

Cost-Benefit Analyses for Companies in (Dual) VET

DC dVET Webinar (13 May 2020)

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Agenda

- ❏ Cost-benefit of apprenticeship training for firms - does it matter?
- ❏ An intuitive introduction into a complex model
- ❏ Regulatory frameworks, social partners, labour markets and why the cost and benefits of apprenticeship training are not the same everywhere
- ❏ If you can't measure it - can you simulate it?
- ❏ Cost and benefits, quality of education and how to achieve a win-win-win situation?

Part 1: Cost-benefit of apprenticeship training for firms - does it matter?

Costs and benefits are everywhere – but in training

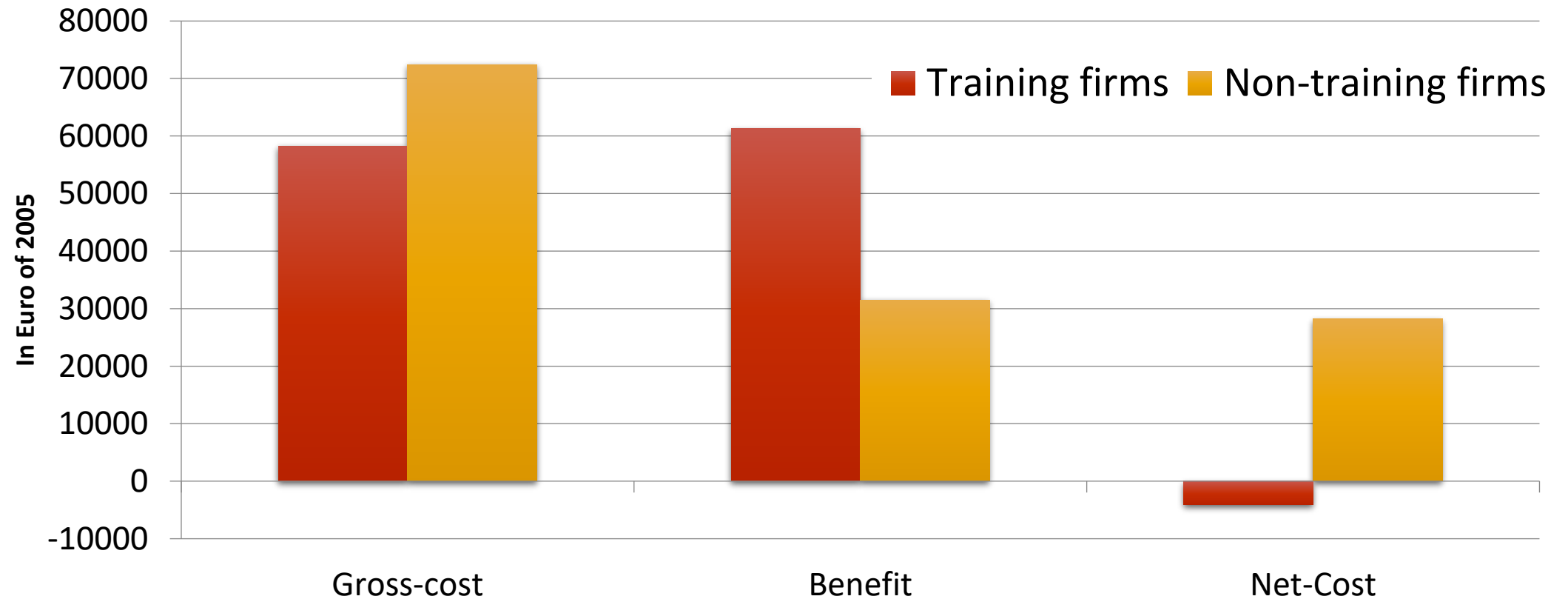
- ❏ When surveyed – **non-training firms** report the lack of time as the most important impediment to training – and although we know that time is money – when asked directly they deny any importance of cost and benefits of training
- ❏ **Training companies** deny the relevance of cost and benefits also. They claim that they are motivated by the common good and their social responsibility
- ❏ And finally, **government officials, social partners** and **researchers** tell you that it is all about culture and tradition – or the lack of it

The **joke of the day** is usually, that the same people, who deny the relevance of money for training decisions, ask for subsidies and tax deductions to incentivize firms to train

