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# Costs – benefits – quality:
## the specific profile of Austrian apprenticeship and its future potentials and drawbacks

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Conference of the International Network on Innovative Apprenticeship (INAP) **"Situated competence development through innovative apprenticeships",** 01/02 February 2008, Vienna

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# Agenda

- Methodology, background
- Results
- Current problems and future prospects

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# Agenda

- **Methodology, background**

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# Methodology

**Figure 1: Categories for evaluation, and available empirical information**

| Categories | Basic criteria | Available data | Not available / gaps |
|---|---|---|---|
| Input | - Recruitment | - Apprenticeship market, quantity | - Quality of applicants |
| | - Infrastructure | - Some information about training enterprises, trainers | - Quality of infrastructure |
| | - Financing | - Some information about investment by enterprises, information about part-time schools | - Information not up to date |
| Process | - Delivery traits | - Some information about training time, kinds of trainers, working and learning | - Information not up to date |
| Output | - Completers, drop–outs | - Some information about drop-outs | - Partly contradicting accounts |
| Outcome | - Benefits | - Some aggregate information about returns | |

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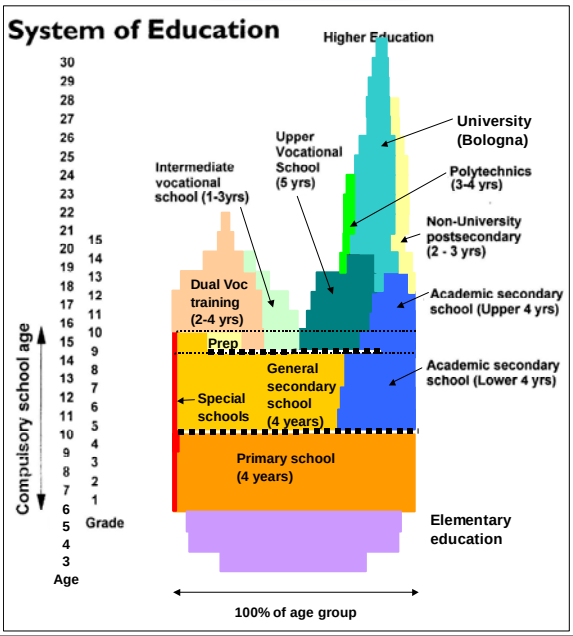


# Background

**Early Tracking**

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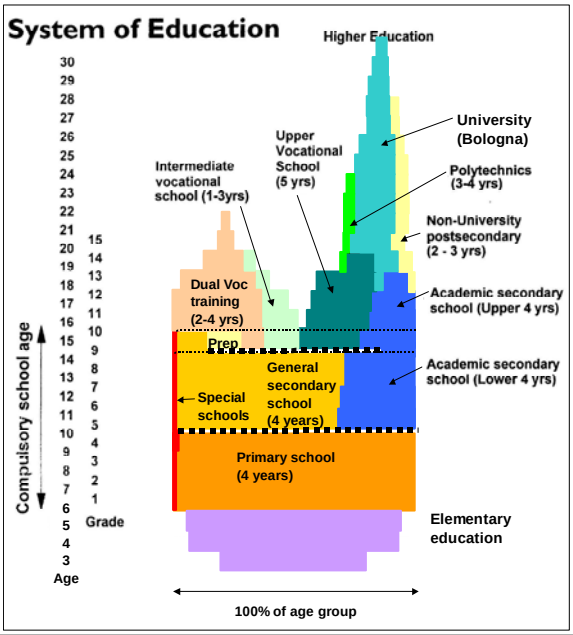


