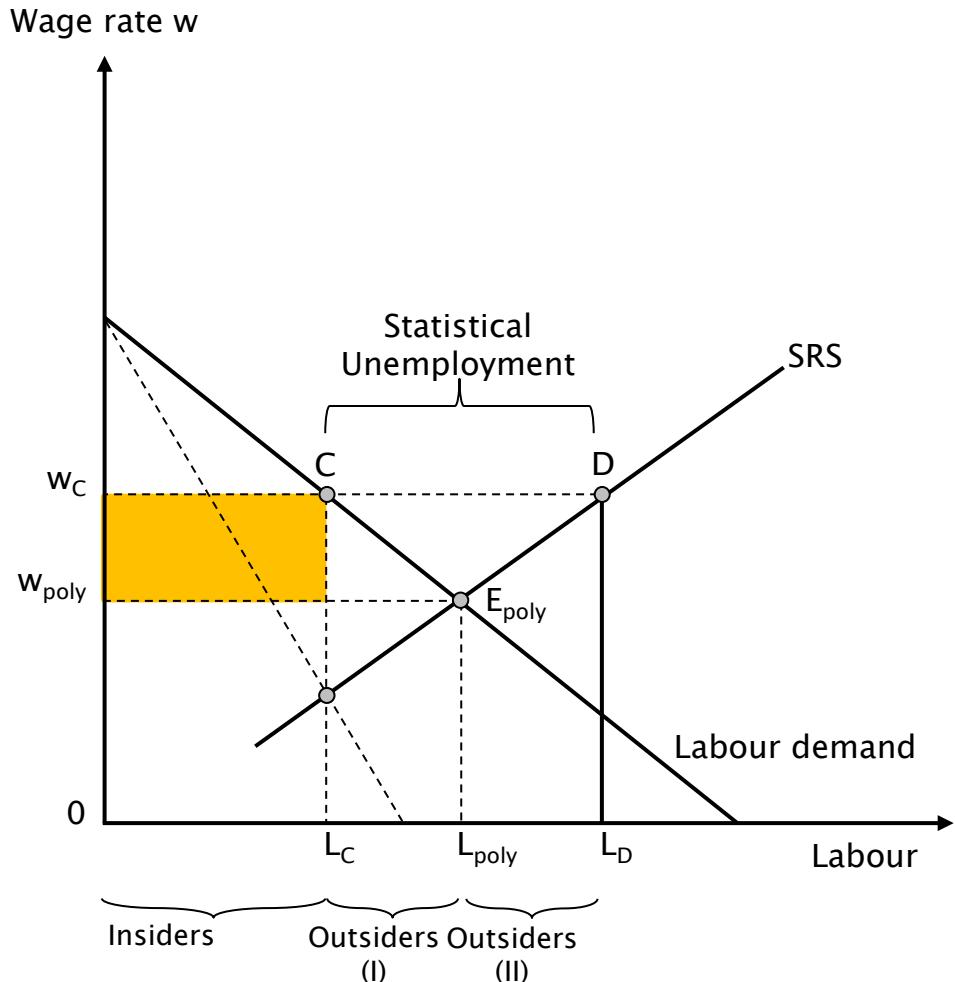
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- 
1. Where was Marx wrong?
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# Model Analysis: Monopoly Union (I)

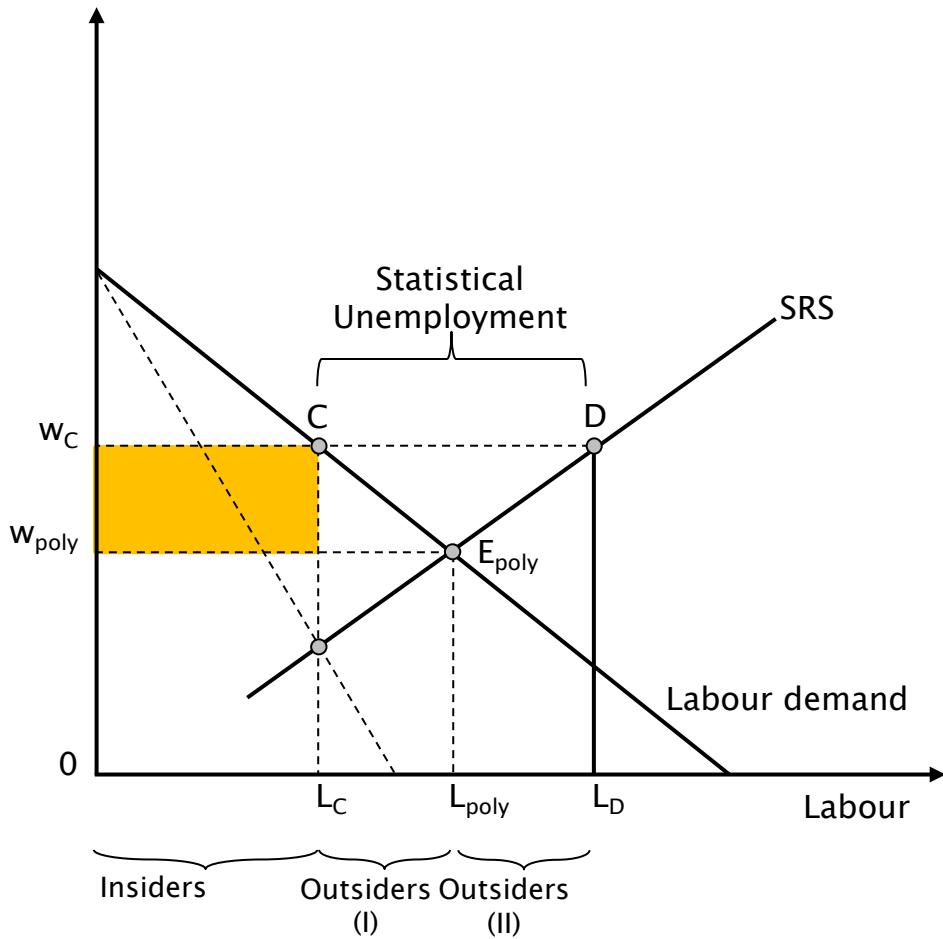
Suppose a trade union can exercise monopoly power:



# Model Analysis: Monopoly Union (II)

Suppose a union can exercise monopoly power: then a horizontal class struggle arises – between insiders and outsiders.

Wage rate  $w$



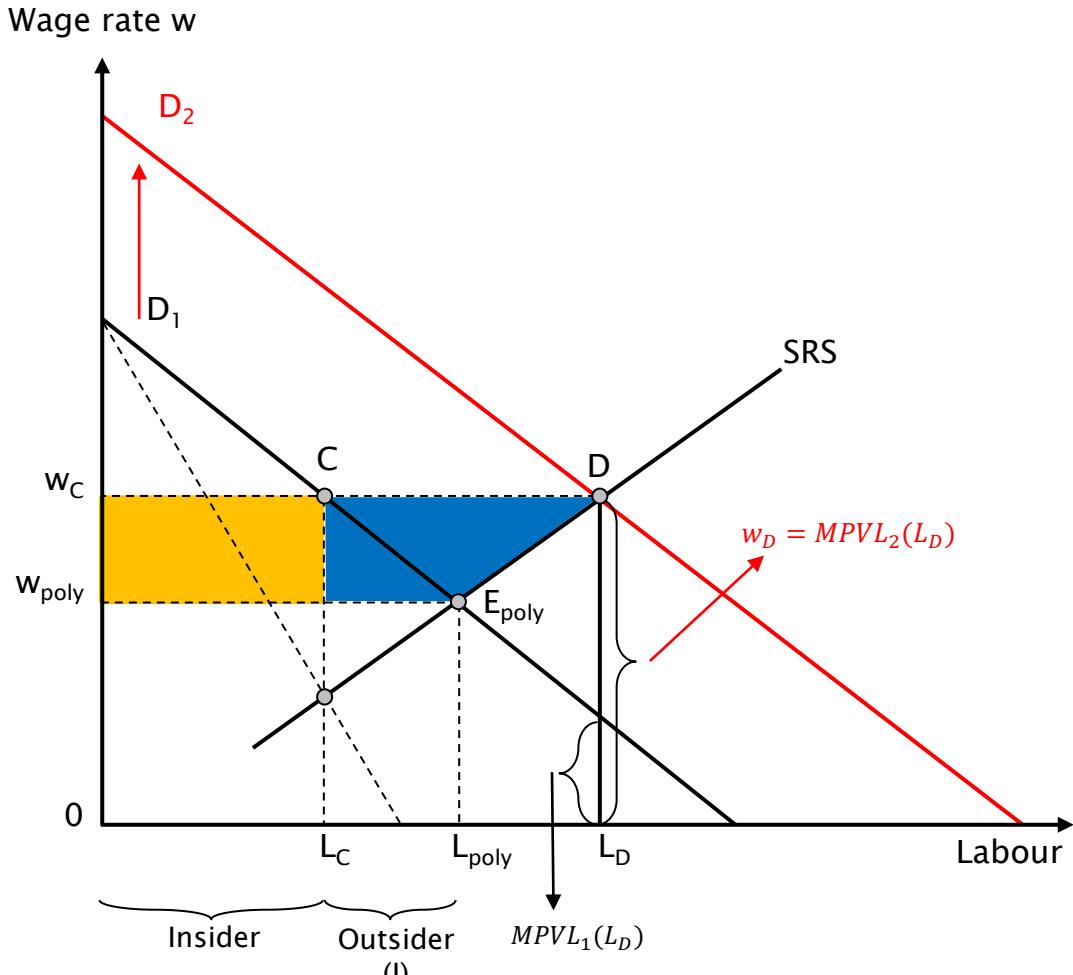
In order for point C to really be an equilibrium, the trade union must (be able to!) **prevent outsiders** from returning to the company through lower wage claims (below  $w_C$ ). The task is even more difficult because, in addition to the unemployed outsiders (I),  $L_D - L_{poly}$  workers are added (as outsiders II) who would be willing to work in the company for a lower wage rate than  $w_C$ .

Against this background, monopoly unions have tried to set up **closed shops**. This refers to the company being forced – e.g. via strikes – to hire only those workers who are union members. In this way, the trade union can effectively regulate the admission of workers to the company and thus reliably prevent wage competition.



# Model Analysis of Social Partnerships (I)

Trade unions can alternatively try to play a productive role. Then they do not move along the entrepreneurial labour demand curve, but shift it (from  $D_1$  to  $D_2$ ):



Instead of C, the new equilibrium D can be realized:

Like in the monopoly model, the wage rate rises from  $w_{poly}$  to  $w_D$  – but for a different reason: a higher marginal product value of labour! At the same time, however, employment is increasing (to  $L_D$ ).

Instead of prioritizing the insiders at the expense of the outsiders (= horizontal class struggle), also outsiders benefit (blue area) because productivity is increased.

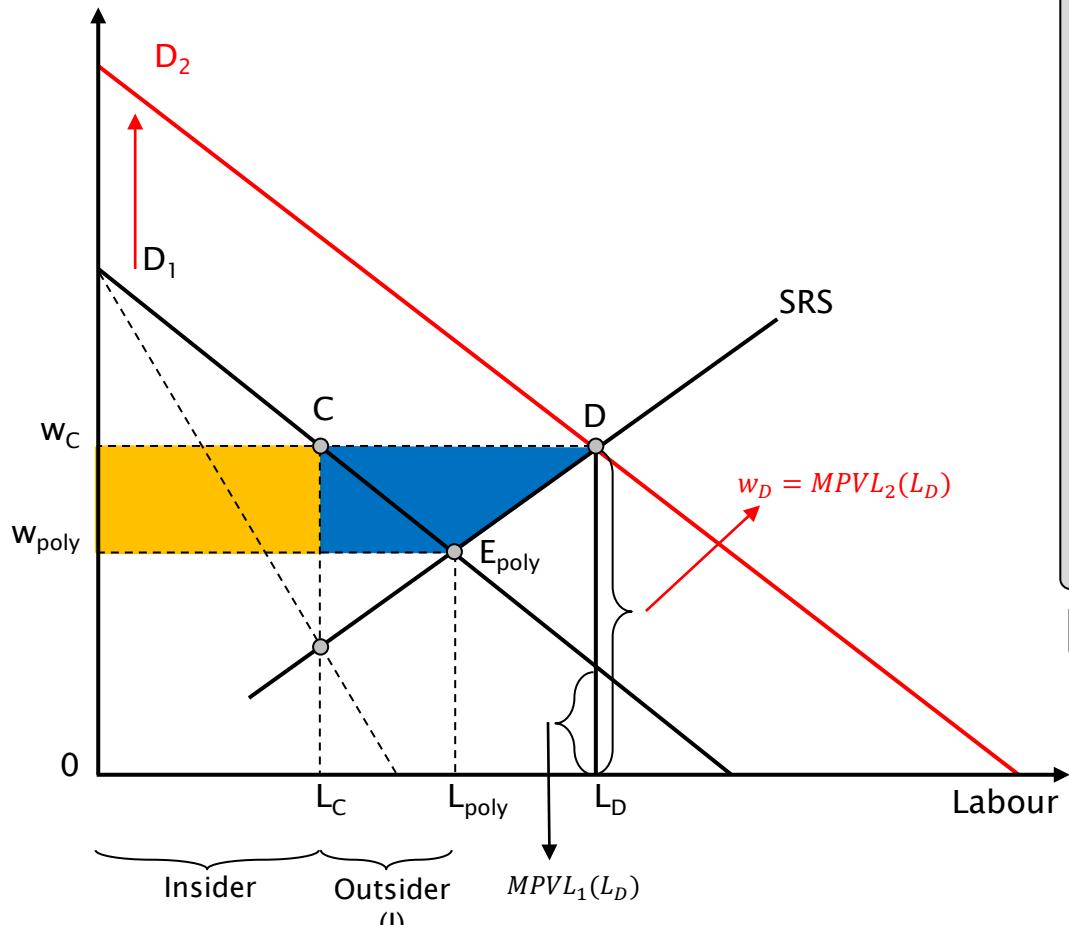
How can this be done? – Two effects should be considered.



## Model Analysis of Social Partnerships (II)

*Trade unions are productive when they improve vertical coordination (between employees and companies) and/or horizontal coordination (of workers among themselves).*

Wage rate  $w$



1. Unions pool workers' interests and reduce operating bargaining costs
2. Unions discipline free-riders who harm workers' community through individual misconduct

Both productivity effects reduce transaction costs and thus create scope for wage increases and more attractive working conditions.

→ Insiders benefit (orange area), but outsiders I + II also (blue area)

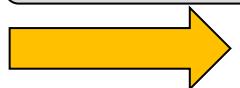


# Food for Thought



Militant trade unions, which rely on class struggle, make a considerable proportion of their members unemployed rather than rich. **They privilege insiders at the expense of outsiders.** In comparison, the strategy of social partnership is superior when it comes to providing workers with higher wages, more comfortable working conditions and better employment opportunities.

In large parts of the world, Germany is envied for its unions contributing to increasing workers' productivity via **social partnership initiatives.**

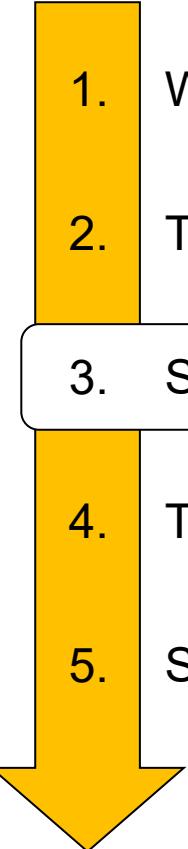


Social partnership is one of the main success factors of the German "Social Market Economy".



# Structure of Today's Lecture

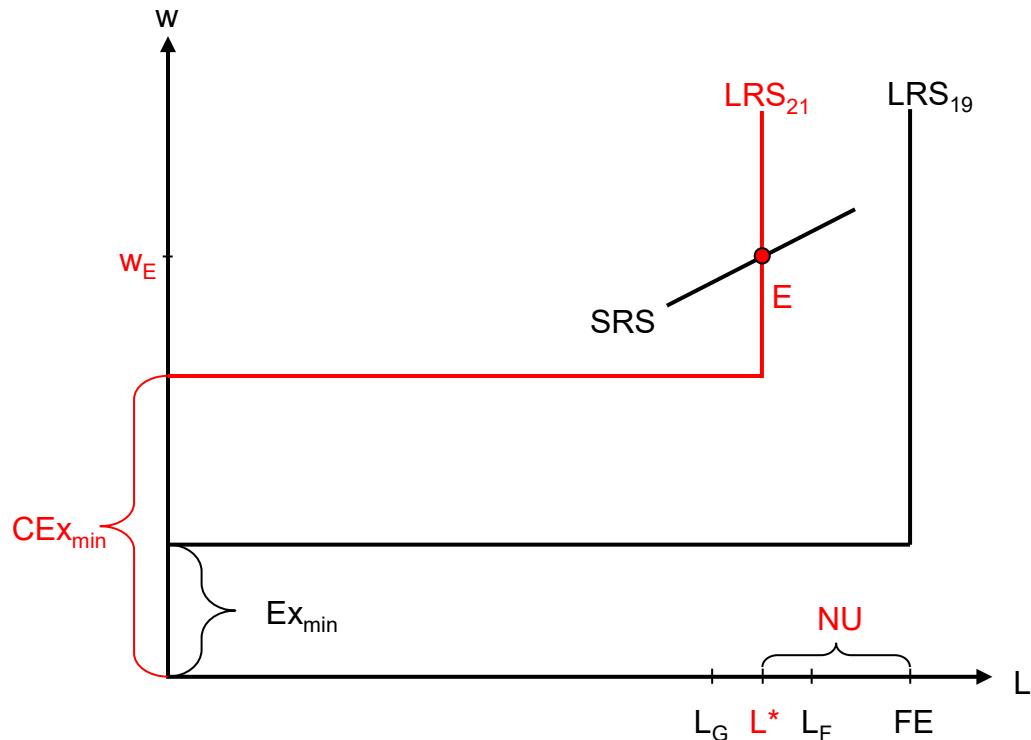
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# Analytical Basics (I)

We now need a chart that no longer represents the labour market of the 19th century, but that of the 21st century. Two differences are important:

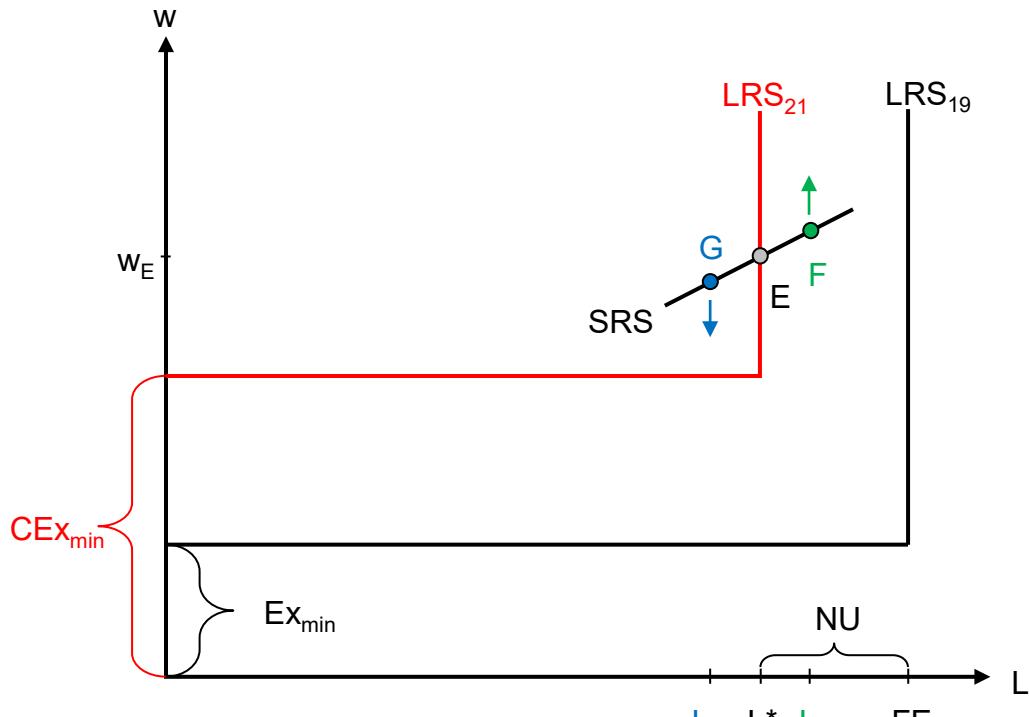


1. The horizontal section of the long-term supply curve (LRS) is moved upwards and corresponds to the culturally defined subsistence minimum ( $CEx_{min}$ ). This is way above the subsistence minimum ( $Ex_{min}$ ).
2. The vertical portion of the long-term supply curve is moved to the left. Instead of full employment (FE), a structural equilibrium ( $L^*$ ) with “natural unemployment” (NU) is now in place. It can be influenced via institutional reform.