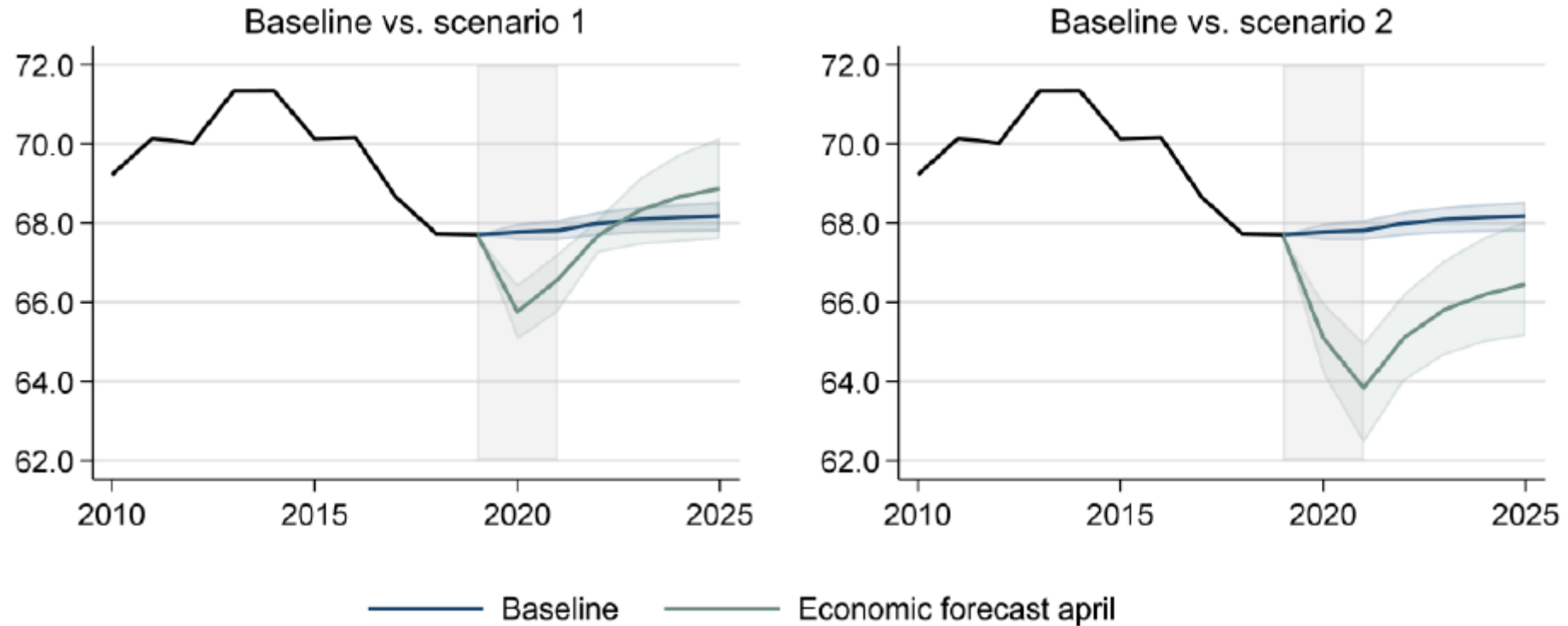
How can we know that cost and benefits matter?

- ❑ We have not only surveyed and monitored the costs and benefits of thousands of **training firms** over time but we also “simulated” the costs and benefits of non-training firms.
- ❑ We were able to demonstrate that changes in the **parameters** that influence the costs or the benefits also change the **propensity** of a firm to train. Thereby we were able to calculate the net-cost elasticity of firms to train.
- ❑ But you have to bear in mind that these arguments are always “**ceteris paribus**” – keeping everything else constant. Therefore, we do not deny that other factors are important too.

Net-costs of training companies and non-training companies

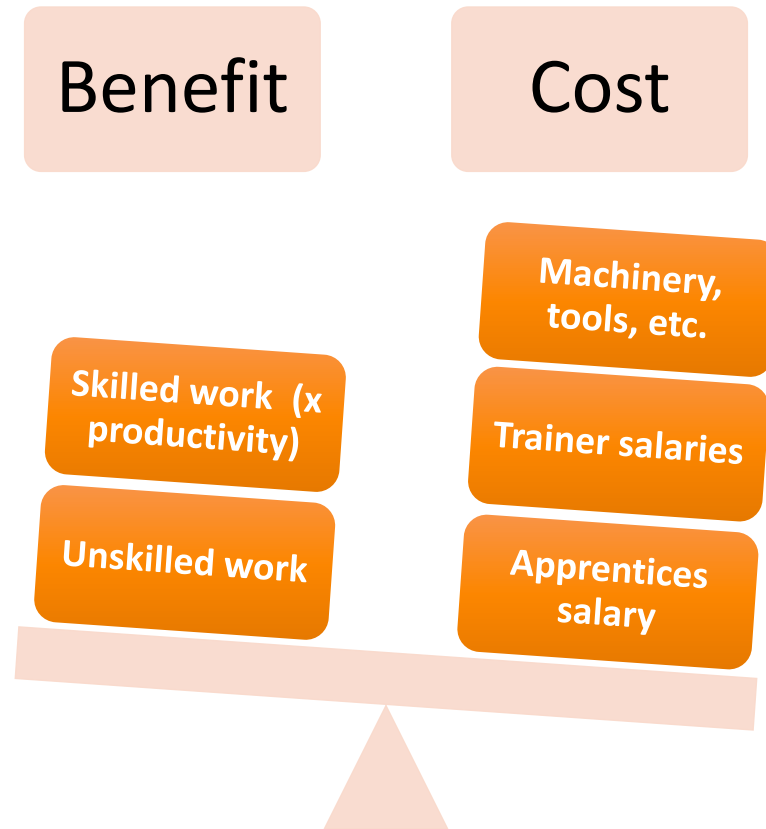


The unfortunate consequences of the importance of money – the impact of the COVID-19 crisis on apprenticeships in Switzerland