# Background

**Strong VET**

APPR + FT-School

Lower - upper Level

Young apprentices

Early Tracking

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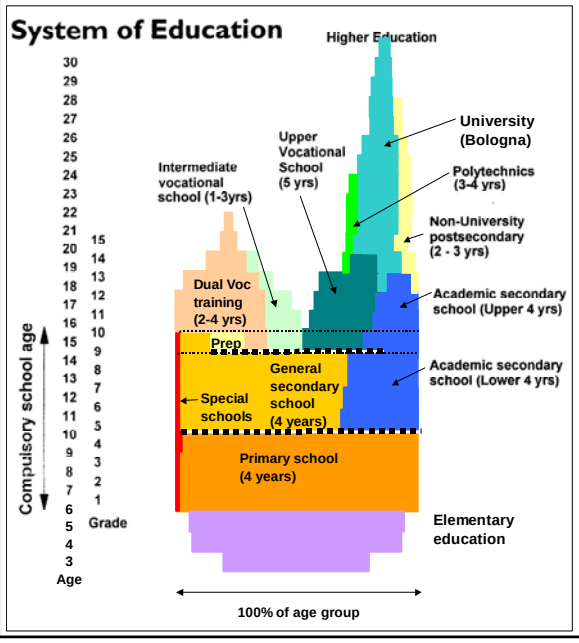


# Background

**Weak H.E.**

Strong VET

APPR + FT-School

Lower - upper Level

Early Tracking

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# Agenda

- Methodology, background
- **Results**

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# Main points

- apprenticeship **lowest level** of a tracked and layered system
- problems to provide enough **training places** for young people seeking an apprenticeship
- **profile** compared to German and Swiss systems:
  - early age;
  - individualised training or small groups of apprentices;
  - mainly plain on-the-job-training /seldom training infrastructure
- small **net costs**; **returns** lower than from other tracks; drop-outs not clear and not comparable; signs for decreasing outcomes
- demand increasingly **concentrating** on traditional trades, new trades not very expanding
- **policy:** much subsidisation; very little emphasis on pedagogy

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# ... lowest level

Produces many problems with incentives for the involved actors

**Schools**: too little incentives for better competences, as there have been no formal requirements for the access to apprenticeship

**Potential apprentices**: too little incentives to choose an apprenticeship, as full-time schools produce better opportunities to proceed

**Enterprises**: too little incentives, as trainability of applicants is expected low, and cost-benefit relation might be lower for employyes from school, and might decrease for apprentices

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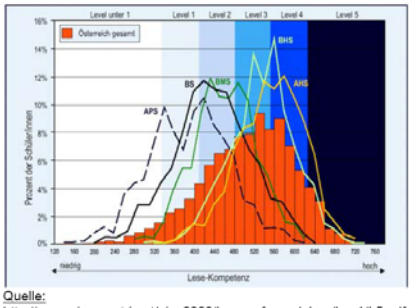
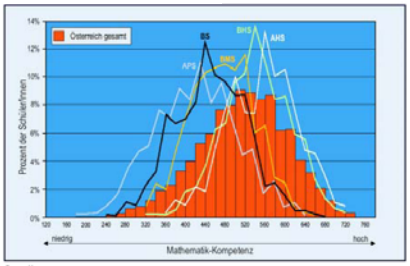
# Competences - PISA 2000

**Reading**



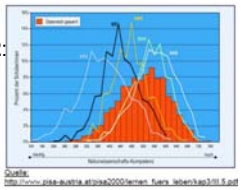

Quelle:
http://www.pisa-austria.at/pisa2000/lernen_fuers_leben/kap1/I.5.pdf

**Math**




Quelle:
http://www.pisa-austria.at/pisa2000/lernen_fuers_leben/kap2/II.5.pdf

Naturwissenschaften



**Science**

Quelle:
http://www.pisa-austria.at/pisa2000/lernen_fuers_leben/kap3/III.5.pdf

Lowest levels by considerable proportion of apprentices: in PISA 2000 **reading below level 2**: about 32% of male and 27% of female appr. (as compared to about 15% of lower level VET full-time school)

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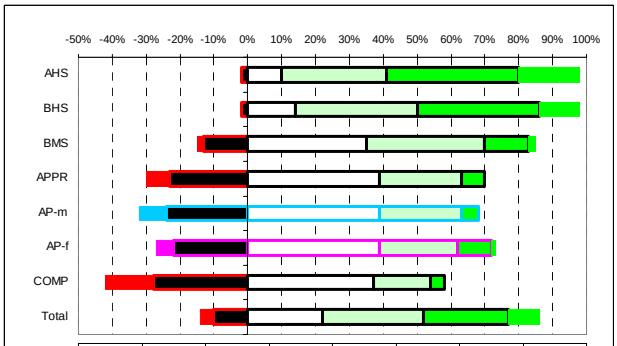
# PISA 2000 reading proficiency