## Analytical Basics (II)

The short-term labour supply curve (SRS) is positively inclined because workers are willing to work more for more money. The following wage dynamics apply:

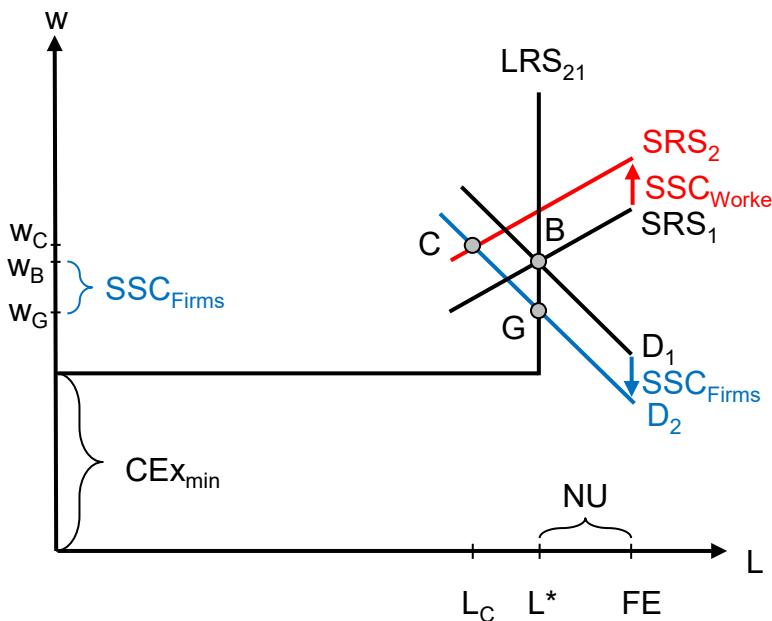


1. In the event of underemployment (point G), the workers' wage demands are under downward pressure. (Unemployed people try to get into employment.)
2. In the event of overemployment (point F), the workers' wage demands exert upward pressure. (Companies are trying to attract workers through higher wages.)
3. In equilibrium E, all workers ( $L^*$ ) find a job at the wage rate corresponding to their preference.



# Joint Social Security Contributions (I)

What happens in the labour market when a social security arrangement is introduced in which employers and employees share 50% of the funding? – **Two effects have to be distinguished here, because supply and demand react as if they had been taxed.**

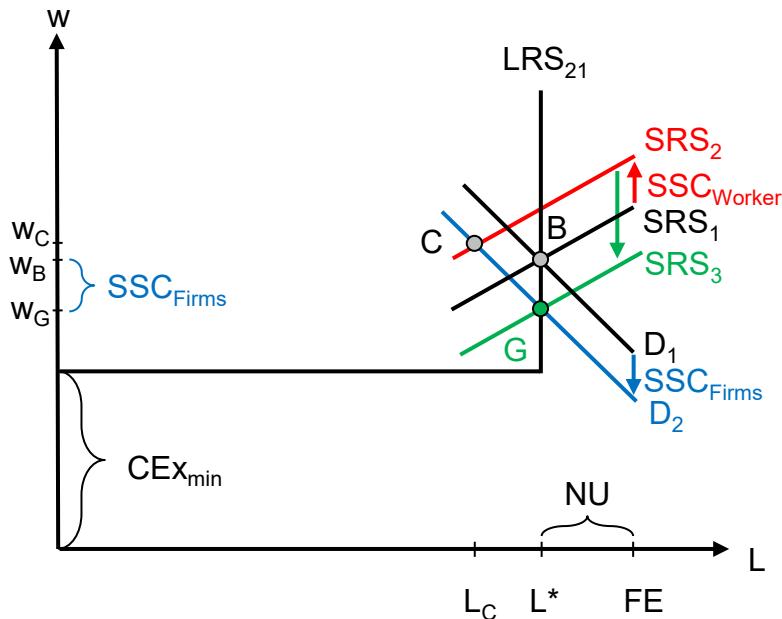


1. The labour demand curve of firms shifts vertically downwards, by the amount  $SSC_{Firms}$ , i.e. from  $D_1$  to  $D_2$ .
2. The short-term supply curve of employees shifts vertically upwards by the amount  $SSC_{Workers}$ , i.e. from  $SRS_1$  to  $SRS_2$ .
3. Temporarily, point  $C$  is a transitory equilibrium. It involves additional unemployment ( $L_C < L^*$ ).



# Joint Social Security (II)

*In the long term, unemployment will be reduced by adjusting workers' wage claims.*



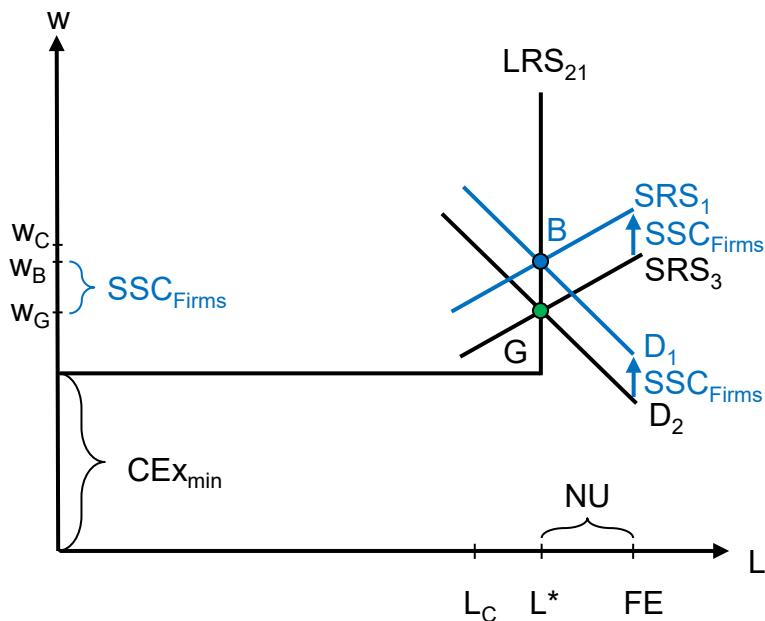
1. The short-term supply curve of employees shifts vertically downwards to  $SRS_3$  by the amount  $(SSC_{Firms} + SSC_{Workers})$ .
2. Point G is the new long-term equilibrium.
3. The employees bear the total financial burden of social security contributions.
4. They receive the gross wage  $w_B$  and the net wage  $w_G$ .

→ Employers pay the gross wage. They transfer the net wage  $w_B$  to the employees and  $SSC_{Firms}$  to the social security system.



## Joint Social Security (III)

What would happen if, starting from equilibrium point G, companies were relieved of the obligation to make an entrepreneurial contribution to social security? Again, there are two effects to consider: supply and demand!



1. The short-term supply curve of the employees shifts vertically upwards by  $SSC_{Firms}$  in order to be compensated for the additional financial burden.
2. The demand curve of the companies is also shifting upwards by  $SSC_{Firms}$ .
3. The new equilibrium is achieved in point B: workers receive their full gross wage and pay their  $SSC$  in full.

In the long term, there is no redistributive effect here.



# Food for Thought



1. Workers pay their own social security.
2. If the economic logic were clear to all parties involved, a great deal of unnecessary controversy could have been avoided in the Federal Republic of Germany, which arose from the fact that employers' associations – in the long term: in vain – tried to free themselves from non-wage labour costs by capping their social security contributions.
3. Many workers have seen this as a renunciation of solidarity. A lot of unnecessary trouble has been caused in order to push through a reform that is ineffective on a long-term basis.



In the long term, employers are not affected by social security contributions because they always have to pay the gross wage anyway.



# Structure of Today's Lecture

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1. Where was Marx wrong?
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# Analytical Basics

We derive the demand of companies in a competitively structured capital market from their profit calculation:

We assume that a company produces the good  $x$  through the use of labour ( $L$ ) and capital ( $K$ ) and incorporated technology ( $T$ ). This asset is sold at market price  $p$  on the output market. On the input markets, the wage rate  $w$  is paid for labour and interest rate  $z$  for capital. We are neglecting expenditure on intermediate products. The tax rate on capital income is  $t$ . Consequently, the profit function is given by:

$$G = p \cdot x(L, K, T) - w \cdot L - z \cdot (1 + t) \cdot K$$

We are interested in how much capital a profit-maximizing company wants to use. That's why we derive this function with respect to  $K$ . We receive:

$$\frac{\partial G}{\partial K} = p \cdot \frac{\partial x}{\partial K} - z \cdot (1 + t) = 0 \Leftrightarrow \text{MPV}_K = z \cdot (1 + t)$$

Left side: The **marginal product value of capital** ( $\text{MPV}_K$ ) corresponds to the additional revenue that can be generated when an additional unit of capital is used to produce more  $x$ , which can then be sold at price  $p$ .

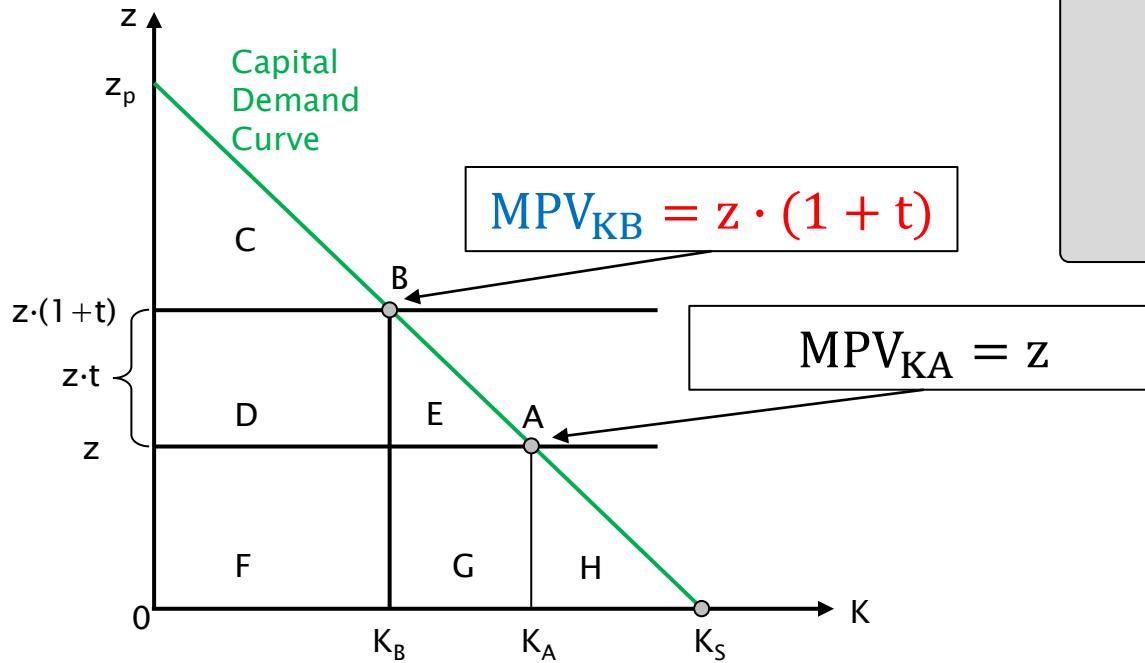
Right side: The **marginal procurement costs** of capital correspond to the interest rate ( $z$ ) and the capital income tax ( $z \cdot t$ ).



# Graphicak Analysis

The capital demand curve of enterprises is negatively inclined: if capital is cheaper, more capital is demanded and used in production.

$$\frac{\partial G}{\partial K} = p \cdot \frac{\partial x}{\partial K} - z \cdot (1 + t) = 0 \Leftrightarrow MPV_K = z \cdot (1 + t)$$

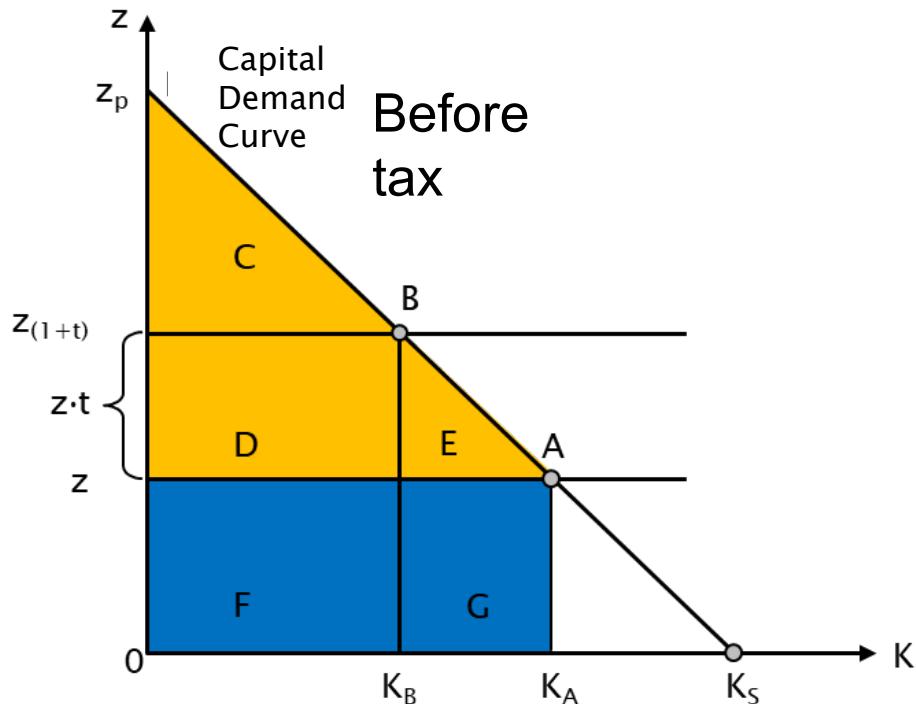


- Without a tax on capital, point A is realized.
- If the tax is introduced, equilibrium switches from A to B.
- In B, the marginal product value of capital must correspond not only to the interest rate. Instead, it now must cover the overall procurement costs of capital, i.e. interest plus tax.



# Analysis ex ante

Without a capital tax, point A is the initial equilibrium.

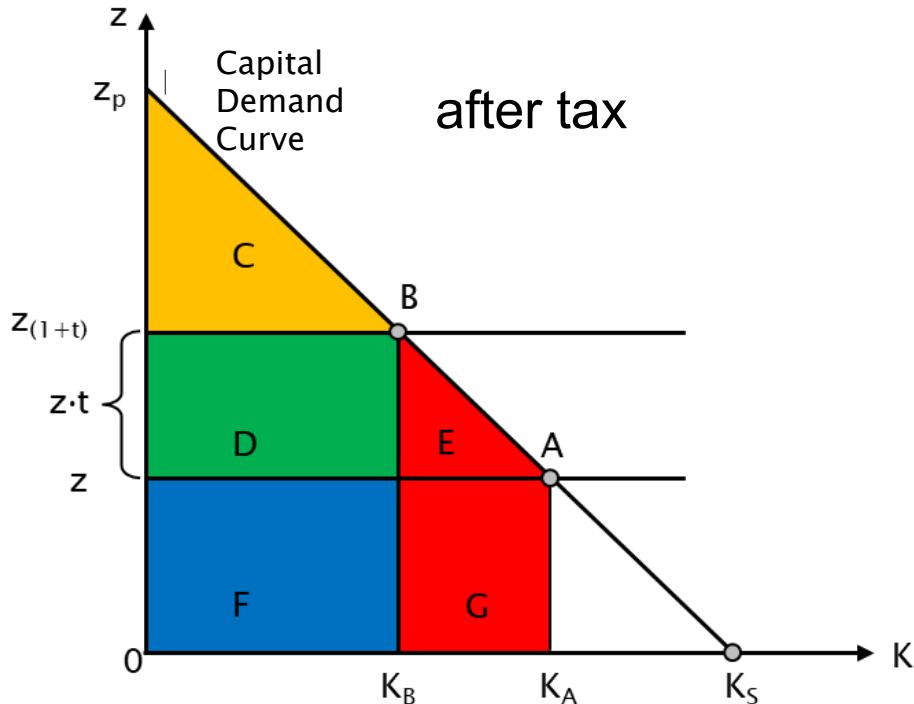


1. The owners of capital receive interest payments from the company (= blue area).
2. The orange area is not synonymous with profit!
3. It is needed to buy intermediate goods and to pay wages.
4. Short-term profits melt to zero in the long run.



# Analysis ex post

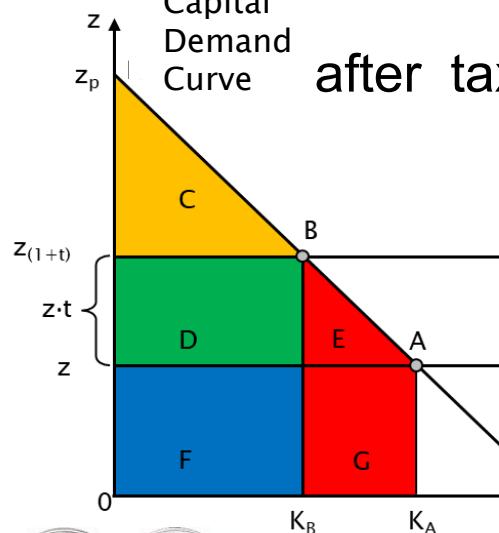
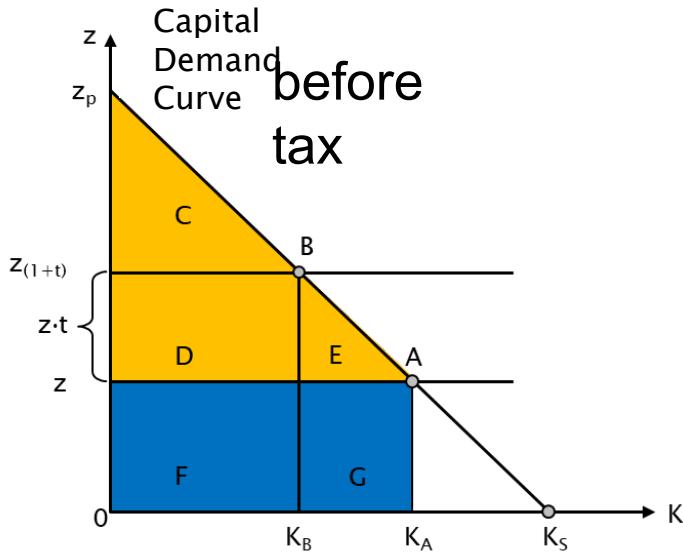
After introducing a tax on capital, the equilibrium shifts from A to B.



1. The owners of capital receive interest payments from the company (= blue area). They lose area G.
2. The state receives taxes (= green area D).
3. The orange area (= wage total) shrinks to orange area C.
4. Workers lose areas D + E.
5. The **loss of social welfare** corresponds to the red areas E + G.



# Tax incidence at a glance



	before tax	after tax	$\Delta$
Rent for firm	0	0	0
Wages total	$C + D + E$	$C$	$-D - E$
Interest total	$F + G$	$F$	$-G$
Tax revenue	0	$D$	$D$
Welfare loss		$E + G$	$E + G$

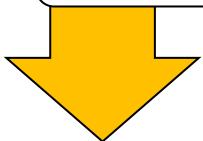
The state has higher revenues (D). Workers lose wages ( $D+E$ ). The owners of capital lose interest (G). Society loses ( $E+G$ ).