Part 2: An intuitive introduction into a complex model

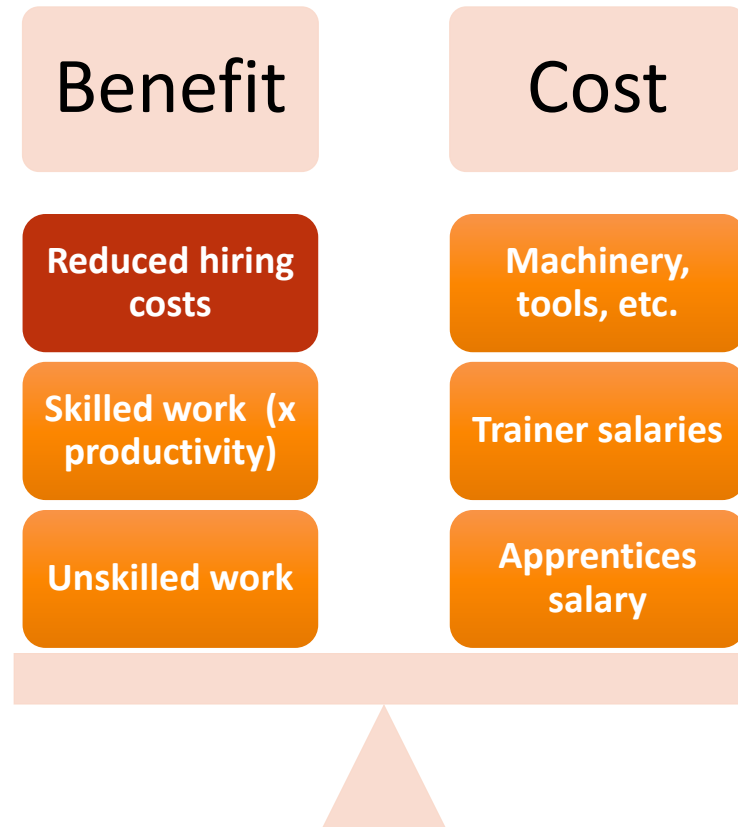
The simple model



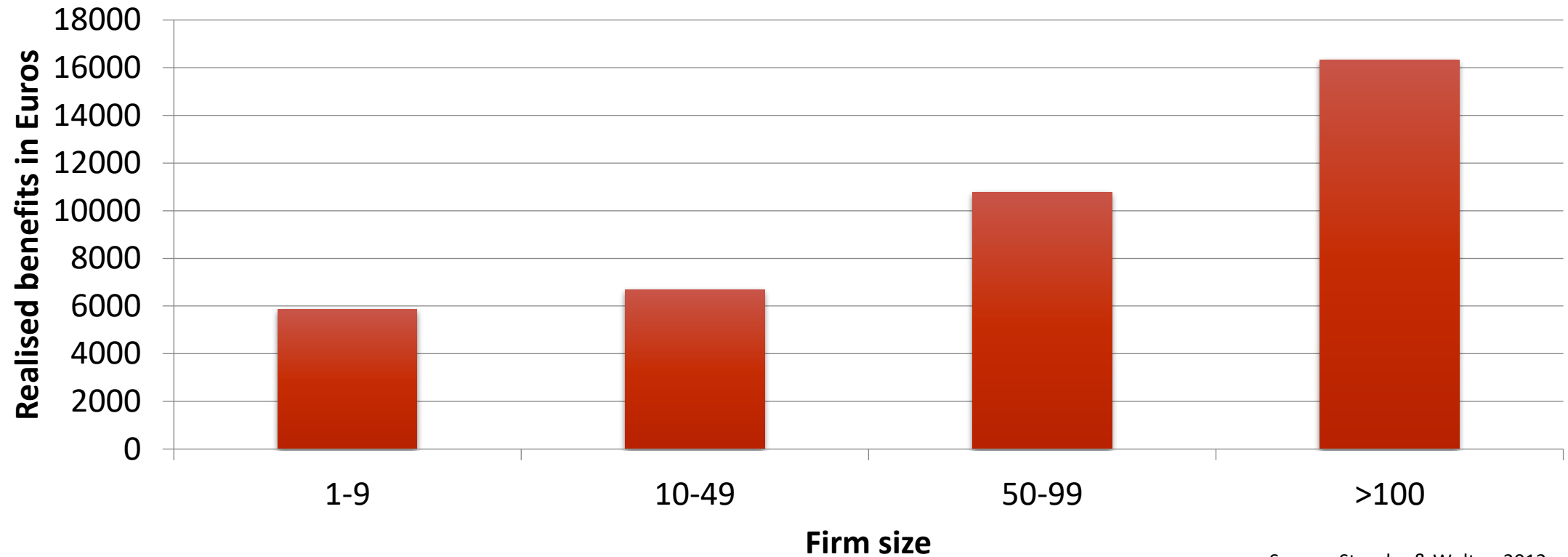
A lot of assumptions: *“Your model is static but the world is dynamic”*