| | Total | COMP | AP-f | AP-m | APPR | BMS | BHS | AHS |
|---|---|---|---|---|---|---|---|---|
| PISA 5 | 9 | 0 | 1 | 0 | 0 | 2 | 12 | 18 |
| PISA 4 | 25 | 4 | 10 | 5 | 7 | 13 | 36 | 39 |
| PISA 3 | 30 | 17 | 23 | 24 | 24 | 35 | 36 | 31 |
| PISA 2 | 22 | 37 | 39 | 39 | 39 | 35 | 14 | 10 |
| PISA <1 | -4 | -14 | -5 | -8 | -7 | -2 | 0 | 0 |
| PISA 1 | -10 | -28 | -22 | -24 | -23 | -13 | -2 | -2 |

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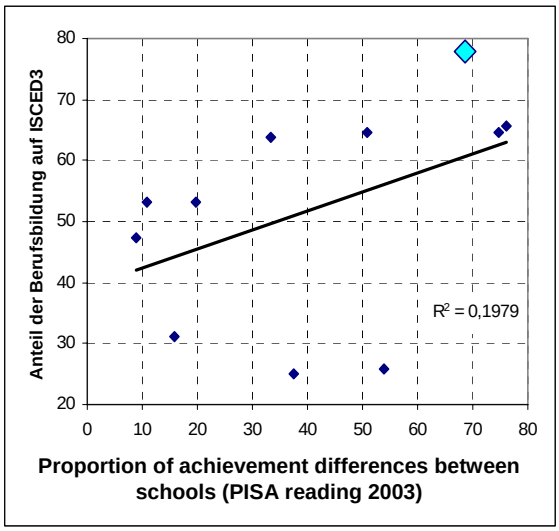
# VET and achievement reading

Proportion of VET at ISCED 3

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# Benefits: apprenticeship compared

**Returns**: clear hierarchy between educational tracks

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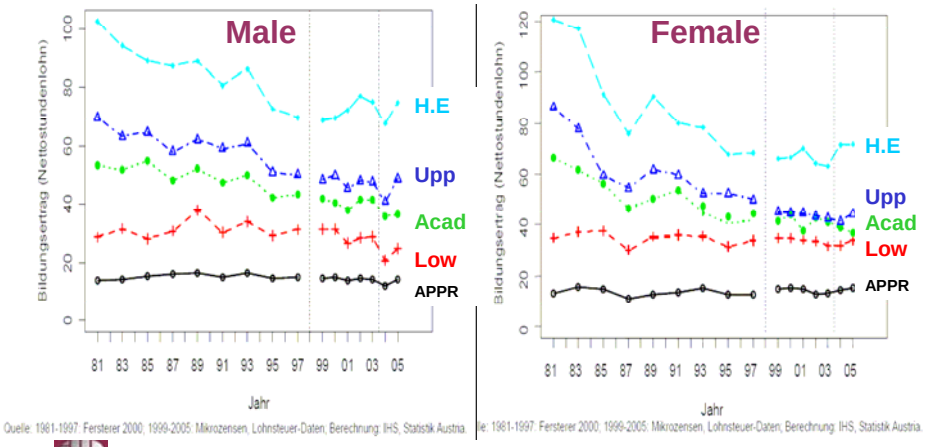
# Returns (reference comp.ed.only)

**Private returns by educational tracks and gender '81-'05 (estimated additional income to comp.ed.)**




Quelle: 1981-1997: Fersterer 2000; 1999-2005: Mikrozensen, Lohnsteuer-Daten; Berechnung: IHS, Statistik Austria.