# Structure of Today's Lecture

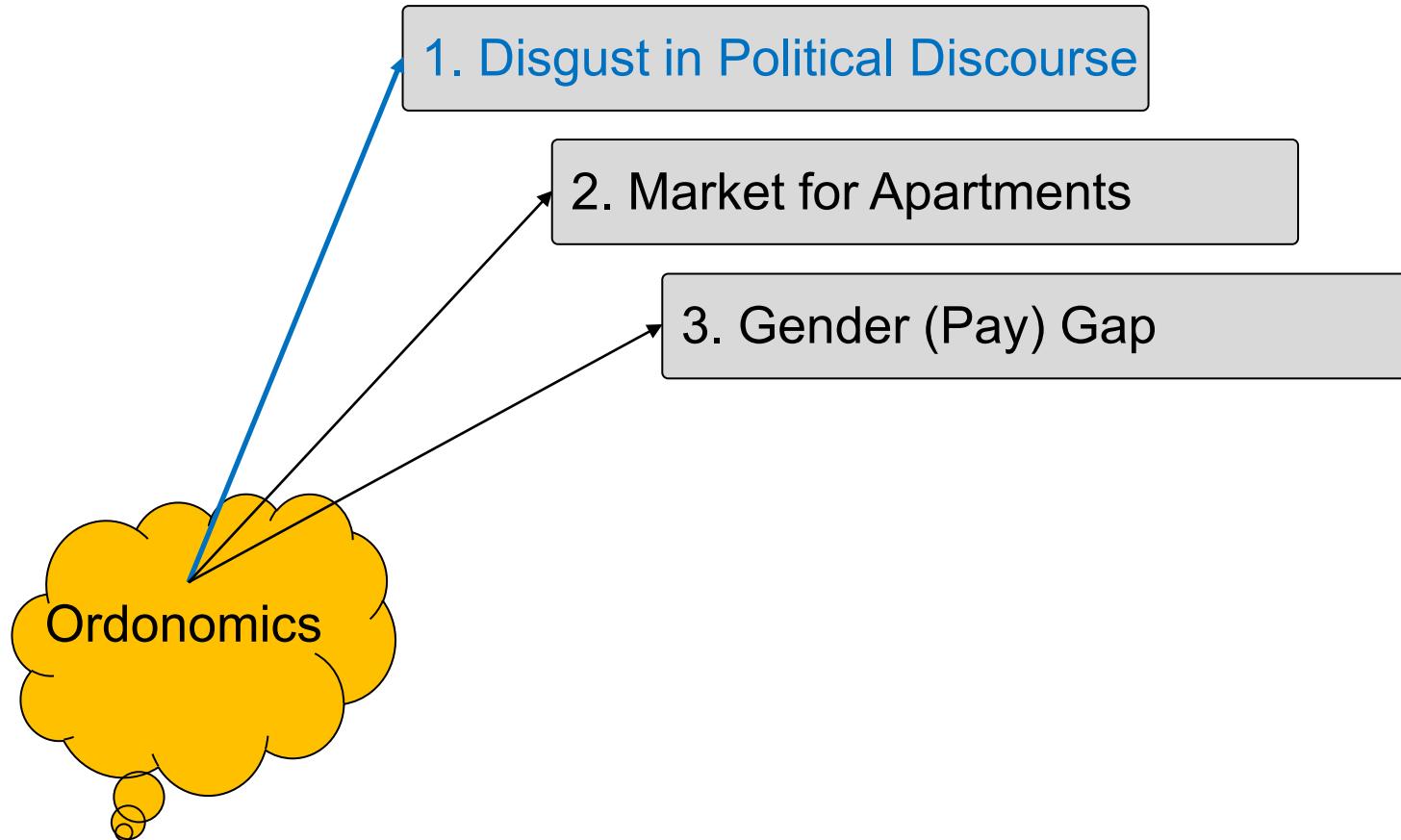
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# Sketches

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# Disgust is a Strong Emotion

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<https://pixabay.com/photos/man-face-look-averse-listless-272676/>



<https://pixabay.com/photos/disgusted-expression-female-15793/>



<https://pixabay.com/photos/boy-child-kid-family-disgust-1528150/>



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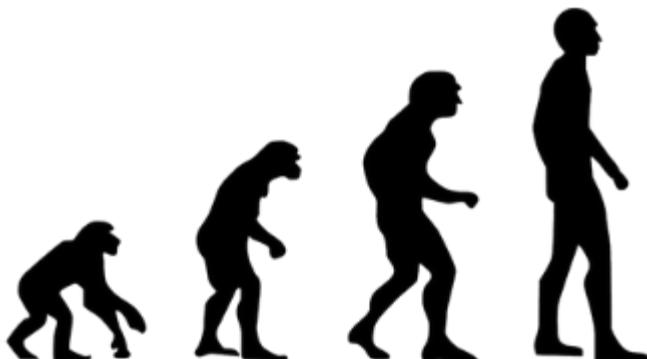


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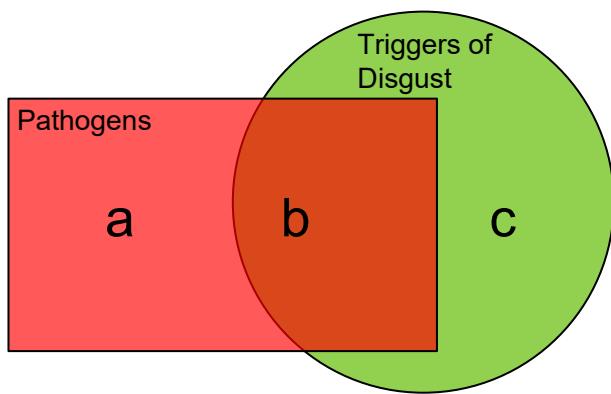


# On the Functionality and Dysfunctionality of the Feeling of Disgust

*Disgust has arisen evolutionarily in order to prevent contagious diseases and in particular to prevent food poisoning (area b).*



https://pixabay.com/illustrations/evolution-development-forward-3543775/  
**E v o l u t i o n**



## Problems:

- Area a: Not everything that makes you sick produces disgust (poisonous fungi, salmonella)
- Area c: Some things that do not make you sick cause disgust (snails, frog legs, mussels, etc.)
- In addition: disgust can even refer to humans (caste, racial segregation, etc.)



# On the Philosophy of Disgust (I)

*The philosopher Martha Nussbaum (2010; p. 204 f.) describes societal learning processes in which the old practice of feeling disgusted by other people fades.*



Quelle: <https://www.ius.uzh.ch/de/staff/visiting-professors/hs18-hedi-fritz-niggli.html>

**Martha Nussbaum (\*1947)**  
University of Chicago

„In race relations, we have made amazing and wonderful strides from the politics of disgust to the politics of humanity. I was brought up by a father ... who seriously believed that it was unclean and contaminating for a white person to drink from a glass that had previously been used by a black person, or to use a toilet that had been used by a black person. Those ideas of contamination and taint, which once were enacted in law – in the Jim Crowe regime of separate drinking fountains, swimming pools, lunch counters – really do appear to have faded.“

Source: Nussbaum, Martha C. (2010): From Disgust to Humanity. Sexual Orientation & Constitutional Law, Oxford u.a.O.: Oxford University Press, p. 204 f.



# On the Philosophy of Disgust (II)

*The philosopher Martha Nussbaum (2004; p. 14) writes critically about the feeling of disgust:*



Quelle: <https://www.ius.uzh.ch/de/staff/visiting-professors/hs18-hedi-fritz-niggli.html>

**Martha Nussbaum (\*1947)**  
University of Chicago

„[I]ts thought-content is typically unreasonable, embodying magical ideas of contamination, and impossible aspirations to purity, immortality, and nonanimality, that are just not in line with human life as we know it. That does not mean that disgust did not play a valuable role in our evolution; very likely it did. ... I shall argue, however, that a clear understanding of disgust's thought-content should make us skeptical about relying on it as a basis for law. That skepticism should grow greatly as we see how disgust has been used throughout history to exclude and marginalize groups or people who come to embody the dominant group's fear and loathing of its own animality and mortality.“

Source: Nussbaum, Martha C. (2004): Hiding from Humanity: Disgust, Shame, and the Law, Princeton und Oxford: Princeton University Press, p. 14.



## On the Philosophy of Disgust (III)

*The philosopher Martha Nussbaum (2010; p. xiv) draws the conclusion that the invocation of disgust should be banished from our political discourses:*



Quelle: <https://www.ius.uzh.ch/de/staff/visiting-professors/hs18-hedi-fritz-niggli.html>

**Martha Nussbaum (\*1947)**  
University of Chicago

„The politics of disgust is profoundly at odds with the abstract idea of a society based on the equality of all citizens, in which all have a right to the equal protection of the laws. It says that the mere fact that you happen to make me want to vomit is reason enough for me to treat you as a social pariah, denying you some of your most basic entitlements as a citizen. ... It also violates a fundamental paradigm of political rationality: laws made in response to such animus lack a rational basis.“

Source: Nussbaum, Martha C. (2004): Hiding from Humanity: Disgust, Shame, and the Law, Princeton und Oxford: Princeton University Press, p. xiv.



# A Reminder: The Ordonomic Grammar of Arguments

*Value judgements can be criticized in two ways: „downstream“ and „upstream“*

## „Downstream“-Arguments

Value judgements can be informed (and corrected) by (new) positive insights:

from (old 1) and  
(new 2)  
follows (3 new).



## The Practical Syllogism

1. Normative Premiss:	Volition
+ 2. Positive Premiss:	Ability
= 3. Conclusion:	Ought

upstream

downstream

## „Upstream“-Arguments

New positive insights lead us to question the appropriateness of the normative premiss:

From (new 2) may follow (new 1).



# Ordonomic Reconstruction in Practical Syllogism

*Martha Nussbaum's considerations can be turned into a [first-order downstream argument](#).*

Argument against disgust in political discourses:

1. Political discourses should aim at establishing a consensus by convincing one another with arguments.
2. Arguments of disgust, which do not refer to spoiled foods, but to human beings, express feelings and are therefore at best to be classified as expressive arguments, at worst as misguided messages of a misled state of mind, but not as factually sound arguments that try to convince others.
3. **Arguments of disgust directed at people should be banished from political discourse.**

On how to proceed:

We formulate a normative premiss that outlines the goal of political discourse.

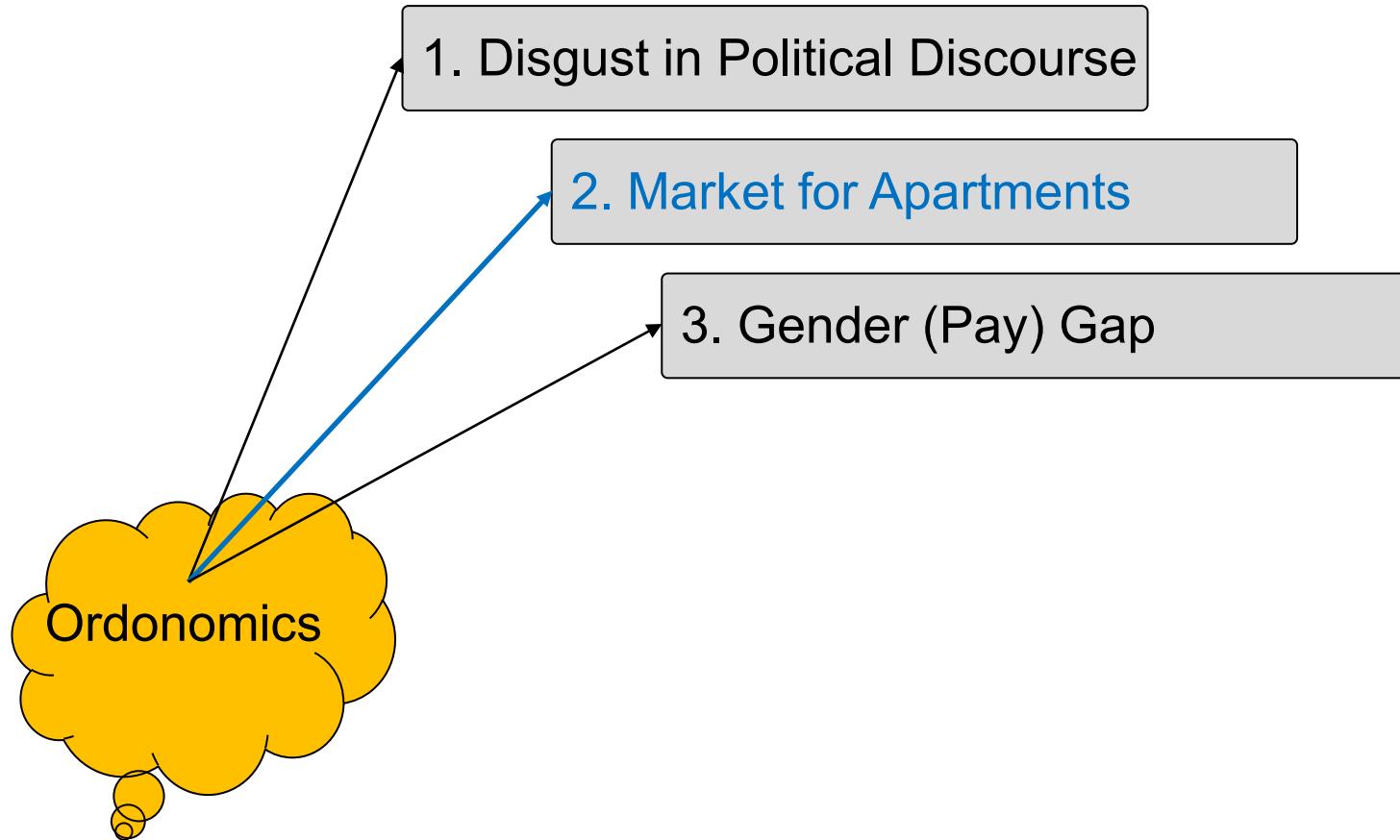
The positive premiss describes the functionality or dysfunctionality of certain arguments that refer to disgust.

**The conclusion is that arguments of disgust are misplaced in political discourses.**



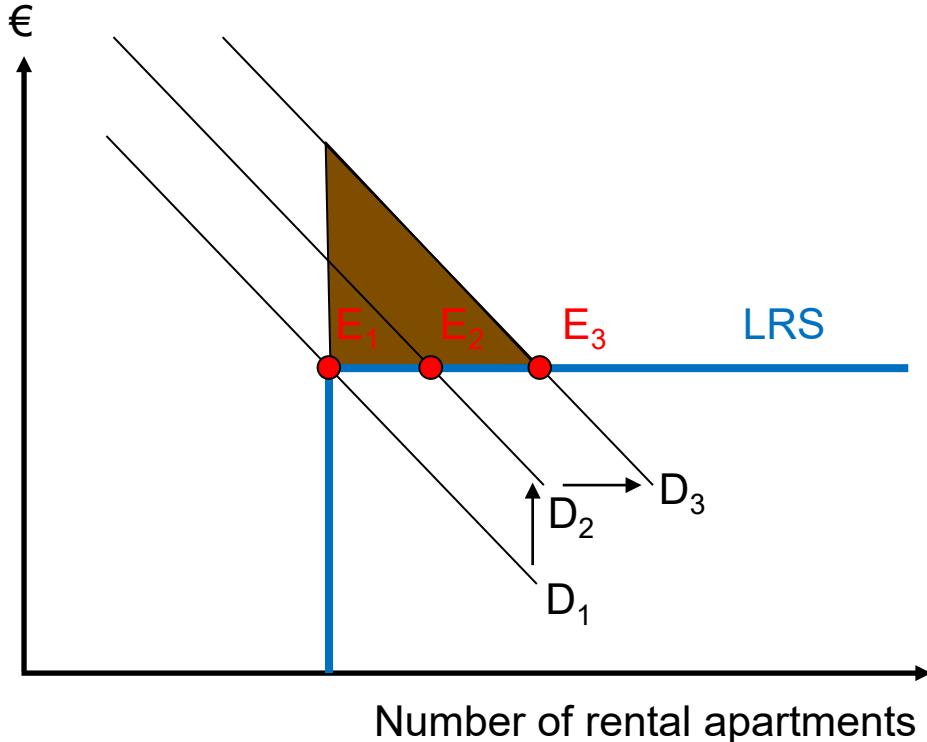
# Sketches

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# The Competitive Market for Apartments

*What happens if air quality in the inner cities increases significantly?*

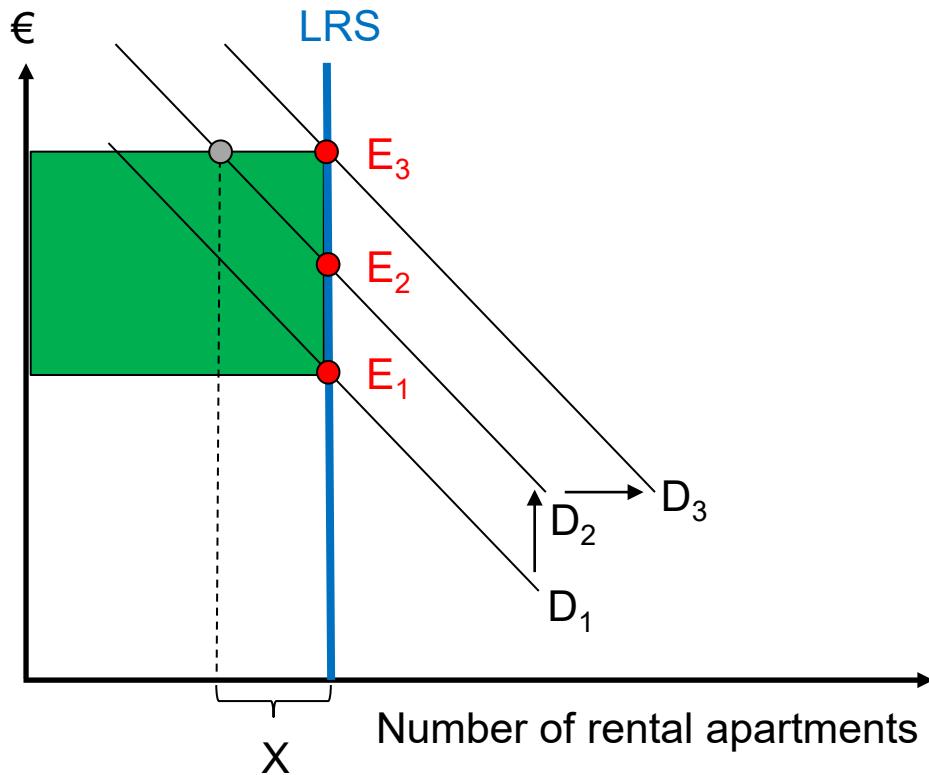


- Initial equilibrium E<sub>1</sub>
- The long-run supply curve (LRS) has a vertical and a horizontal section
- The marginal willingness to pay by tenants already living in inner cities increases (from D<sub>1</sub> to D<sub>2</sub>): new equilibrium in E<sub>2</sub>
- From the suburbs, new tenants move into the city centre. Demand rises again (from D<sub>2</sub> to D<sub>3</sub>): new equilibrium in E<sub>3</sub>
- In the long term, more apartments will be built without rent rising (pure quantity reaction)
- In the long term, the consumer surplus of tenants increases by the brown triangle



# The Strangulated Market for Apartments

What happens if air quality in the inner cities increases significantly?