- ❏ **Static model:** We assume that firms produce what they used to produce, just with apprentices substituting unskilled and skilled labor
- ❏ **The dynamic view:** Thanks to apprentices, the firms is able to produce more and better goods and services – this is a major point in emerging countries but cannot be covered by standard cost-benefit surveys
- ❏ **Quality:** If there are existing differences in the quality of goods and services due to differences in the training investments, strategies, etc., they are reflected in the salaries of skilled workers and the hiring costs (next slide)

There is a life after training



Saved hiring and induction costs per trained apprentice



Source: Strupler & Wolter, 2012

“Many ways lead to Rome – but some not”

Training incidence	Net-costs	Net-benefit
High hiring costs	↔	↑↑
Low hiring costs	↓↓	↑

Two types of training strategies emerge from this

1) The production oriented training strategy

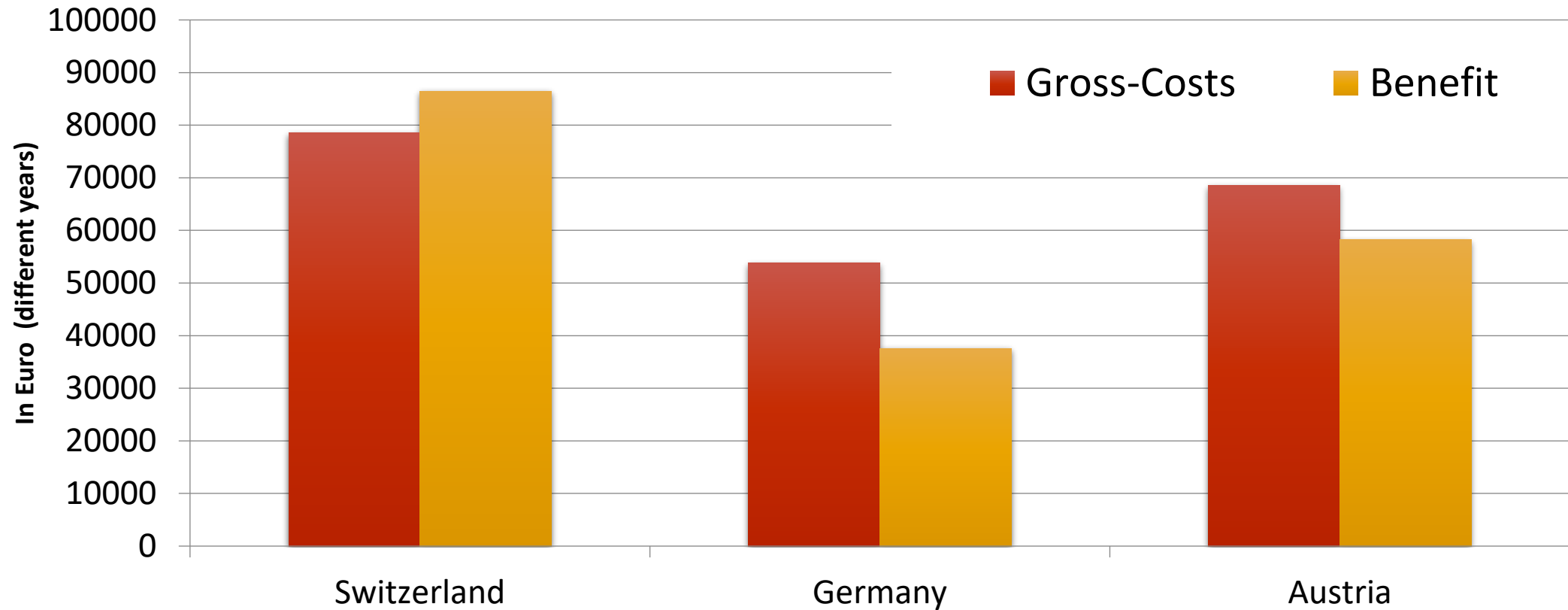
- ❑ Particularly SME's have to rely on the possibility to train without expected net-costs – and in most economies SME's are the backbone of the economy

2): Investment oriented training strategy

- ❑ Occupations with high intellectual demands very often demand net-investments – and these occupations are needed to attract talented youth into apprenticeship

Part 3: Regulatory frameworks, social partners, labour markets

Why seemingly identical countries have different net-costs?