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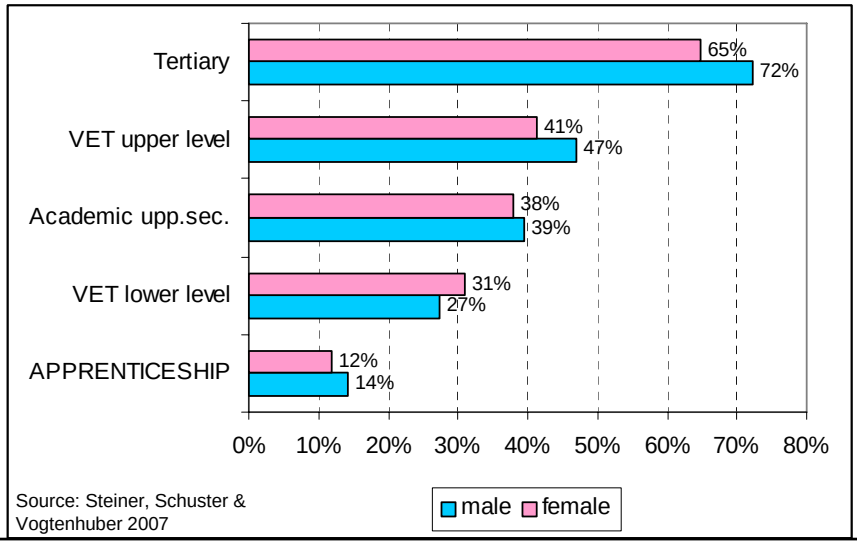
# Returns




Source: Steiner, Schuster & Vogtenhuber 2007

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# Benefits: apprenticeship compared

**Returns**: clear hierarchy between educational tracks

**EU-14 Comparison** only for medium level employees (upper seconsary education) possible
- average employment
- moderate higher income (+10%)
- markedly lower unemployment (-40%)

**Lower educated** compared to medium level employees
relative higher unemployment than in EU14 (similar relations income and employment)

**Higher educated** compared to med. level employees
- smaller income bonus (similar relations employment, unemployment)

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Differences might result from BHS

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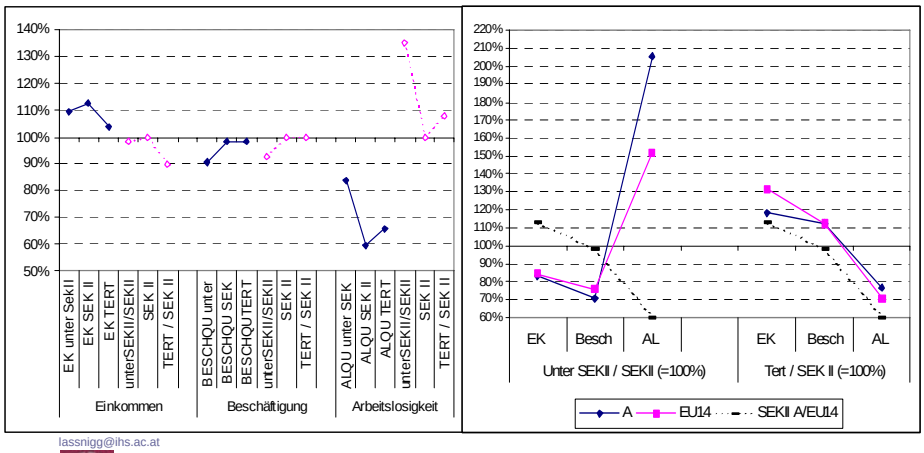
# Income, empl, ue: A and EU14

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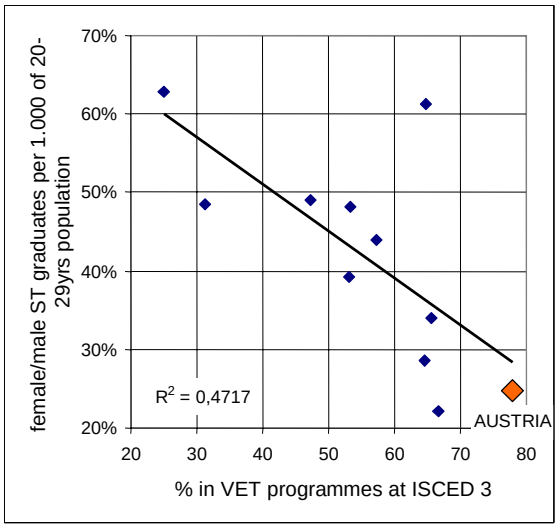
# VET prop. & gender ST-graduates

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# … demand/supply training places

- Longer-term decrease of proportion of apprentices and increase of unemployment
- Signs for a qualitative turn in enterprise behaviour around 2000
- Signs for structural problems on apprenticeship market: Beveridge Curve moved outward 1970-96; since 1976 only movement at the seekers' side
- Only small effects of policy measures