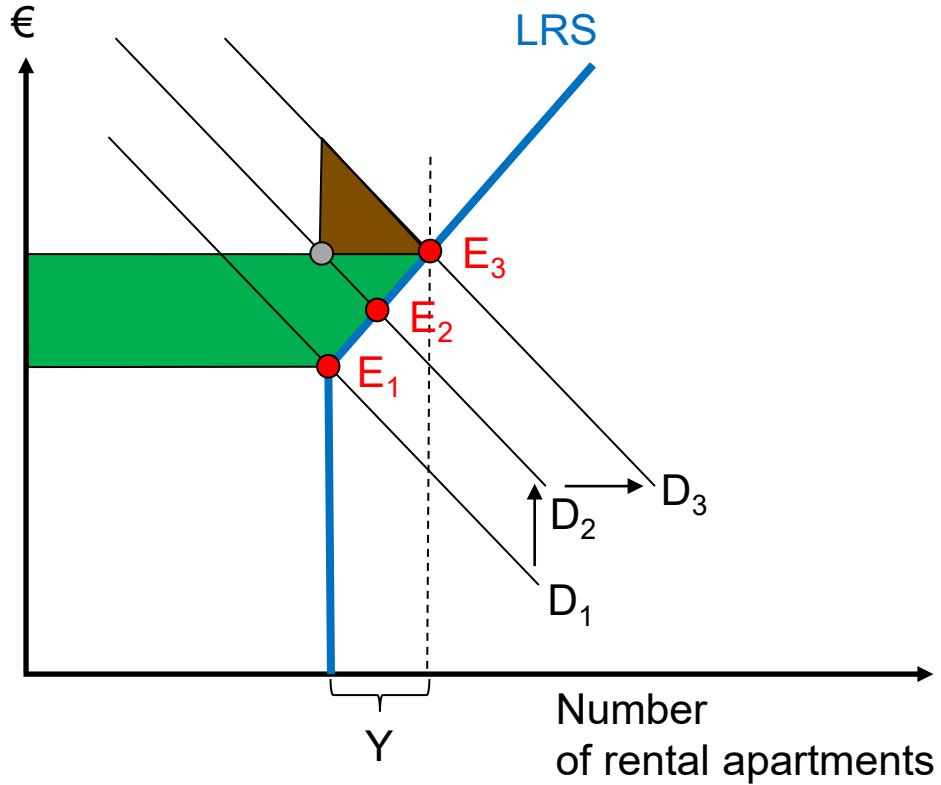


- Initial equilibrium in  $E_1$
- The long-run supply curve (**LRS**) runs vertically
- The marginal willingness to pay by tenants already living in inner cities increases (from  $D_1$  to  $D_2$ ): new equilibrium in  $E_2$
- From the suburbs, new tenants move into the city centre. Demand rises again (from  $D_2$  to  $D_3$ ): new equilibrium in  $E_3$
- $X$  old tenants are being displaced
- Landlords' producer rent rises by green area
- Tenants see no increase in welfare
- Some old tenants are worse off
- The market does not react in the quantity dimension, but only in the price dimension



# The Overregulated Market for Apartments

*What happens if air quality in the inner cities increases significantly?*

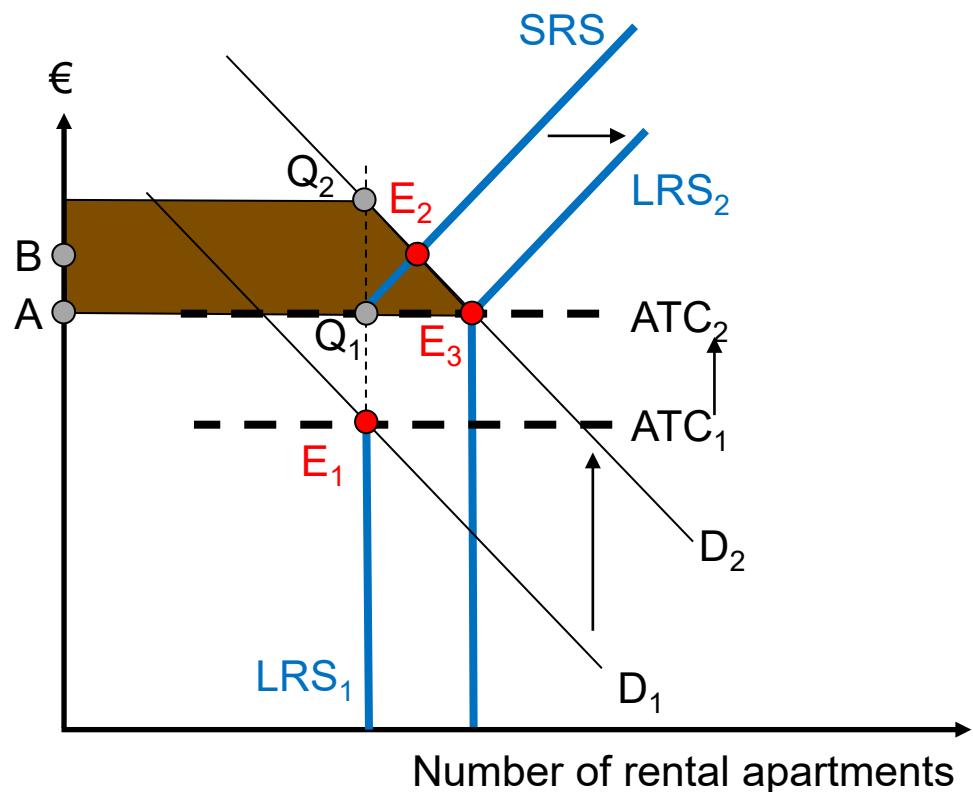


- Initial equilibrium in E<sub>1</sub>
- The long-run supply curve (LRS) has a vertical and a positively inclined section
- The marginal willingness to pay by tenants already living in inner cities increases (from D<sub>1</sub> to D<sub>2</sub>): new equilibrium in E<sub>2</sub>
- From the suburbs, new tenants move into the city centre. Demand rises again (from D<sub>2</sub> to D<sub>3</sub>): new equilibrium in E<sub>3</sub>
- Y old tenants are being displaced
- Landlords' producer rent rises by green area
- Tenants' consumer rent rises by the brown triangle
- Combined price and quantity response



# Rental Price Control for Quality Apartments (I)

We assume that the minimum average total cost of building an apartment is  $ATC_1$ . By providing voluntary services and improved equipment, landlords can generate added value.



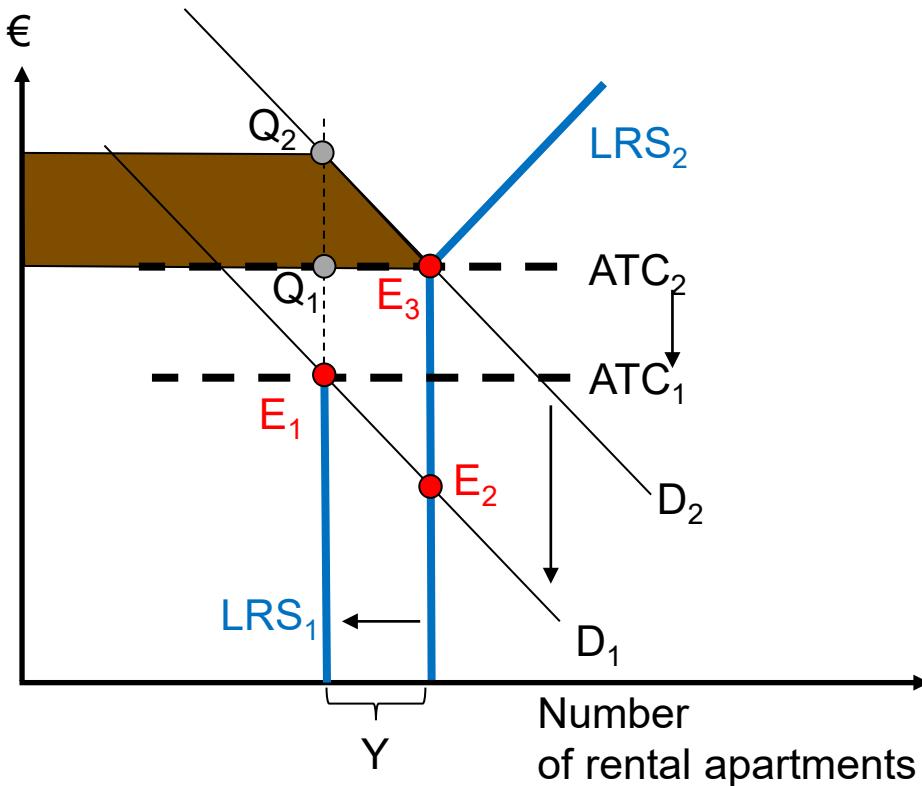
- Initial equilibrium in  $E_1$
- Investments in equipment increase the minimum of average total cost from  $ATC_1$  to  $ATC_2$
- The short-run supply curve (SRS) starts in point  $Q_1$
- The demand curve shifts from  $D_1$  to  $D_2$
- Added value created for the marginal apartment corresponds to  $Q_2 - Q_1$
- Short-term equilibrium in  $E_2$
- The landlords' producer rent corresponds to area  $\overline{ABE}_2Q_1$
- Due to profits, supply increases further
- Long-term equilibrium in  $E_3$
- The producer's rent is again zero
- In the long term, consumer rent grows by the brown area due to better housing quality.



# Rental Price Control for Quality Apartments (II)

What happens if a maximum rent is introduced by law that corresponds to the average cost of  $ATC_1$ ?

Source: McKenzie, R. B.; Lee, D. R. (2018). How economists understate the damage from rent controls, in: Regulation, 41(4), pp. 22-27.



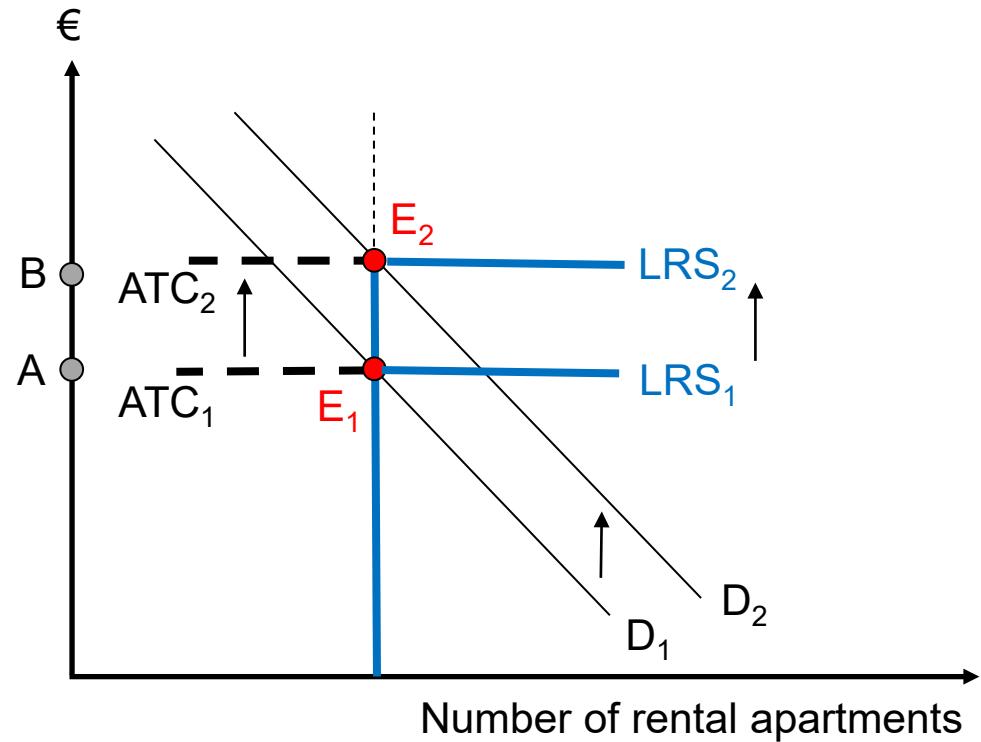
- Initial equilibrium in  $E_3$
- Suppliers respond with declining quality (and falling average costs), from  $ATC_2$  to  $ATC_1$
- The demand curve shifts from  $D_2$  to  $D_1$
- Short-term equilibrium in  $E_2$
- Suppliers suffer from losses
- Long-run supply decreases (by  $Y$ ) to  $LRS_1$
- Long-term equilibrium in  $E_1$
- The producer's rent is zero.
- In the long run, tenants lose their consumer rent, the brown area
- The housing market has shrunk by  $Y$  (by demolition or by redesignating apartments away from the rental market)
- Caution: Intervention spirals!



# Rental Price Control for Quality Apartments (III)

What happens if a maximum rent is introduced by law that corresponds to the average cost of  $ATC_1$ ?

Let us consider the extreme case of a perfectly competitive market.



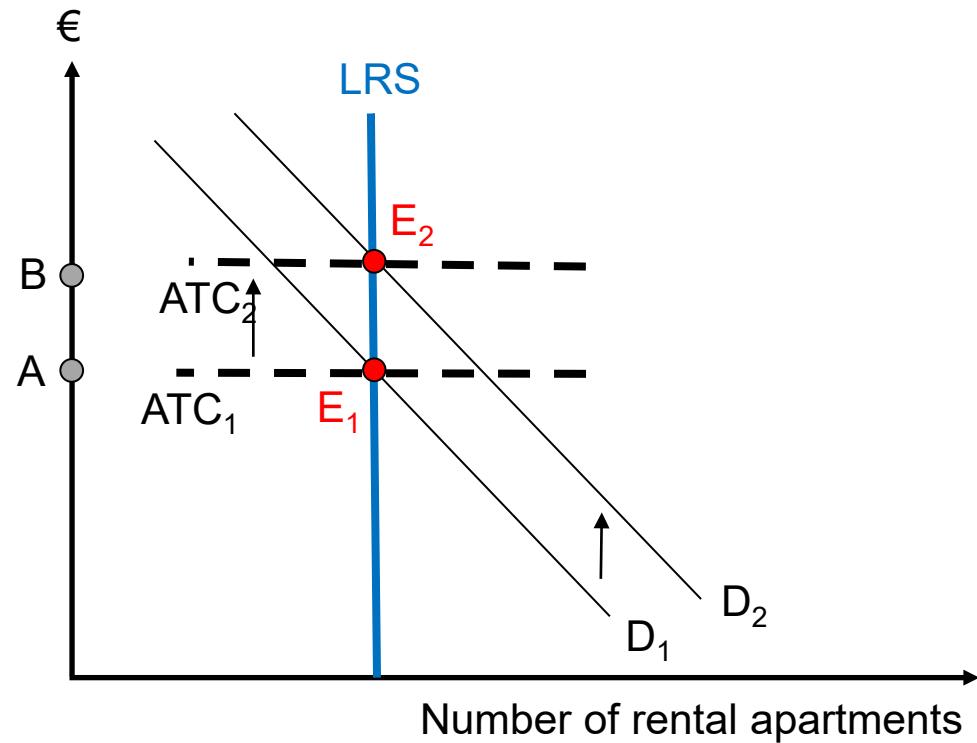
- Initial equilibrium in  $E_1$
- Investments in equipment increase the minimum of average total cost from  $ATC_1$  to  $ATC_2$
- The long-term supply curve shifts upwards from  $LRS_1$  to  $LRS_2$
- The demand curve shifts from  $D_1$  to  $D_2$
- New equilibrium in  $E_2$
- Rental price control reverses this development
- New equilibrium back in  $E_1$
- The rental price goes down, but the quality of the apartments also goes down
- Logic: Joint product!



# Rental Price Control for Quality Apartments (IV)

*What happens if a maximum rent is introduced by law that corresponds to the average cost of  $ATC_1$ ?*

*Let us consider the extreme case of a strangulated market.*

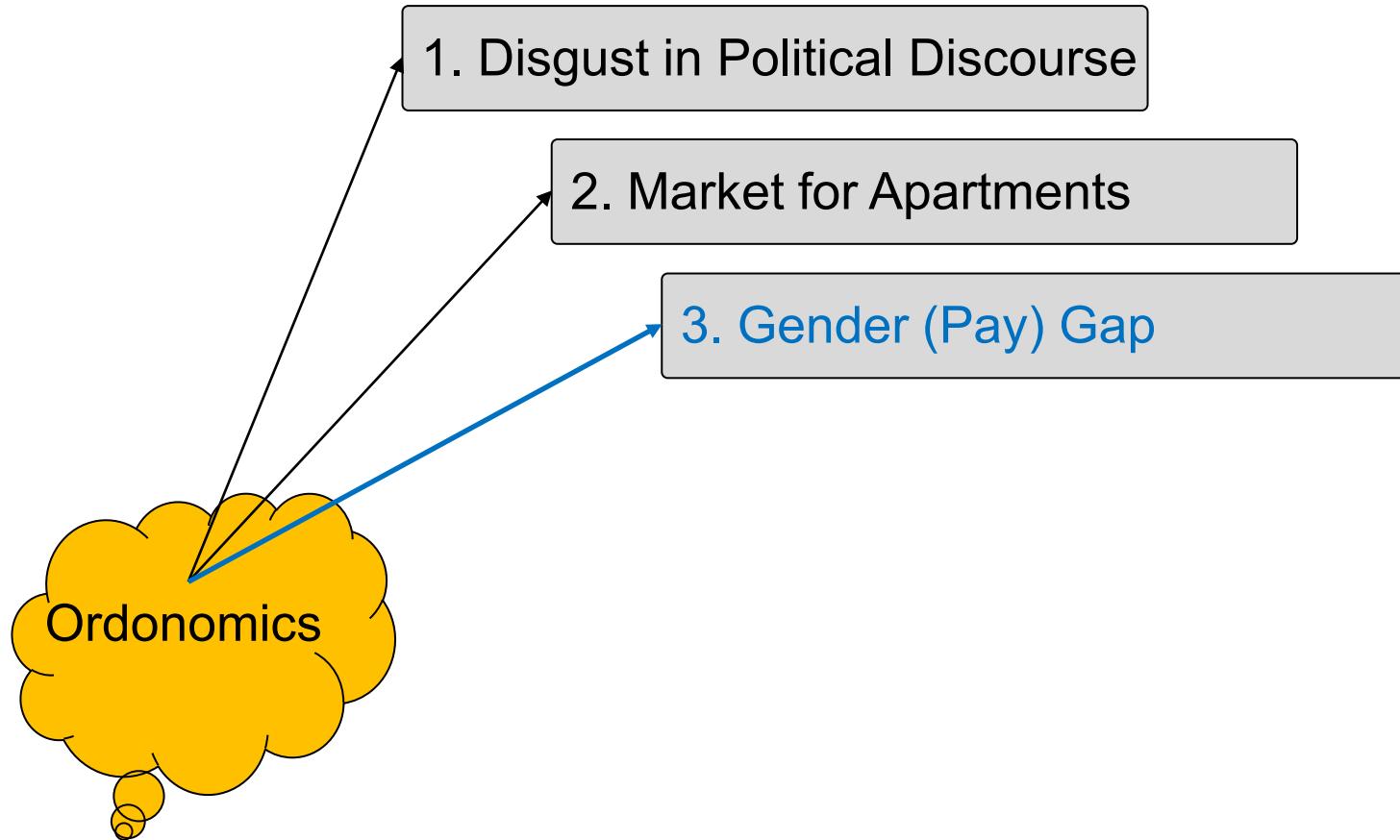


- Initial equilibrium in  $E_1$
- Investments in equipment increase the minimum of average total cost from  $ATC_1$  to  $ATC_2$
- The long-run supply curve LRS remains vertical
- The demand curve shifts from  $D_1$  to  $D_2$
- New equilibrium in  $E_2$
- Rental price control reverses this development
- New equilibrium back in  $E_1$
- The rental price goes down, but the quality of the apartments also goes down
- Logic: Joint product!