A lot of the factors that affect the costs and the benefit of apprenticeship training are not under control of firms

- ❑ Duration of training
- ❑ Division of costs between state and firms
- ❑ Decisions about the learning places
- ❑ Decisions about the qualifications of trainers
- ❑ Decisions about apprentices' salaries
- ❑ Decisions about competing options in the education system, etc.

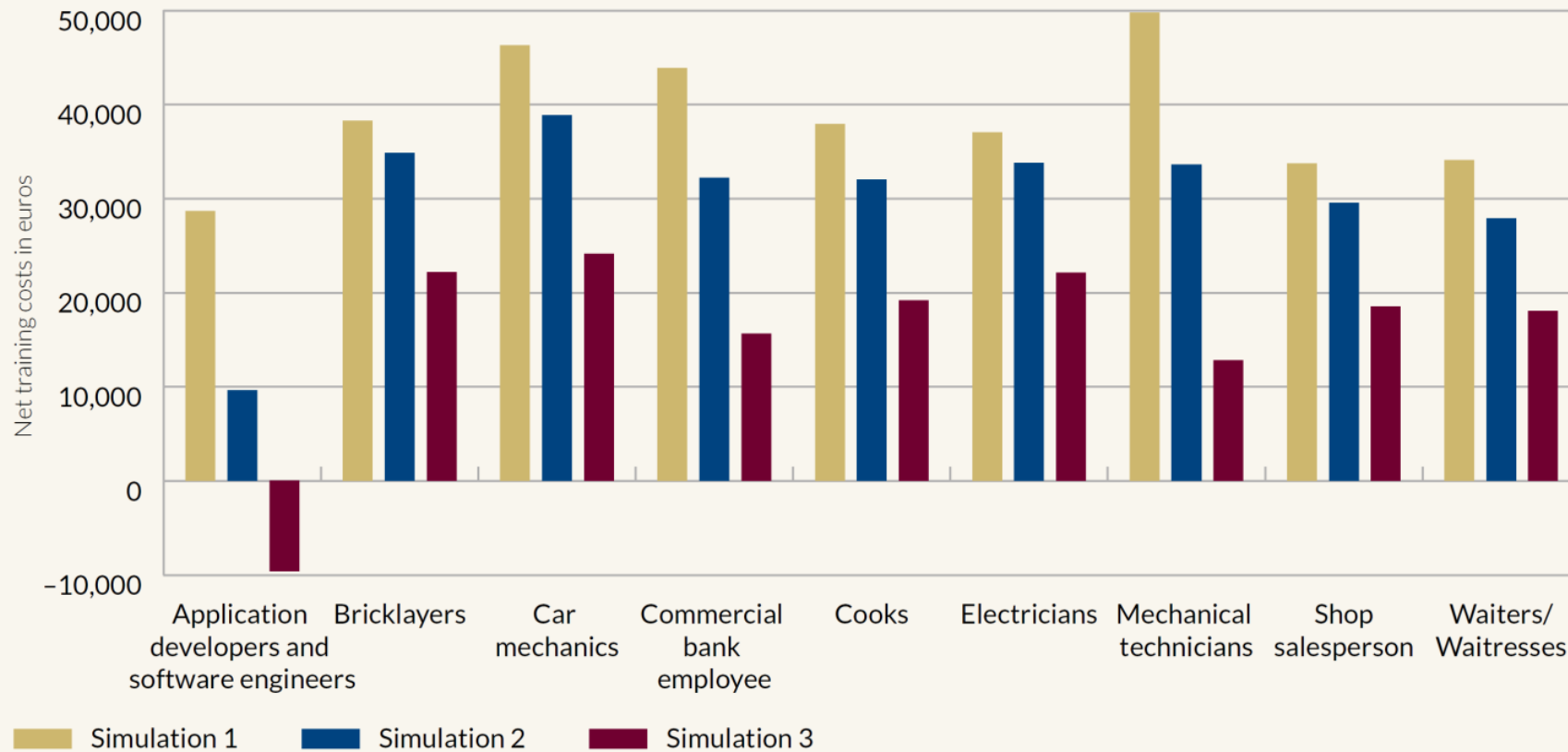
Most importantly the pay of apprentices

Apprentices' salaries make up to 50% of the gross-costs of training

- ❑ Many systems fix salaries in absolute terms
- ❑ Some systems fix salaries in relative terms (relative to skilled wages in the trained profession)
- ❑ Only few systems allow the market forces to decide

What happens if salaries are too high?