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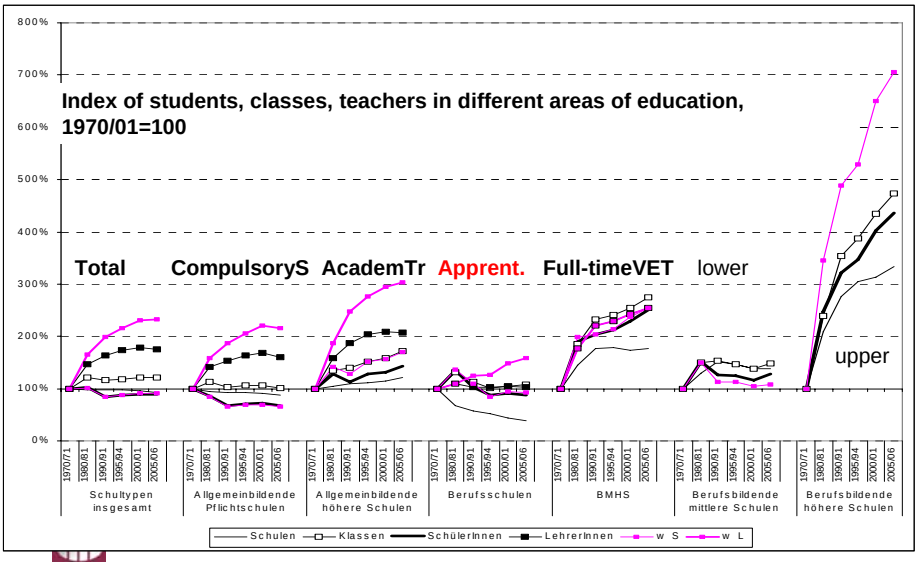
## Participation in education '70-'05

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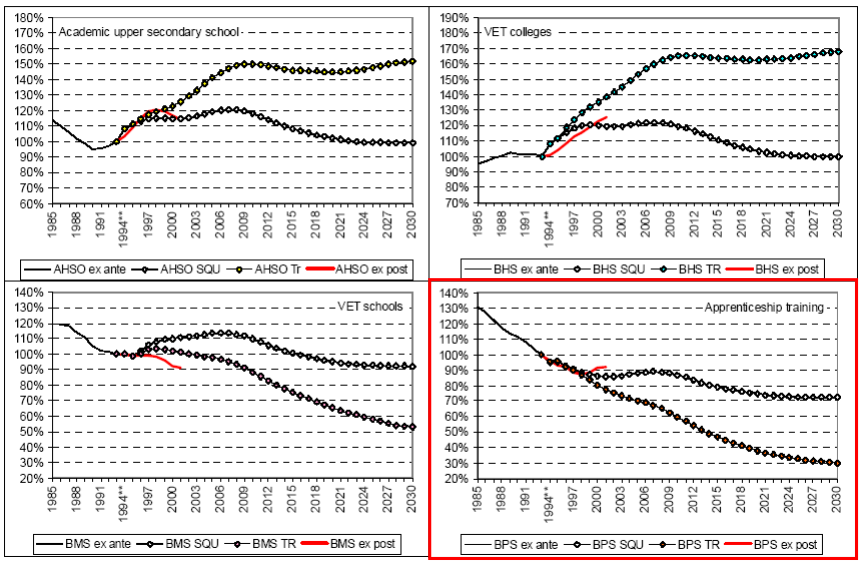
## Simulation of participation at upper secondary level '95-'30