# Sketches

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# Gender Pay Gap: Men earn (on average) more money than women



<https://www.bing.com/images/search?view=detailV2&ccid=9d8KboXc&id=C66EB5D68D398FDE63DF75095FFE15BA2284D1AB&thid=OIP.9d8KboXc9r6hasbhbsUZAHaHc&q=gehaltsunterschied+mann+frau+statistik&simid=608020551961741076&selectedIndex=26&qpvt=gehaltsunterschied+mann+frau+statistik>



## SPD election poster for the 2017 Bundestag election

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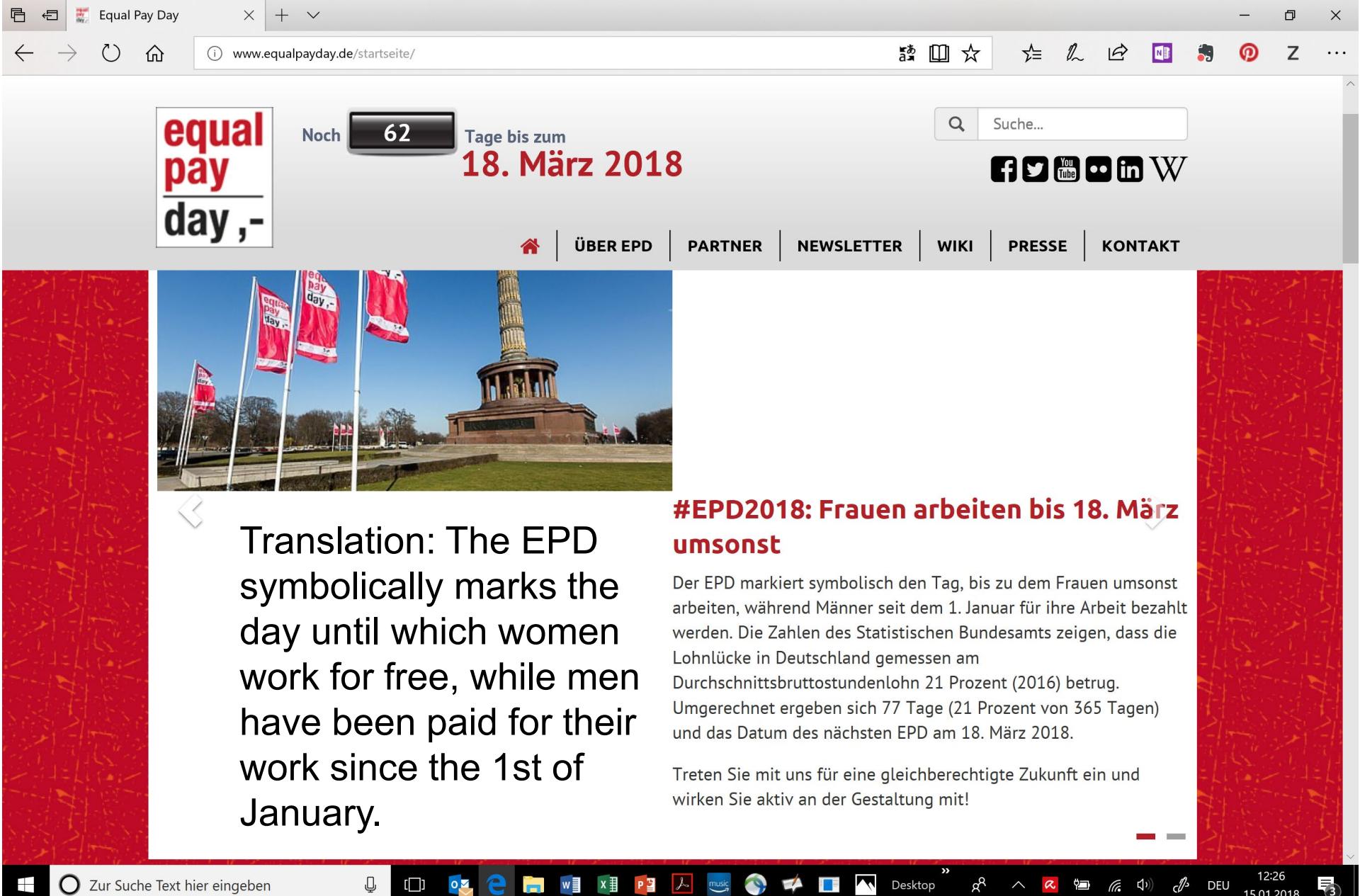


Bildquelle: <https://www.welt.de/img/debatte/kommentare/mobile168792091/4511625377-ci23x11-w960/SPD-Plakat-Wahlplakat-2017-Bundestagswa.jpg>

Translation: Those who contribute 100% must not earn 21% less



Martin-Luther-Universität Halle-Wittenberg, Lehrstuhl für Wirtschaftsethik  
Prof. Dr. Ingo Pies



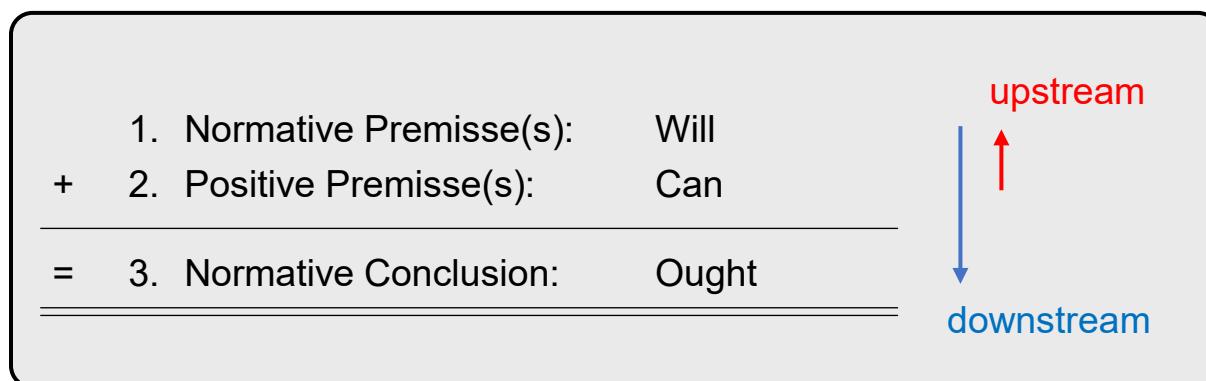
# Practical Syllogism

*The practical syllogism helps to break down moral judgments into their normative and positive elements.*

*The scientific critique of moral judgments always starts at level 2, i.e. with the positive premises. From there, two thrust directions are possible:*

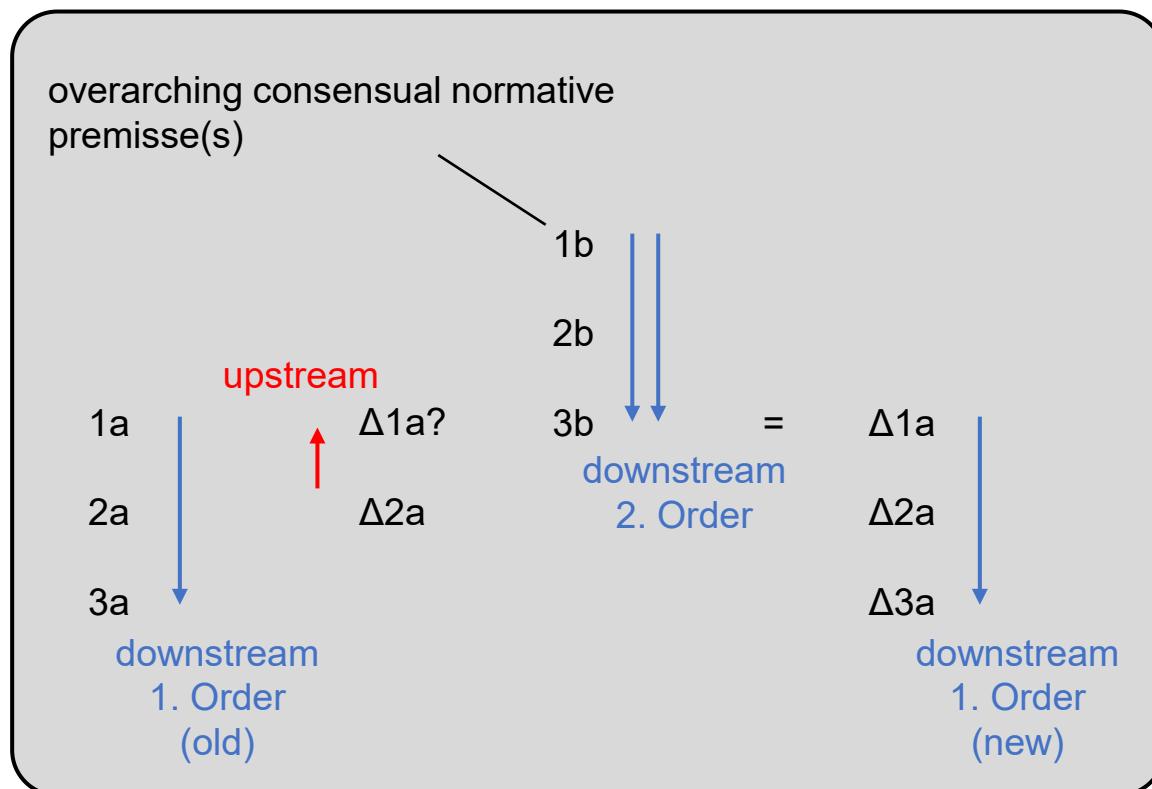
- a) *Downstream arguments target a new conclusion from top to bottom.*
- b) *Upstream arguments aim from bottom to top for a new normative premiss.*

*It is crucial for ethics – and its scientific seriousness – that it relies on facts – and on the theoretic connections between facts – in order to criticize moral judgments constructively.*



# Upstream and Downstream Arguments

Recurring on positive insights, upstream arguments question whether the normative premiss is really appropriate for the problem situation of moral judgment. This may give rise to a search for second-order downstream arguments that replace the original normative premise with reasonable justification, and then formulate first-order downstream arguments that correct and even normatively surpass the original moral judgment.



# Strawmanning versus Steelmanning

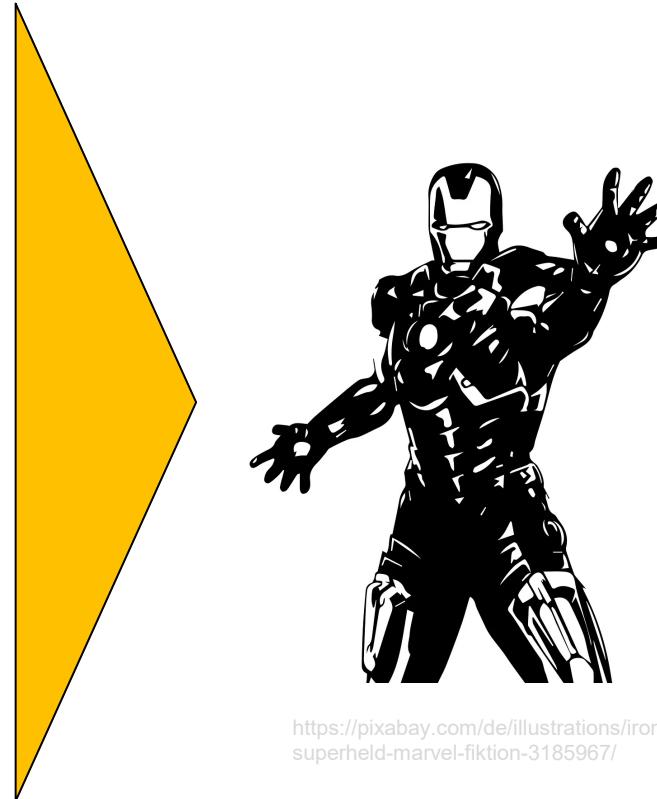
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*Strawmanning: Make the counter-argument as **weak** as possible.*

*Steelmanning: Make the counter-argument as **strong** as possible.*



<https://pixabay.com/de/vectors/vogelscheuche-bauernhof-silhouette-5126665/>



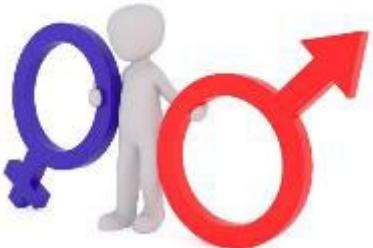
<https://pixabay.com/de/illustrations/iron-man-superheld-marvel-fiktion-3185967/>



# Gender Pay Gap – Downstream 1st Order

*In Germany, the gender pay gap is around 21%. On average, the group of women earns less than the group of men. In public, this is often interpreted as discrimination, which must be stopped by state intervention.*

*The practical syllogism helps us in “steelmanning” this argument.*



Argument for intervention:

- 1a. It is a moral concern that men and women earn the same amount.
- 2a. The statistically identified gender pay gap shows that men and women do not earn the same amount and suggests discrimination.
- 3a. The state should intervene and align the pay structure between the sexes.

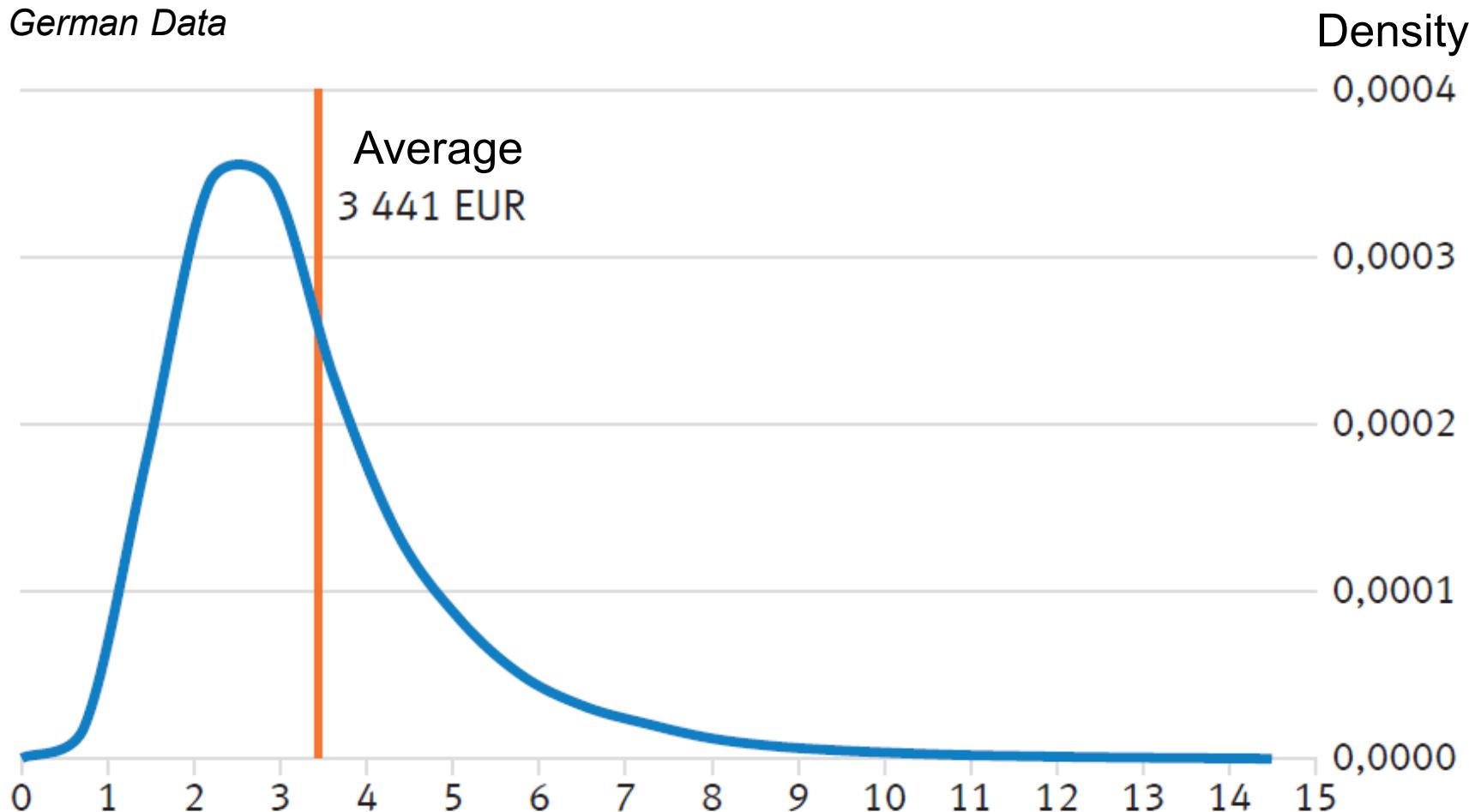


How is it possible to develop a sound criticism of this argument?  
What do we need to know?



# Gross Monthly Earnings of Full-Time Employees in 2014 (in Thousand €)

German Data



Quelle: Statistisches Bundesamt (2017): Verdienste auf einen Blick, S. 6

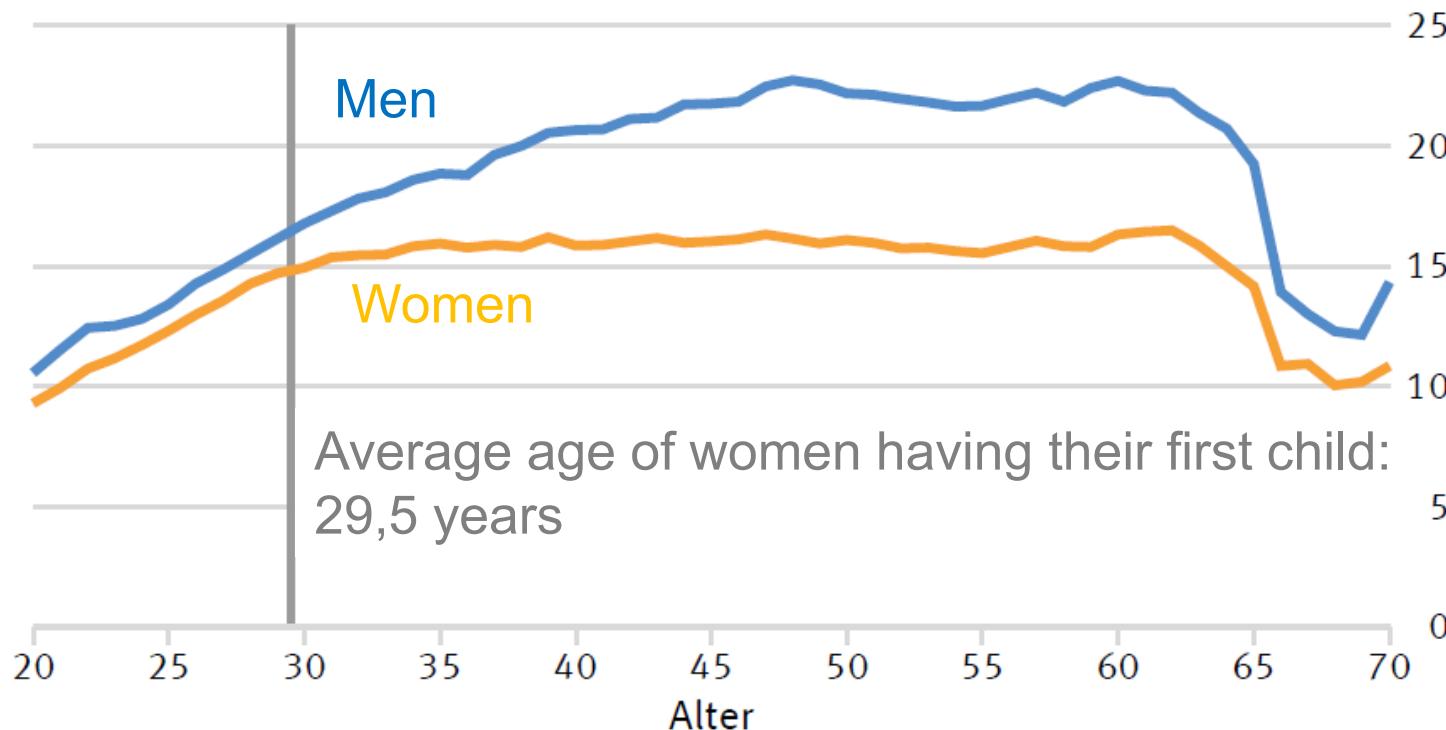


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Prof. Dr. Ingo Pies

# Average Gross Earnings with Regard to Gender and Age in 2014

German Data

in EUR



Ohne Auszubildende.