FIGURE 2 Net costs simulations for different scenarios of training intensity in the firm for Italy³

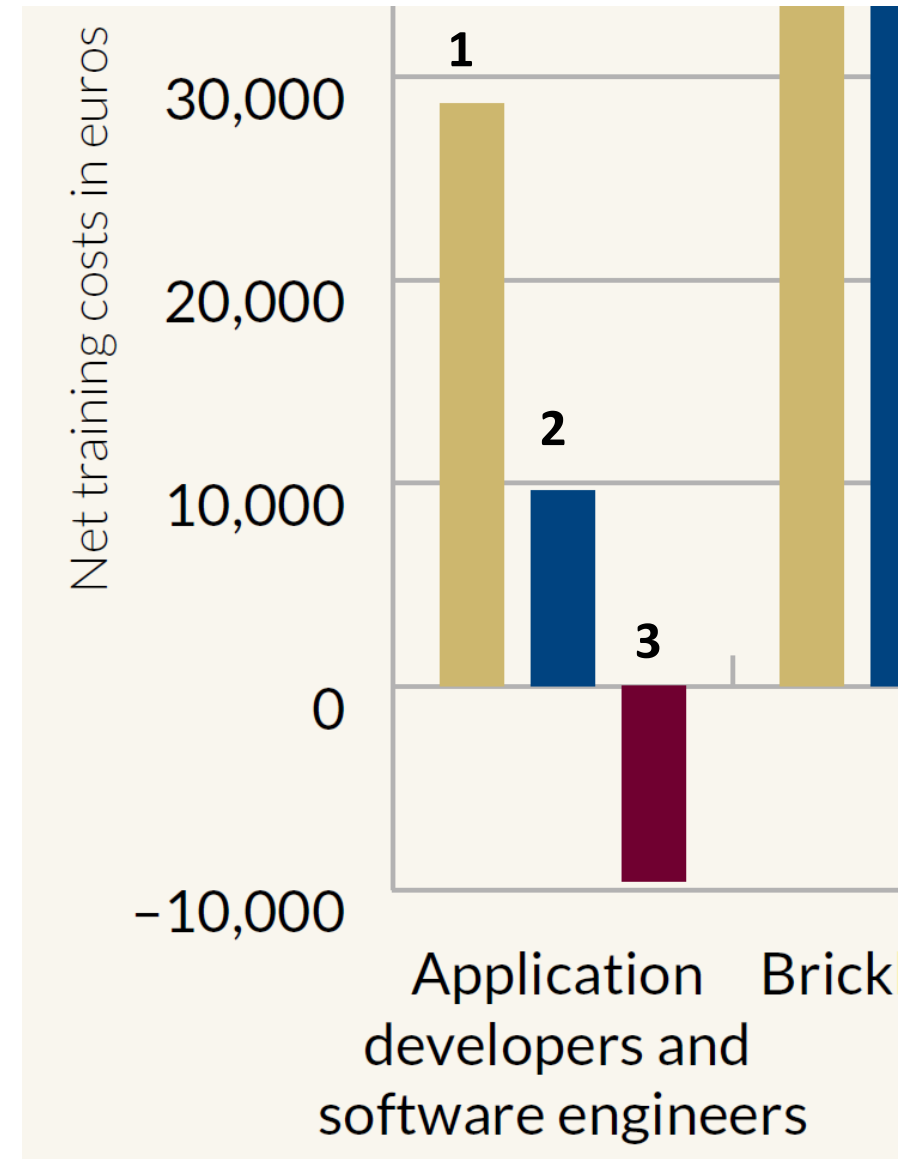


Source: Muehleemann et al., 2018 (Figure 10, page 46)

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Lowering the quality of training can reduce the net-costs

- 1) Training according to the Swiss model but with Italian salary regulations
- 2) No training provided by firms (only schools) but productivity levels fall by 50%
- 3) Firms only use apprentices for unskilled work



Take home lesson:

“Good intentions can destroy the system”

Part 4: If you can't measure it - can you simulate it?

Why should we simulate at all?

- ❑ **Heterogeneity** of models currently in use in a country is too big to be generalized (external validity).
- ❑ **Companies** engaged today are not **representative** for the ones we would like to attract into apprenticeship training (external validity).
- ❑ **Data base** that you could extract from training companies too thin to draw conclusions (internal validity).
- ❑ **Current training models** may not be the ones that promise success in the future.