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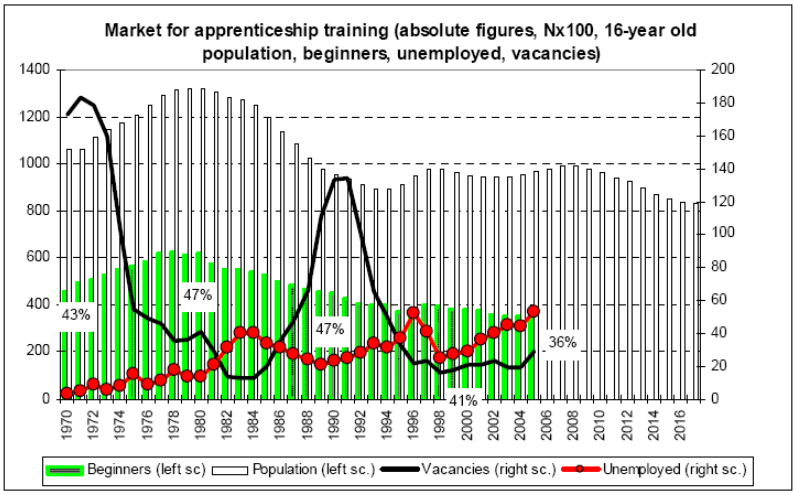
## Demography and apprenticeship market since 1970

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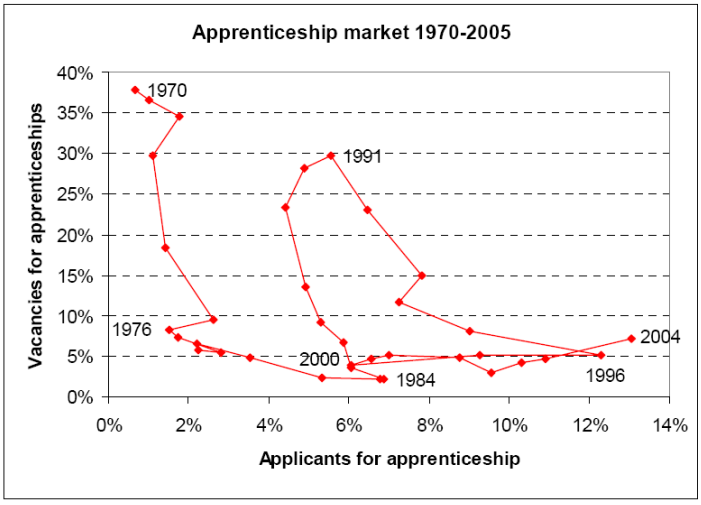
## Beveridge Curve for apprenticeship market 1970-2005

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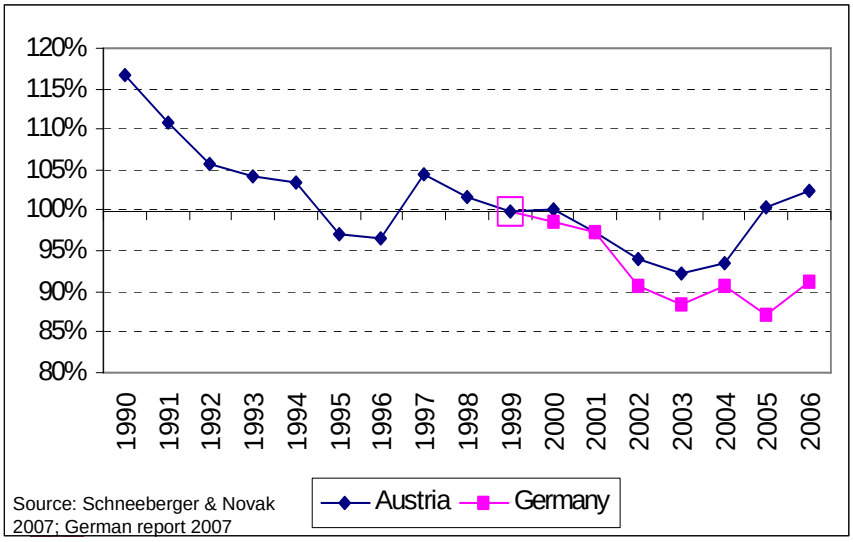
## Beginners Austria, Germany