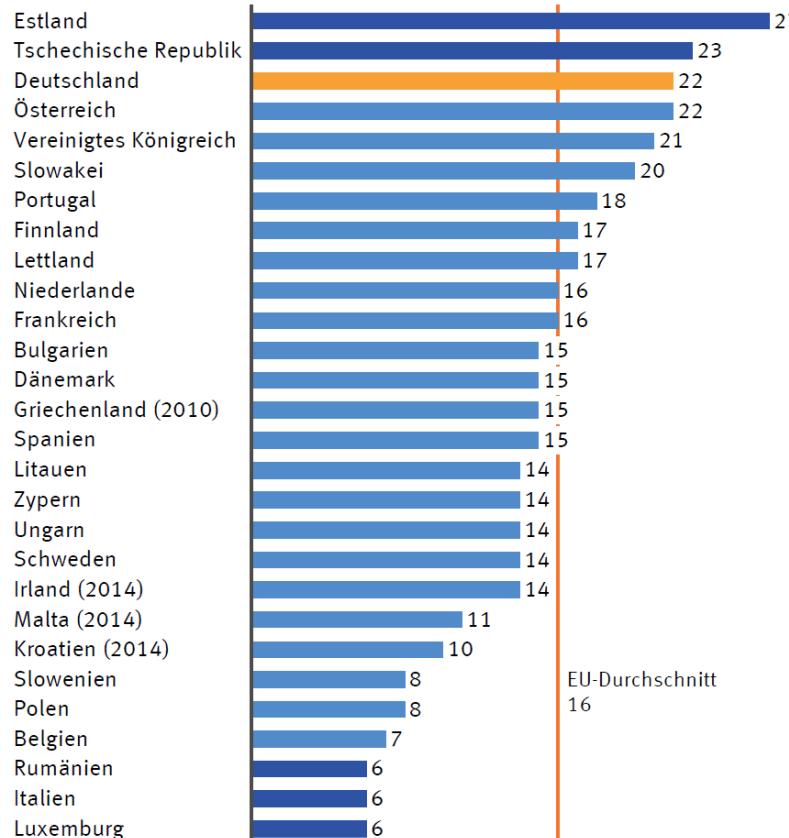


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Prof. Dr. Ingo Pies

# Adjusted Gender Pay Gap in Germany

Source: Statistisches Bundesamt (2017): Verdienste auf einen Blick

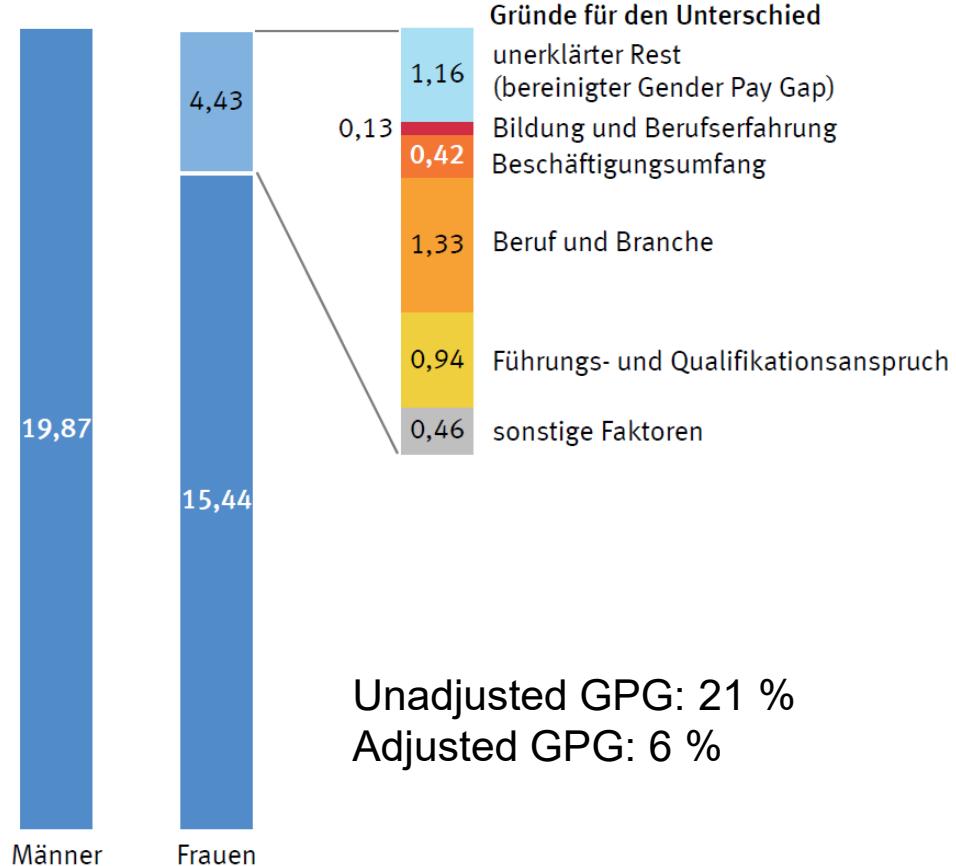
## Unadjusted Gender Pay Gap 2015 in %



Keine aktuellen Angaben für Griechenland, Irland, Malta und Kroatien verfügbar.

## Adjusting the Gender Pay Gap in 2014

Bruttostundenverdienst in EUR

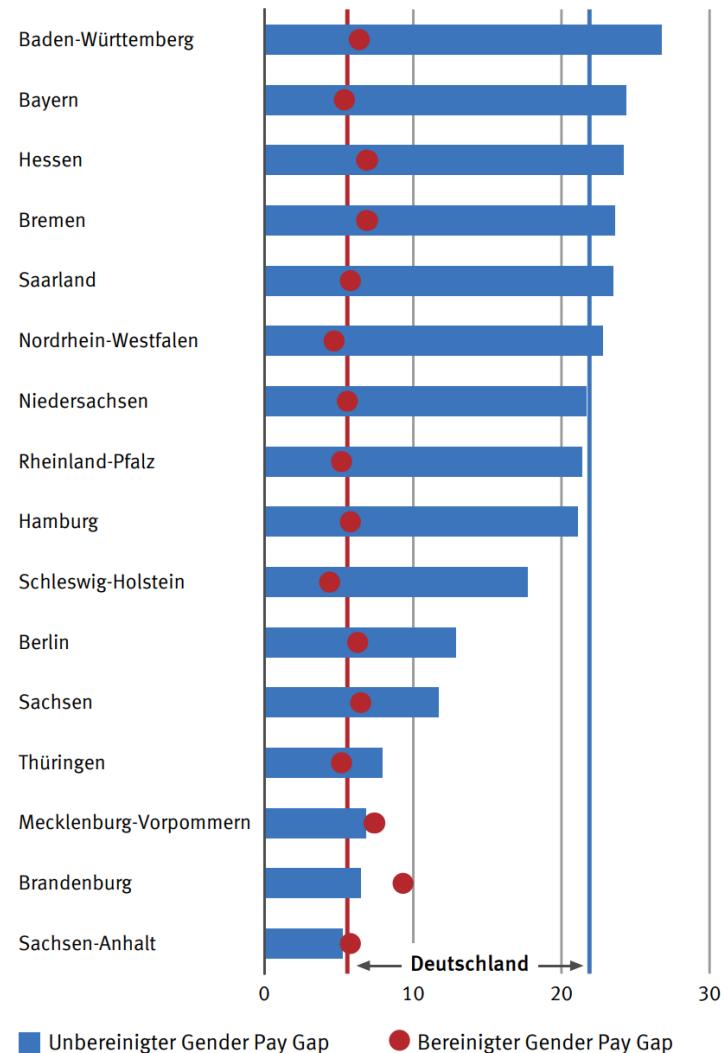


# Beck (2018) with Data from 2014

Finke et al. write about the adjusted gender pay gap (2017; p. 55, emphasis by I.P.):

"As early as the first study on the adjusted gender pay gap based on the 2006 Earnings Structure Survey, it was ... expressly pointed out that the empirically determined 8% figure is more of an "upper limit" of the extent of wage discrimination, since **not all wage determinative variables can be included in the model calculation** (Finke, 2010, here: page 10). For example, the Earnings Structure Survey does not provide information on **individual behaviour in wage negotiations, marital status or actual professional experience**, as these have not been provided for by the national and EU legislators as survey characteristics."

Gender Pay Gap nach Bundesländern, absteigend sortiert nach unbereinigtem Gender Pay Gap in %



Ergebnisse der Verdienststrukturerhebung 2014. – Alle Beschäftigte.



# Believe it or Not

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The adjusted gender pay gap takes into account

- Amount of employment (part-time / full-time)
- Training status
- Industry choice
- Career choice
- Age and **potential** work experience



The adjusted gender pay gap does **not** include:

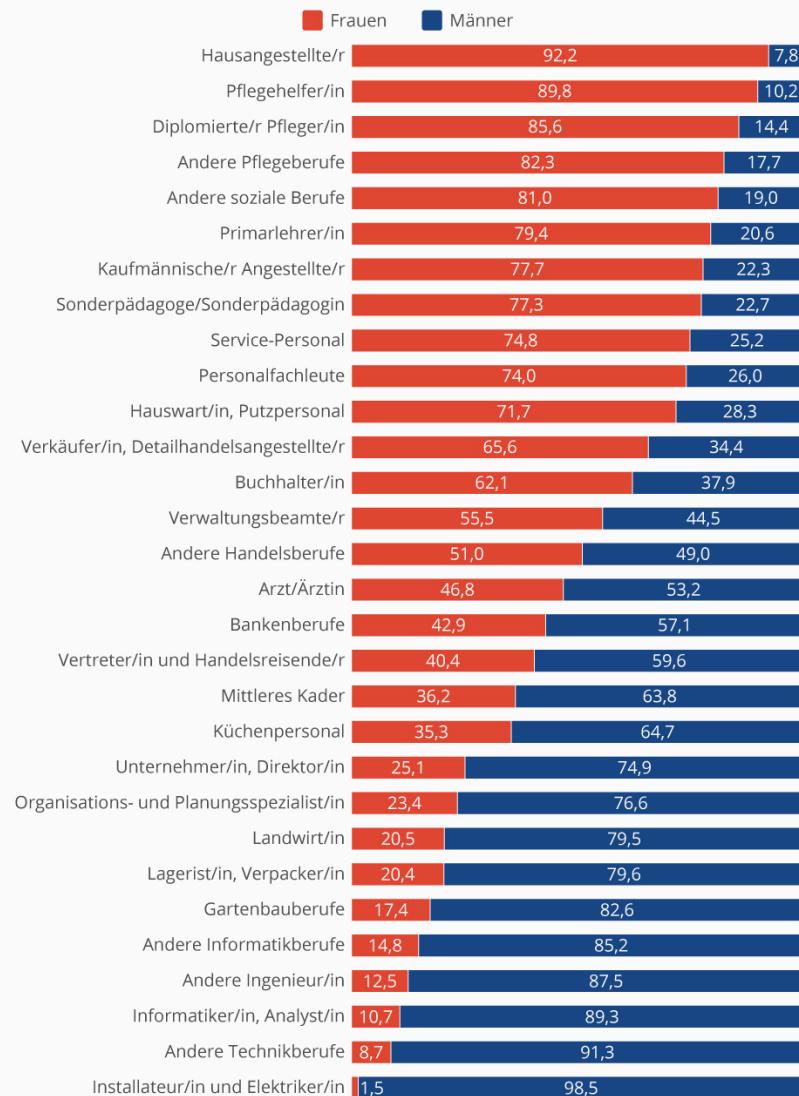
- Marital status
- **Actual** professional experience

Caution! – We must not compare apples with oranges.



# Gender Equality in der Schweizer Arbeitswelt

Die verbreitetsten Berufsbranchen nach Geschlechteranteil in der Schweiz 2016 (in Prozent)



The general pattern in countries with free labour markets is that

- most **women** prefer jobs with social contacts to other people,
- while most **men** prefer technological jobs.



Quelle: SWI via Bundesamt für Statistik Schweiz

statista



# The Most Often Chosen Occupations: Germany 2016 (in thousand)

## Men

1	Maschinenbau- und Betriebstechnik	1 388
2	Lagerwirtschaft, Post, Zustellung, Güterumschlag	1 086
3	Unternehmensorganisation und -strategie	1 048
4	Fahrzeugführung im Straßenverkehr	920
5	Elektrotechnik	596
6	Fahrzeug-, Luft-, Raumfahrt-, Schiffbautechnik	571
7	Metallbearbeitung	502
8	Geschäftsführung und Vorstand	493
9	Verkauf (ohne Produktspezialisierung)	487
10	Hochbau	481

## Women

1	Büro und Sekretariat	1 550
2	Erziehung, Sozialarbeit, Heilerziehungspflege	1 272
3	Verkauf (ohne Produktspezialisierung)	1 218
4	Unternehmensorganisation und -strategie	1 197
5	Reinigung	1 001
6	Verwaltung	897
7	Gesundheit, Krankenpflege, Rettungsdienst, Geburtshilfe	884
8	Arzt- und Praxishilfe	672
9	Lehrtätigkeit an allgemeinbildenden Schulen	603
10	Altenpflege	546

Ergebnisse des Mikrozensus.

The general pattern in countries with free labour markets is that

- most **women** prefer jobs with social contacts to other people,
- while most **men** prefer technological jobs.

Quelle: Destatis und WZB (2018): Datenreport 2018, Tab. 2, S. 154  
[https://www.destatis.de/DE/Service/Statistik-Campus/Datenreport/Downloads/datenreport-2018.pdf?\\_\\_blob=publicationFile&v=4](https://www.destatis.de/DE/Service/Statistik-Campus/Datenreport/Downloads/datenreport-2018.pdf?__blob=publicationFile&v=4)



## Further Facts ( $\Delta$ 2)

Korn Ferry (2018) analyzed data for 12.3 million employees in 14,284 companies in 53 countries. Here is their assessment (emphasis by I.P.):



„When comparing pay between genders overall, the study found that globally, **men are paid on average considerably more (16.1 percent) than women**, which is in line with other research on the subject.

However, the Korn Ferry Gender Pay Index found that, when evaluating the same job level, such as director, **the gap fell to 5.3 percent globally**. When considering the same level at the same company, the gap further reduced to **1.5 percent**. And when the male and female employees were at the same job level and the same company and worked in the same function, the **average gap amounted to 0.5 percent**.“

Source: <https://www.kornferry.com/about-us/press/korn-ferry-global-gender-pay-index-analyzes-reasons-behind-inequalities-in-male-and-female-pay>



## The Facts ( $\Delta$ 2)

*Gender gap and gender pay gap do not prove discrimination, but suggest preference differences between women and men. This means that large parts of observed inequality are due to voluntary self-selection.*

2018 Gender Pay Gap for: US

Germany

China

Brazil

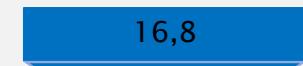
Overall Gap



Same Level



16,8



Same Level,  
Same Company



4,3



Same Level,  
Same Company, Same Function



3,2



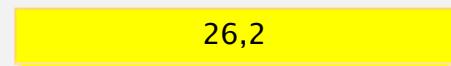
12,7



5,8



0,3



15



5,5



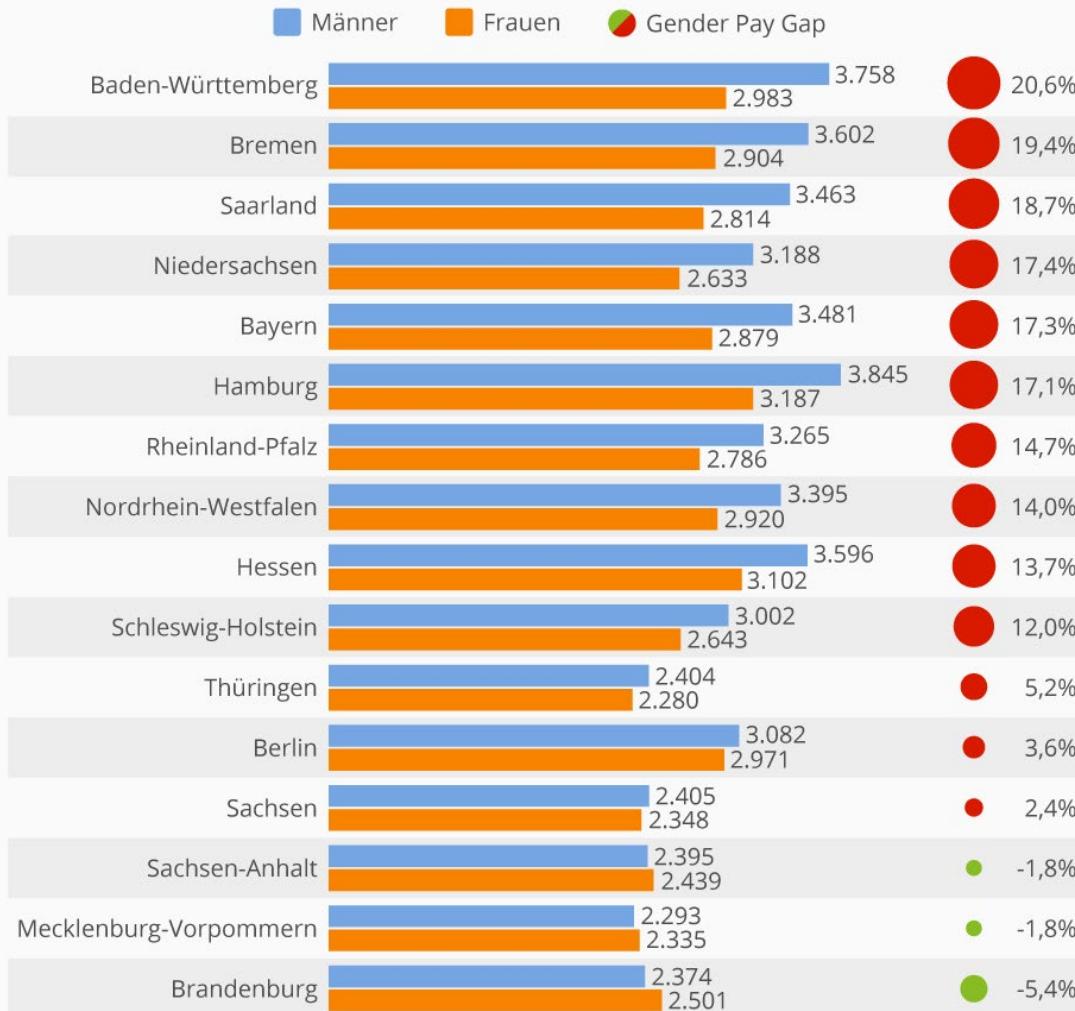
Basis: 12.3 million employees in 14,284 companies in 53 countries

Again: This data analysis does **not** include gender differences in years of actual job experience. But the logic is clear: The closer you look, the smaller is the gender pay gap.



# Gender Pay Gaps by Region

Bruttoarbeitsentgelte von sozialversicherungspflichtig Vollzeitbeschäftigte (in €/Monat)\*



\* Medianwerte; Stichtag: 31.12.2016

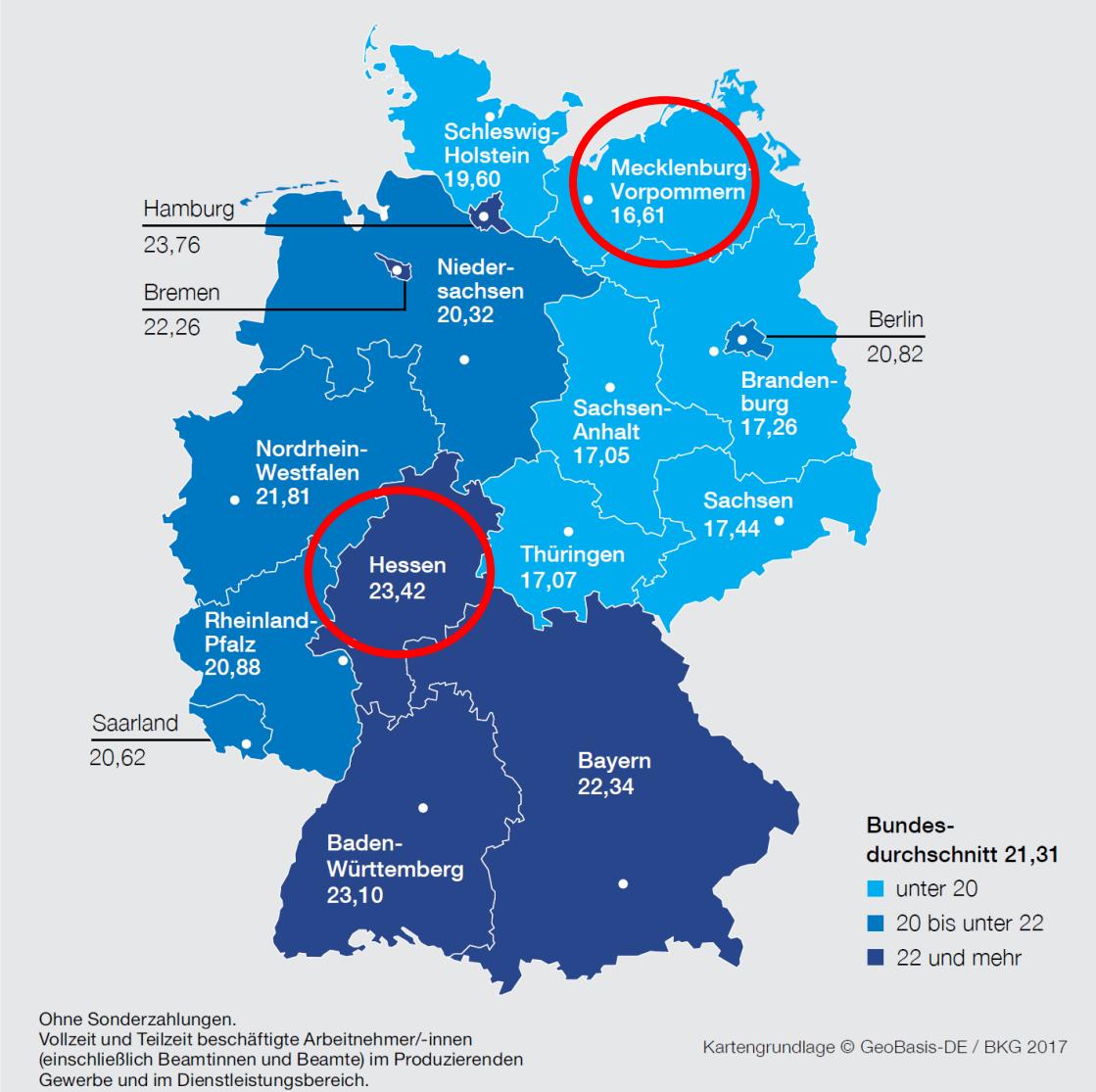
Quelle: IAB

statista



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Prof. Dr. Ingo Pies

# Average gross hourly earnings 2017 in €



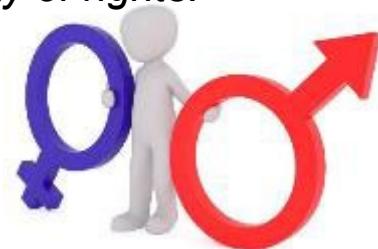
The **Regional Pay Gap** between Mecklenburg-Western Pomerania and Hesse is

$$\frac{23,42 - 16,61}{23,42} = 29\%$$



# Gender Pay Gap – Upstream Argument

*In view of these facts ( $\Delta 2a$ ), we begin by questioning whether the original normative premiss (1a) in the argument for intervention is really appropriate for the problem at hand. We thus draw attention to the categorical distinction between pay equity and equality of rights.*



## Argument for intervention:

- 1a. It is a moral concern that men and women earn the same amount of money.
- 2a. The statistically identified gender pay gap shows that men and women do not earn the same amount of money. This suggests discrimination.
- 3a. The state should intervene and align the pay structure between the sexes.