How do we go about a simulation

- ❏ **We use Swiss reference data** on the intensity of in-firm training, the productivity of apprentices, etc. for a selected number of occupations of interest
- ❏ We use the country X's **wage data** (relative wages between skilled and unskilled workers, apprentices wages)
- ❏ We can use the country X's **curriculum** and apply it in a Swiss manner but we can also make simulations for different forms of curricula
- ❏ We have to make estimations on the **saved hiring costs** from a national survey in country X

Simulations show the heterogeneity of potential outcomes

Occupation	€300			€530			HC
	M1	M2	M3	M1	M2	M3	
Laboratory technician	5,672	6,619	-285	13,952	12,139	7,995	
Plant technician (chemical in.)	-6,742	-2,483	-12,319	1,538	3,037	-4,039	
Automobile expert	32	1,492	-5,380	8,312	7,012	2,900	
Electromechnical technician	3,735	5,064	779	12,015	10,584	9,059	
Bank clerk	-370	4,112	-4,165	7,910	9,632	4,115	
Store clerk	-3,258	-332	-8,388	5,022	5,188	-108	
Retail sales expert	-2,501	-132	-7,597	5,779	5,388	683	
Technician in food industry	-5,752	-502	-9,842	2,528	5,018	-1,562	
Hotel management specialist	-7,956	-2,689	-13,047	324	2,831	-4,767	
Cook in hotels and restaurants	-2,392	871	-6,173	5,888	6,391	2,107	

Source: Wolter & Mühlemann, 2015

What do we learn from simulations

- ❑ Although the variance between occupations follows closely (80%) the Swiss case, the **level** of net-costs is determined by national factors.
- ❑ It does not tell you how to train like a Swiss company – but it tells you what would be the **financial outcome** if you would train like a Swiss company in another country!
- ❑ Ex ante simulations can reveal **potentials** and **barriers** to the expansion or introduction of apprenticeship training on the side of firm.
- ❑ Ex ante simulations provide you with an interesting **benchmark** for ex post evaluations.

Part 5: Cost and benefits, quality of education and how to achieve a win-win-win situation?

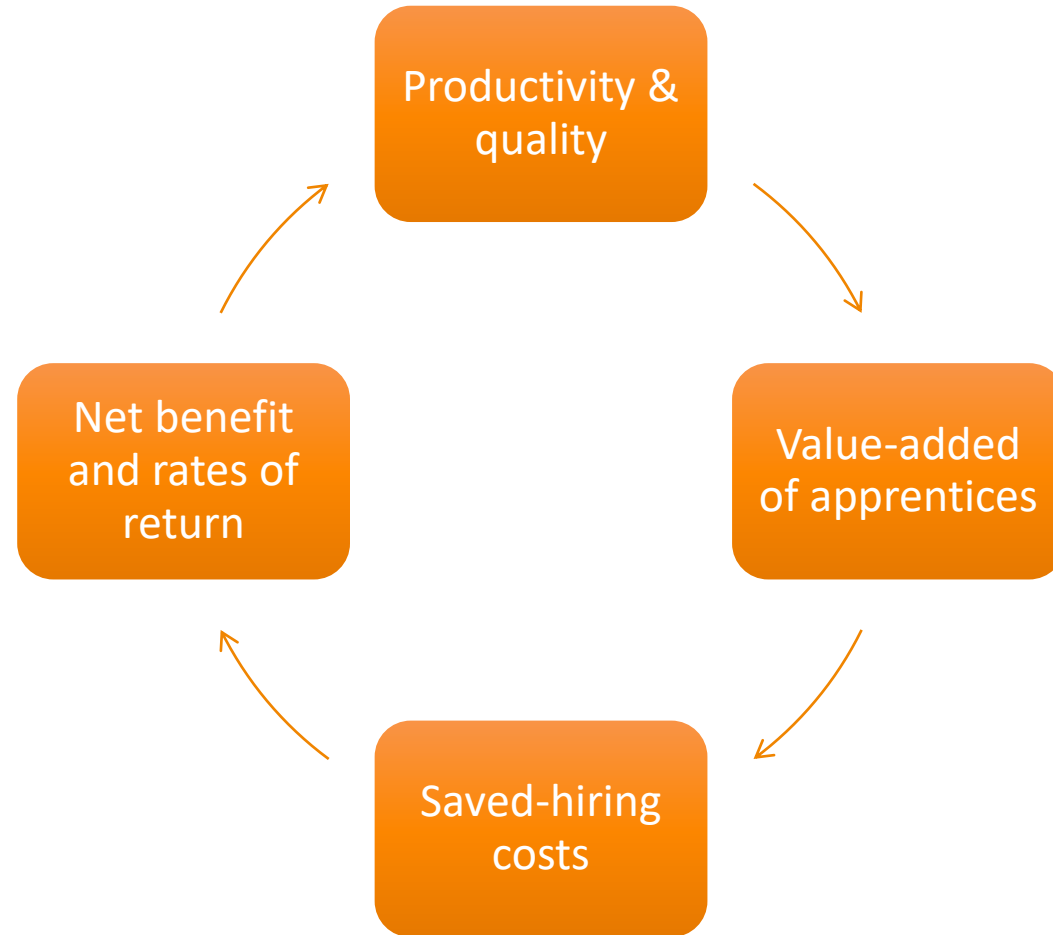
There are three partners in the game

- ❑ The three partners are the **firm**, the **public** (government) and the **student**
- ❑ **No** system works if only one wins and the others loose
- ❑ In particular: The net-costs (-benefits) of firms are the **mirror image** of the private rates of return to education of students:
- ❑ This means that any action that increases the net benefit of the companies usually reduces the return on investment for the students and *vice versa*.