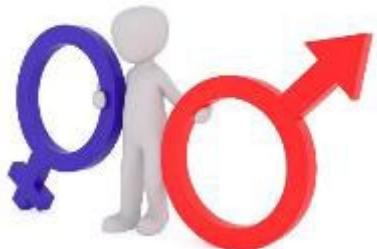
## Upstream-Argument:

- $\Delta 1a$ ? Is it really appropriate to designate as a morally desirable goal that men and women (each considered as a group) should earn the same amount of money?
- $\Delta 2a$ . **The adjusted gender pay gap does not prove discrimination. Rather, it reflects different preferences between men and women.**



# Gender Pay Gap – Downstream 2nd Order

The upstream argument calls into question premiss 1a. The second-order downstream argument starts from a new normative premiss (1b) and concludes (3b) that the first-order syllogism requires a new normative premiss ( $\Delta 1a$ ). In fact, we substitute equality of rights for pay equity.



## Upstream-Argument:

- $\Delta 1a$ ? Is it really appropriate to designate as a morally desirable goal that men and women (each considered as a group) should earn the same amount of money?
- $\Delta 2a$ . The adjusted gender pay gap does not prove discrimination. Rather, it reflects different preferences between men and women.

## 2nd Order Downstream Argument (Argument for equal rights):

- 1b. It is a moral concern that men and women should be treated equally (= equality of rights).
- 2b. Equality of rights includes being able to live out one's individual preferences. However, different preferences inevitably lead to different pay structures.
- 3b. The postulate that men and women (each as a group) should earn the same amount of money makes no sense. It is contrary to the moral principle of equality of rights. In the conflict between equal pay and equal rights, equality of rights is a moral priority.



# Gender Pay Gap – The Interplay of 1st and 2nd Order Arguments

The 2nd order argument suggests a new normative premiss ( $3b \rightarrow \Delta 1a$ ). Based on this, the new 1st order downstream argument derives a new conclusion ( $\Delta 3a$ ).

## 2nd Order Downstream Argument (Argument for equal rights):

- 1b. It is a moral concern that men and women should be treated equally (= equality of rights).
- 2b. Equality of rights includes being able to live out one's individual preferences. However, different preferences inevitably lead to different pay structures.
- 3b. The postulate that men and women (each as a group) should earn the same amount of money makes no sense. It is contrary to the moral principle of equality of rights. In the conflict between equal pay and equal rights, equality of rights is a moral priority.



## 1st Order Downstream Argument (Argument *against* intervention):

- $\Delta 1a$ . The moral concern is not to pay men and women (each considered as a group) equally, but to treat them equally.
- $\Delta 2a$ . The adjusted gender pay gap does not prove discrimination. Instead, it reflects different preferences between men and women.
- $\Delta 3a$ . The state should promote equal rights of men and women, but not intervene in pay structures.



# Ordonomic Assessment

*The gender gap and the gender pay gap give rise to false alarms that can lead to discourse failures. This does not mean, however, that there are no sensible measures to promote equality between women and men.*

The norm that companies have to pay men and women equally for comparable activities is already enshrined in law in many countries. However, there are many additional measures that could be taken to improve the collective conditions for men and women to actually live out their preferences. We confine ourselves to four points:

- Firstly, pay equity suffers from a confusion of ends and means. If you really want to serve women's interest, you should not exert pressure on them to choose jobs they do not like. The same is true for men. Instead, encourage them to jobs they like and accept market wages that reflect scarcities.
- Secondly, much remains to be done to better reconcile family and professional life, for example with regard to provision for qualified childcare.
- Thirdly, German tax law could be redesigned, especially with regard to spousal splitting. In its current form, tax law promotes traditional patterns of gender division of labour: if there is a pay gap between men and women, men receive a stronger incentive and women a weaker incentive for additional work.
- Fourthly, it is a mistake to impose the costs of family policies on companies instead of letting them be borne by the taxpayer. Ultimately, this leads to the disadvantage of young women (and men!).



# Germany's Federal Government's Gender Equality Strategy

## Source:

<https://www.gleichstellungsstrategie.de/blob/158290/6bf6344f5b8a6c1eb7b8ac7b2ca32a1a/flyer-englisch-data.pdf>

## Nine goals for more gender equality – and how they can be reached

With its gender equality strategy, the federal government aims to make Germany considerably stronger. Economic and social progress can only be sustainable by having policies in place that equally benefit women and men.

The federal government wants women and men to be able to live off their work equally well – both caring for those who need to be cared for. They should jointly share responsibility in the economy, democracy, culture and science of our country.

Gender equality is anywhere. Therefore, the federal government has stated nine goals for the different social sectors in its gender equality strategy and indicates which specific measures need to be taken for these goals to be reached.



► For equal participation in economy and society

► For equal participation in politics and public administration

► For further details, please visit:  
[www.gleichstellungsstrategie.de](http://www.gleichstellungsstrategie.de)

Everyone benefits!

► Ensuring economic independence for everyone

Career in care

► Establishing care professions as attractive career paths

Fit for the future

► Setting standards for the digital world

Dare to share

► Making paid work and unpaid care work reconcilable

Cracking the ceiling

► Bringing more women into economic leadership positions

A good choice

► Establishing equal participation in democracy

Ever-present and ever influencing

► Eliminating stereotypes in culture and science

Leading the way

► Strengthening gender equality in public administration

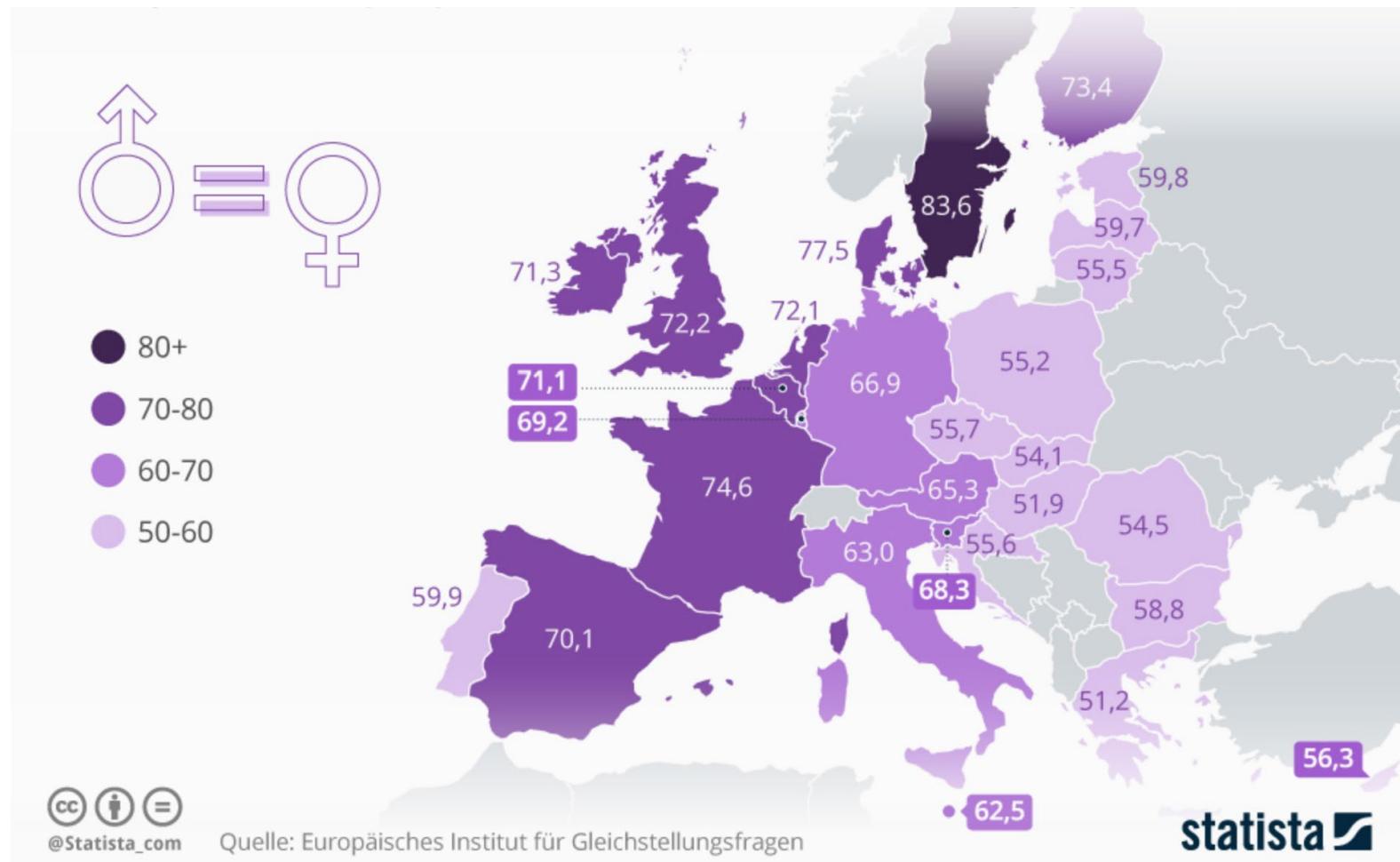
All together

► Making gender equality a task for the entire government



# **Gender Equality in the European Union**

## **Gender Equality Index 2019 – (100 = full emancipation)**



# Sources for more Information on Gender Equality in Germany



<https://eige.europa.eu/gender-equality-index/2019>



<https://www.bmfsfj.de/blob/158356/b500f2b30b7bac2fc1446d223d0a3e19/gleichstellungsstrategie-der-bundesregierung-data.pdf>



Martin-Luther-Universität Halle-Wittenberg, Lehrstuhl für Wirtschaftsethik  
Prof. Dr. Ingo Pies

# Appendix: Further Thoughts on Gender (Pay) Gaps

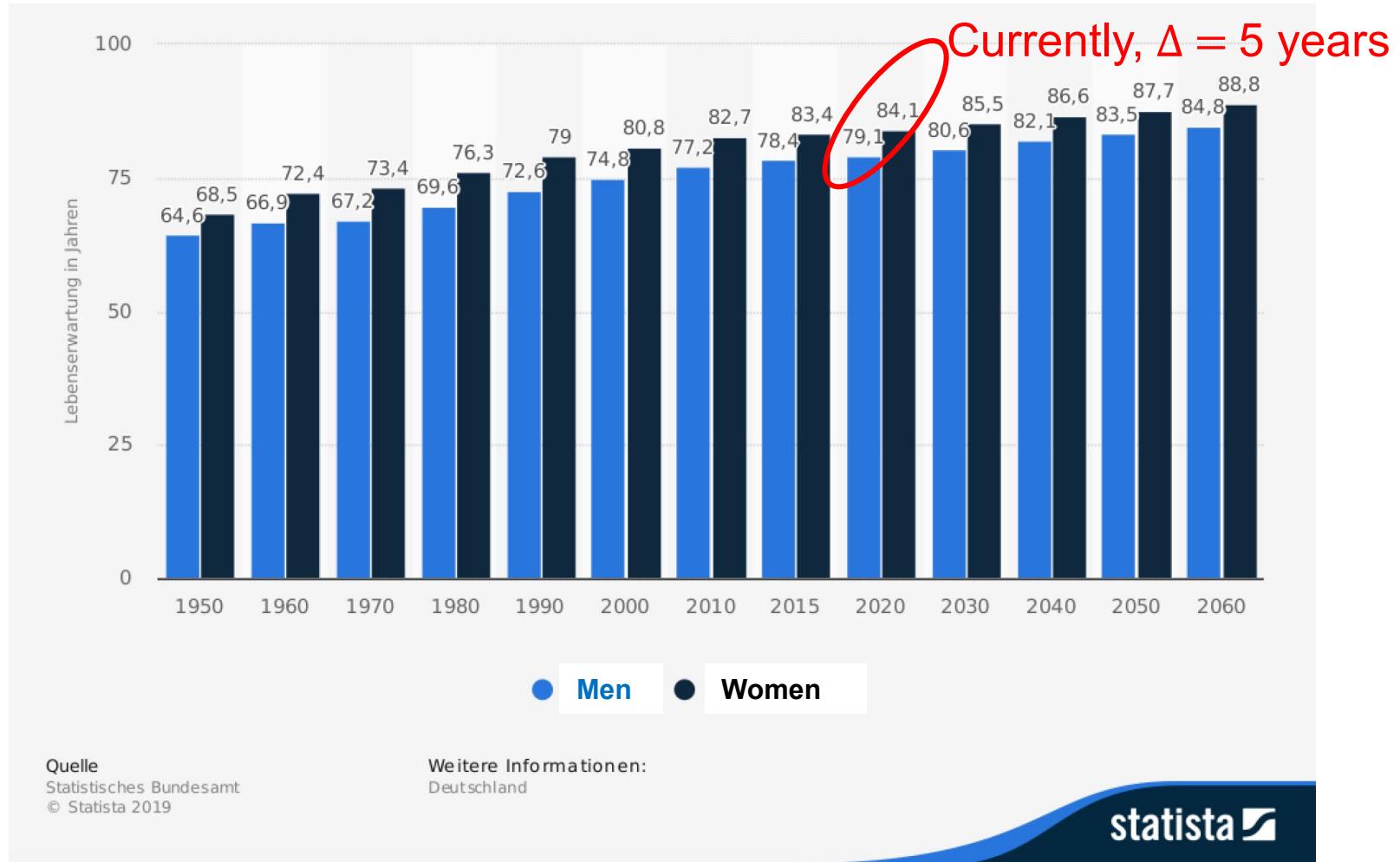
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Martin-Luther-Universität Halle-Wittenberg, Lehrstuhl für Wirtschaftsethik  
Prof. Dr. Ingo Pies

# There is a Persistent Gender Gap with Regard to Longevity

Germany: Life expectancy at birth for **men** and **women**: What does that mean for our pension systems?



Quelle

Statistisches Bundesamt  
© Statista 2019

Weitere Informationen:  
Deutschland

statista



# ILO (2018): Global Wage Report

*In its Global Wage Report, the International Labour Organization (ILO) reflects on the reasons for the gender pay gap (emphasis by I.P.): Please make up your own mind! (Hint: By which criterion do they identify (under-)valuation in market wages?)*



ILO (2018; p. 88 f.):

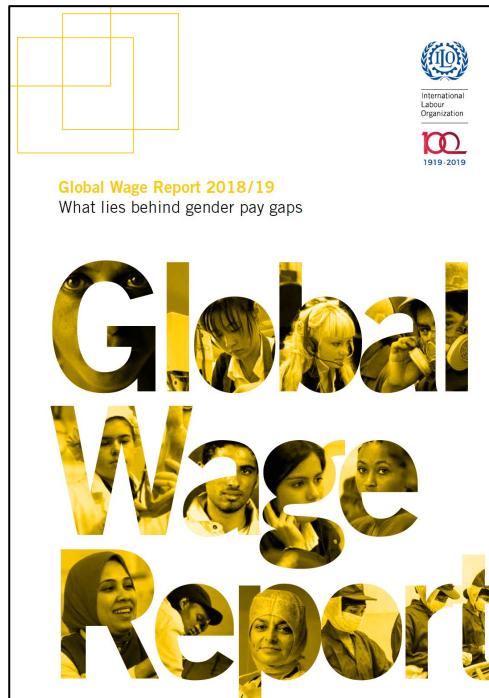
- „In some countries, the gender pay gap may be larger at the top of the distribution, as in many high-income countries, whereas in others it may be larger in the middle or at the bottom of the distribution, as in many low- and middle-income countries.“
- „Furthermore, the gender pay gap in different parts of the wage distribution may generally be due to differences in observable labour market attributes, such as lower levels of education for women, or they may be due to unexplained differences in returns for these attributes, **the undervaluation of women's work in highly feminized occupations or enterprises, reduced or stagnant wages for women who are mothers**, or quite simply lower pay for women than for men in spite of equal work or work of equal value in the same enterprise.“

ILO (2018):  
[file:///C:/Users/ingop/OneDrive/Dokumente/Arbeitsmaterial/Gender%20Pay%20Gap/ILO%20\(2018\)%20Global%20Wage%20Report.pdf](file:///C:/Users/ingop/OneDrive/Dokumente/Arbeitsmaterial/Gender%20Pay%20Gap/ILO%20(2018)%20Global%20Wage%20Report.pdf)



# ILO (2018): Global Wage Report

*In its Global Wage Report, the International Labour Organization (ILO) reflects on the “explained” part of the adjusted gender pay gap:*



ILO (2018; p. 93):

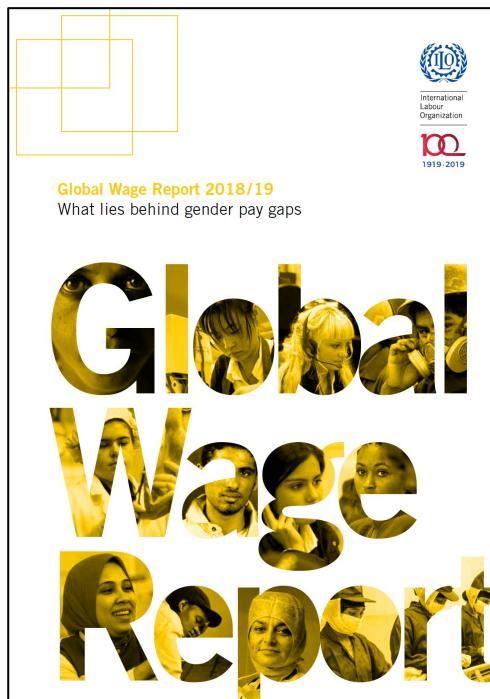
„The decomposition analysis in the report shows that part of the gender pay gap can be explained by differences in the labour market attributes of men and women, including their level of education and their choices of occupations or industries. **It is important to note that saying that part of the gender pay gap may be explained by differences in attributes does not imply that this part of the gap is “admissible”, as it may itself reflect gender inequalities in access to education or in other spheres at home and at work.**“