In some countries or cases the system is not “win-win” but “loose-loose”

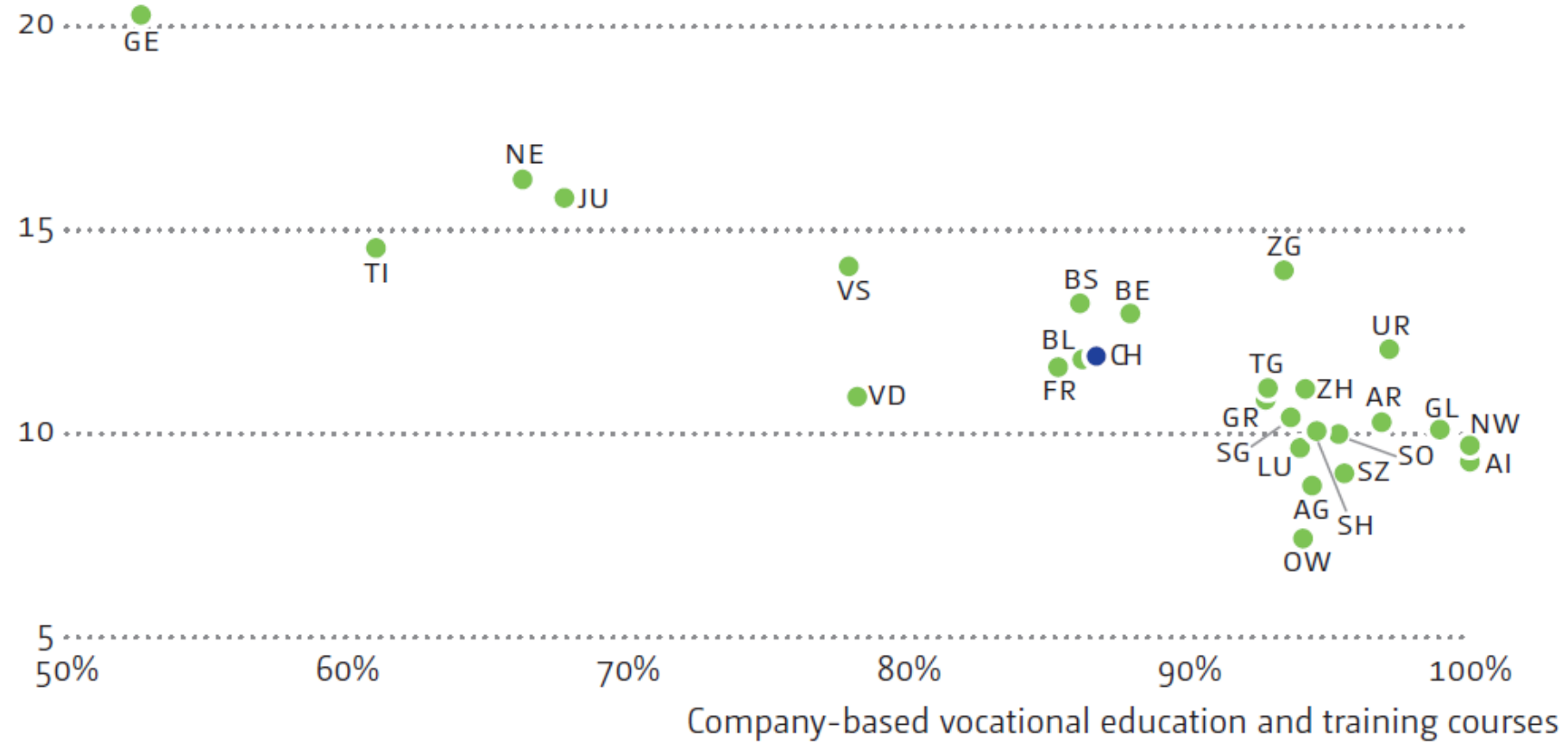
- ❑ This occurs above all where trained workers are **not more productive** than un- or semi-skilled workers and therefore do not earn significantly more
- ❑ **Improvements** in training (quality) can create an win-win situation, if:
 - ❑ **Productivity** is increased such that the firms needs less labour to produce the same outcome
 - ❑ **Quality** is increased such that clients are prepared to pay more or choose the services and products of this firm above others (gains in market shares)

The «virtuous» circle of training quality



And finally the benefits for the government (fiscal return)

Average costs per training course in vocational education and training, in CHF 1000



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