ILO (2018):  
file:///C:/Users/ingop/OneDrive/Dokumente/Arbeitsmaterial/Gender%20Pay%20Gap/ILO%20(2018)%20Global%20Wage%20Report.pdf



# ILO (2018): Global Wage Report

*In its Global Wage Report, the International Labour Organization (ILO) reflects on the “unexplained” part of the adjusted gender pay gap:*



ILO (2018; p. 95):

„The report shows that, for a selection of countries, returns from education are clearly lower in highly feminized occupations than in other occupations, and that average wages are lower in highly feminized enterprises than in other enterprises, even after controlling for some other characteristics. **This imbalance may be linked to the overall undervaluing of women’s work**, which “means that skill and experience in female-dominated occupations and workplaces **tend to be rewarded unfairly**” (Grimshaw and Rubery, 2015, p. vi). ... Eliminating this bias is not only a way to reduce the gender pay gap directly but also a condition for **reducing occupational segregation**, for example **by attracting more men into the education and health sectors**, and ensuring that women get a fair deal in the workplace.“

ILO (2018):  
file:///C:/Users/ingop/OneDrive/Dokumente/Arbeitsmaterial/Gender%20Pay%20Gap/ILO%20(2018)%20Global%20Wage%20Report.pdf



# ILO (2018): Global Wage Report

*In its Global Wage Report, the International Labour Organization (ILO) reflects on the gender pay gap with respect to (a) direct discrimination:*



ILO (2018; p. 95):

„In the literature, authors frequently attribute part of the unexplained gender pay gap to discrimination against women in relation to men. Such discrimination occurs when women are paid less than men for the same work or for **work of equal value**. Direct wage discrimination includes cases in which two jobs that are the same are given different titles, depending on the gender of the person who performs them, and are paid differently, with men’s occupations typically associated with higher wages than women’s. Examples include the titles of »chef« for men versus »cook« for women; or »information manager« versus »librarian«; or »management assistant« versus »secretary«.“

ILO (2018):  
file:///C:/Users/ingop/OneDrive/Dokumente/Arbeitsmaterial/Gender%20Pay%20Gap/ILO%20(2018)%20Global%20Wage%20Report.pdf



# ILO (2018): Global Wage Report

*In its Global Wage Report, the International Labour Organization (ILO) reflects on the gender pay gap with respect to (b) **indirect** discrimination:*



ILO (2018; p. 95):

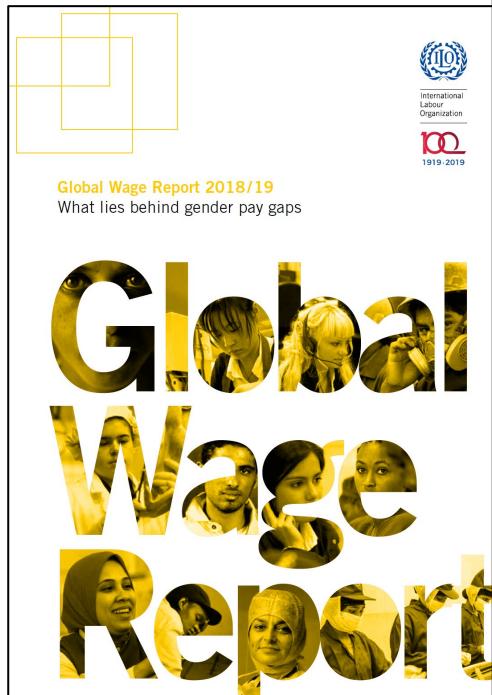
**„Injustice also occurs when women are paid less than men for work of equal value, namely work that may differ in respect of the tasks and responsibilities involved, the knowledge and skills required, the effort it entails and/or the conditions under which it is carried out, and is yet of equal worth. Indirect wage discrimination is more subtle and more difficult to detect. It may manifest itself in different structures and customary practices, including, for instance, in the way in which wages are structured and the relative weight in overall remuneration of seniority or of bonuses that reward long hours of continued presence in the workplace. In such situations, women are more likely to be penalized as a consequence of their family responsibilities.“**

ILO (2018):  
file:///C:/Users/ingop/OneDrive/Dokumente/Arbeitsmaterial/Gender%20Pay%20Gap/ILO%20(2018)%20Global%20Wage%20Report.pdf



# ILO (2018): Global Wage Report

*In its Global Wage Report, the International Labour Organization (ILO) writes about the Motherhood Pay Gap:*



ILO (2018; p. 97):

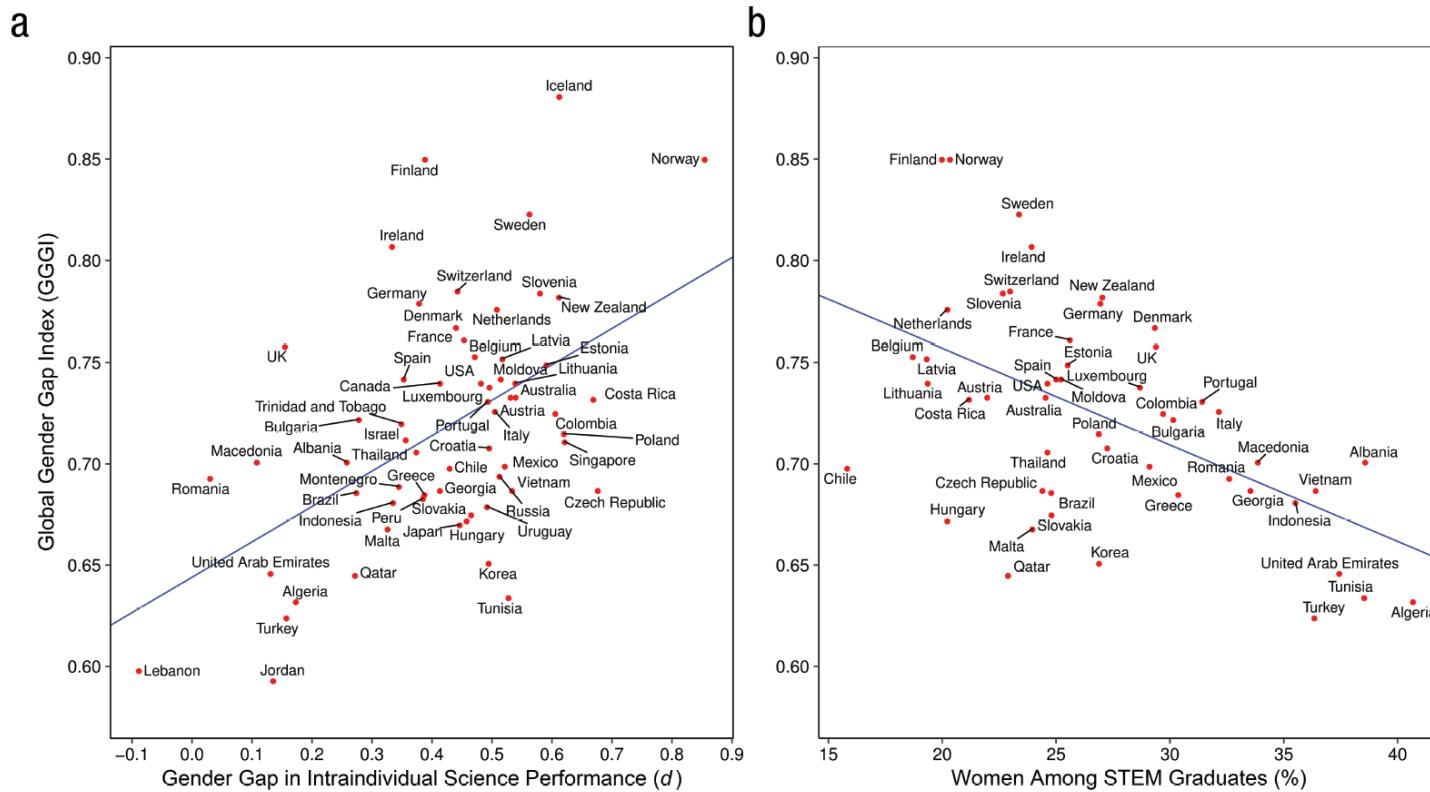
„Lower wages for mothers may be related to a host of factors, including labour market interruptions or reductions in working time; employment in more family-friendly jobs, which are lower-paying; or stereotypical hiring and promotion decisions at enterprise level which penalize the careers of mothers. It has been argued, for example, that in some countries women prefer public-sector jobs, even when they pay lower salaries, because they offer shorter and more flexible working hours. In other instances, it has been argued that women who are mothers prefer employment in family-friendly jobs, or part-time jobs, which pay lower wages. ... **More equitable sharing of family duties between men and women, as well as adequate childcare and elder-care services, would in many instances lead to women making different occupational choices.**“

ILO (2018):  
[file:///C:/Users/ingop/OneDrive/Dokumente/Arbeitsmaterial/Gender%20Pay%20Gap/ILO%20\(2018\)%20Global%20Wage%20Report.pdf](file:///C:/Users/ingop/OneDrive/Dokumente/Arbeitsmaterial/Gender%20Pay%20Gap/ILO%20(2018)%20Global%20Wage%20Report.pdf)



# Stoet und Geary (2018; p. 7): Evaluation of PISA Results (I)

*Girls can read better than boys, but they are worse in calculus. The more egalitarian a country is, the more likely boys are to lead with respect to scientific talent – and the fewer women study STEM subjects.*

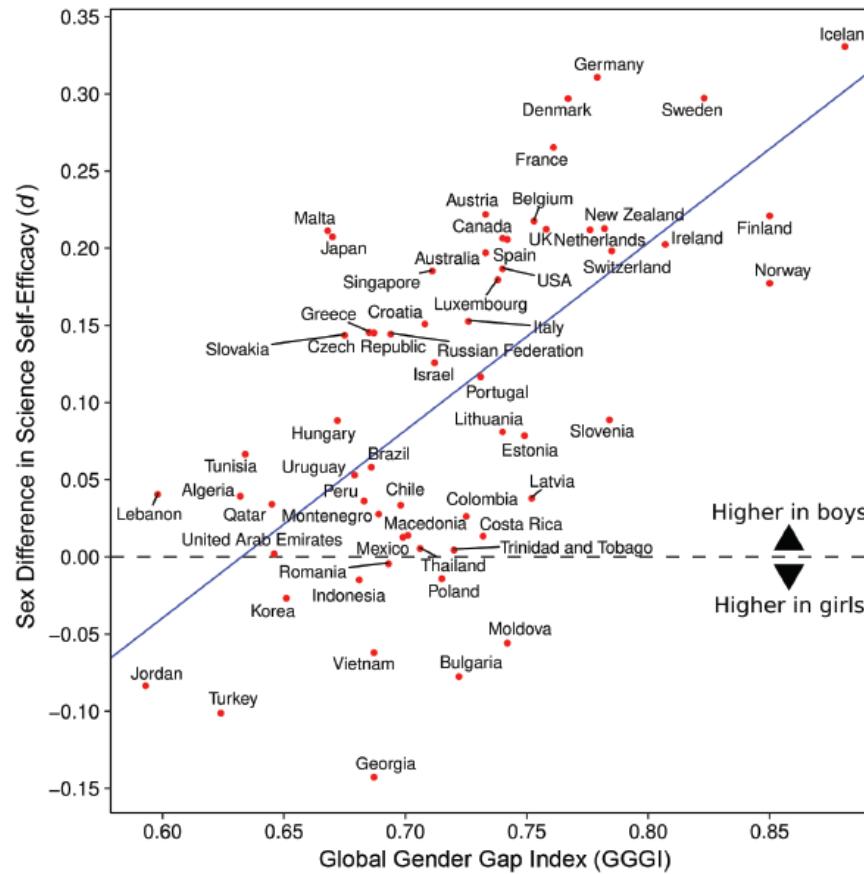


**Fig. 3.** Scatterplots (with best-fitting regression lines) showing the relation between gender equality and sex differences in (a) intraindividual science performance and (b) the percentage of women among science, technology, engineering, and math (STEM) graduates. Gender equality was measured with the Global Gender Gap Index (GGGI), which assesses the extent to which economic, educational, health, and political opportunities are equal for women and men. The gender gap in intraindividual science scores (a) was larger in more gender-equal countries ( $r_s = .42$ ). The percentage of women with degrees in STEM fields (b) was lower in more gender-equal countries ( $r_s = -.47$ ).



## Stoet und Geary (2018; p. 8): Evaluation of PISA Results (II)

*The more egalitarian a country is, the greater are the differences with regard to interest in science between boys and girls.*

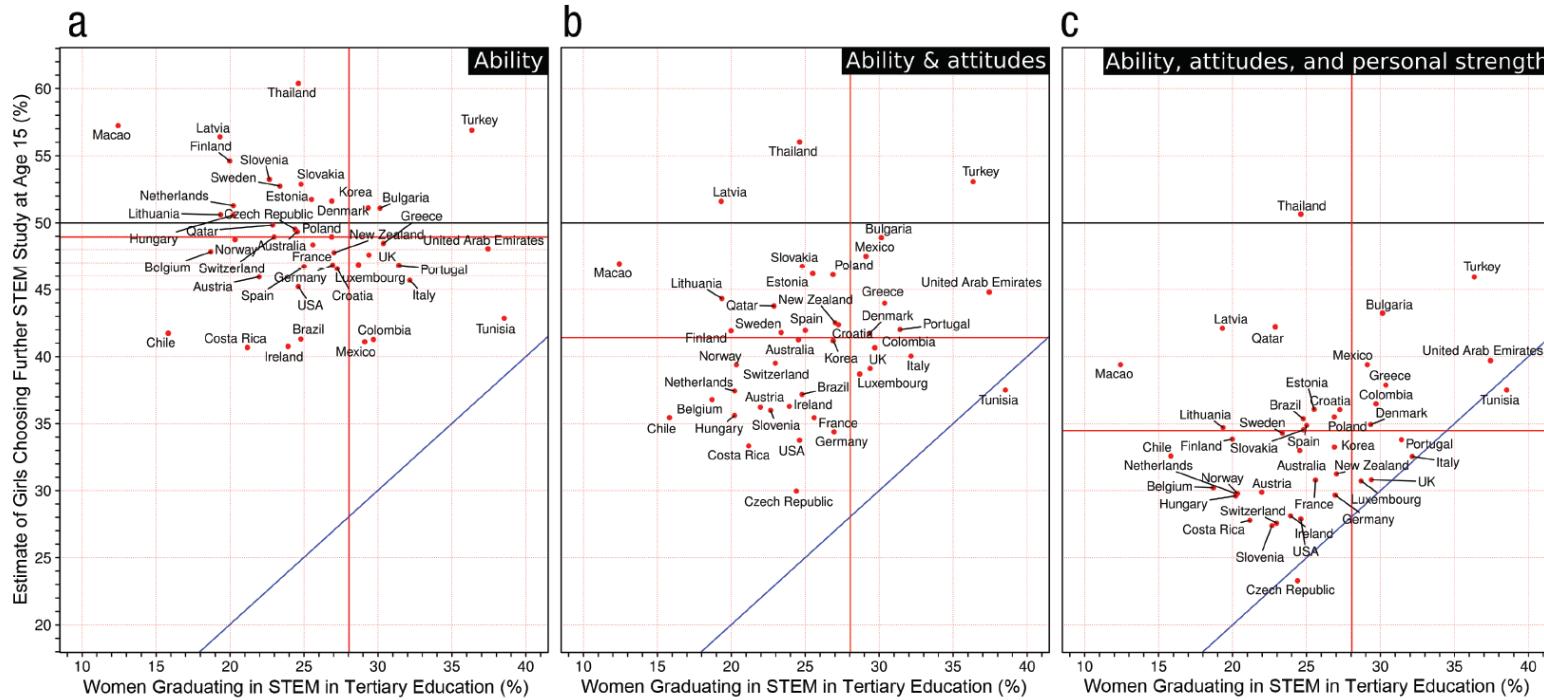


**Fig. 4.** Scatterplot (with best-fitting regression line) showing the relation between sex difference in science self-efficacy and the Global Gender Gap Index.



# Stoet und Geary (2018; p. 9): Evaluation of PISA Results (III)

*Girls are gifted for science, but also for other fields (reading & writing). They also have other interests. This explains to a large extent why they are under-represented in STEM fields. Their being under-represented is a result of self-selection, not of discrimination.*

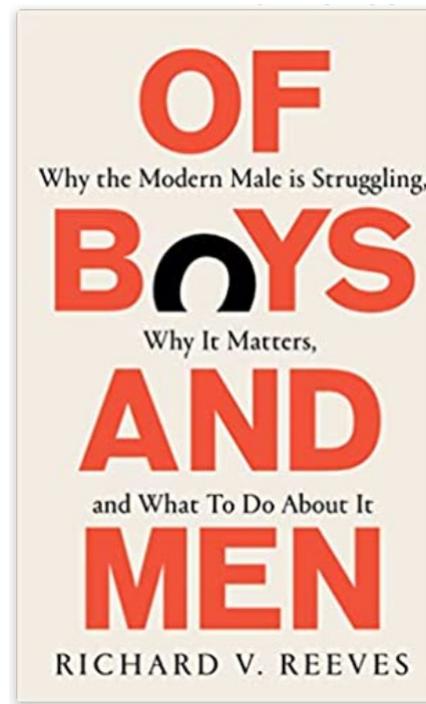
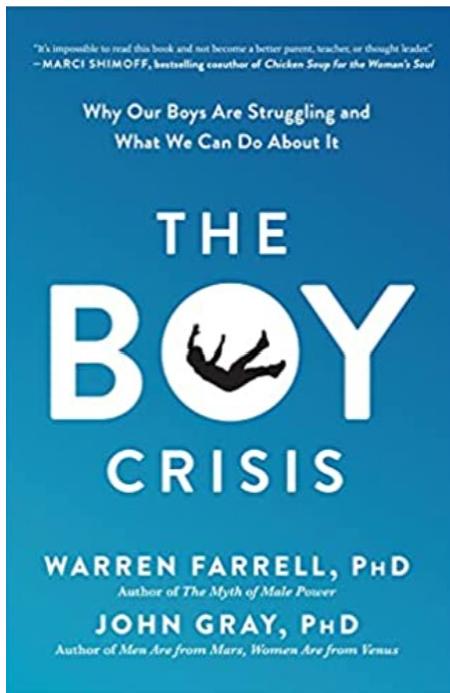


**Fig. 5.** Scatterplots showing the relation between the percentage of female students estimated to choose further science, technology, engineering, and math (STEM) study after secondary education and the estimated percentage of female STEM graduates in tertiary education. Red lines indicate the estimated (horizontal) and actual (vertical) average graduation percentage of women in STEM fields. For instance, in (c), we estimated that 34% of women would graduate college with a STEM degree (internationally), but only 28% did so. Identity lines (i.e., 45° lines) are colored blue; points above the identity lines indicate fewer women STEM graduates than expected. Panel (a) displays the percentage of female students estimated to choose STEM study on the basis of ability alone (see the text for criteria). Although there was considerable cross-cultural variation, on average around 50% of students graduating in STEM fields could be women, which deviates considerably from the actual percentage of women among STEM graduates. The estimate of women STEM students shown in (b) was based on both ability, as in (a), and being above the international median score in science attitudes. The estimate shown in (c) is based on ability, attitudes, and having either mathematics or science as a personal strength.



# Food for Thought

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# Further Food for Thought

## A Systematic Review and New Analyses of the Gender-Equality Paradox

Agneta Herlitz<sup>ID</sup>, Ida Höning, Kåre Hedebrant, and  
Martin Asperholm<sup>ID</sup>

Division of Psychology, Department of Clinical Neuroscience, Karolinska Institutet

„We found that sex differences in personality, verbal abilities, episodic memory, and negative emotions are more pronounced in countries with higher living conditions. In contrast, sex differences in sexual behavior, partner preferences, and math are smaller in countries with higher living conditions. We also observed that economic indicators of living conditions, such as gross domestic product, are most sensitive in predicting the magnitude of sex differences. Taken together, results indicate that more sex differences are larger, rather than smaller, in countries with higher living conditions. It should therefore be expected that the magnitude of most psychological sex differences will remain unchanged or become more pronounced with improvements in living conditions, such as economy, gender equality, and education.“



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Prof. Dr. Ingo Pies

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