Source: Schneeberger & Novak 2007; German report 2007

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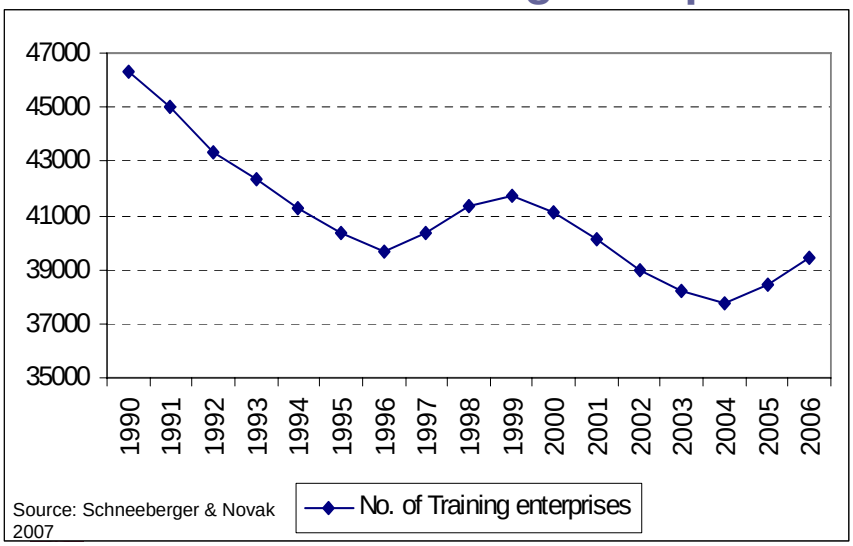
## Training enterprises




Source: Schneeberger & Novak 2007

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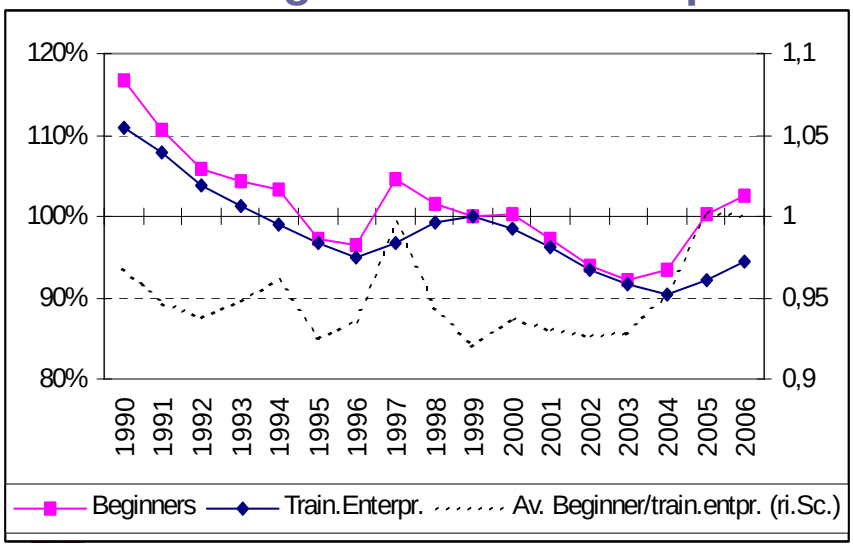
# Beginners and enterprises

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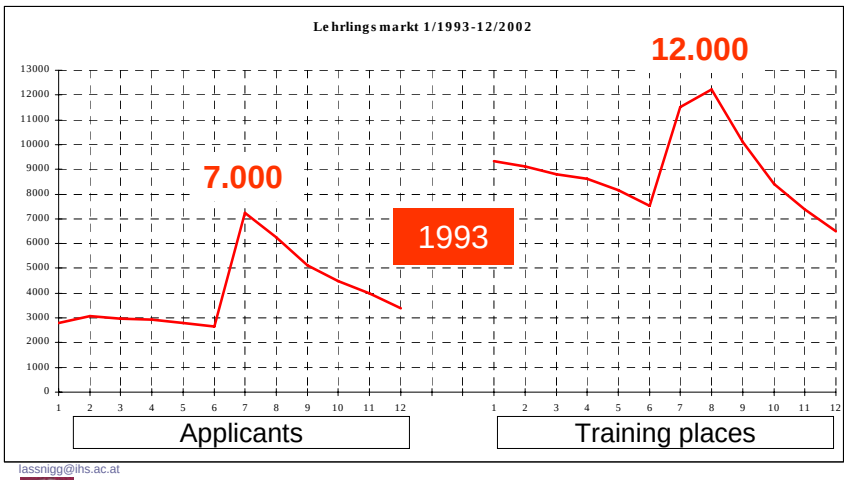
# Apprenticeship market (monthly figures)

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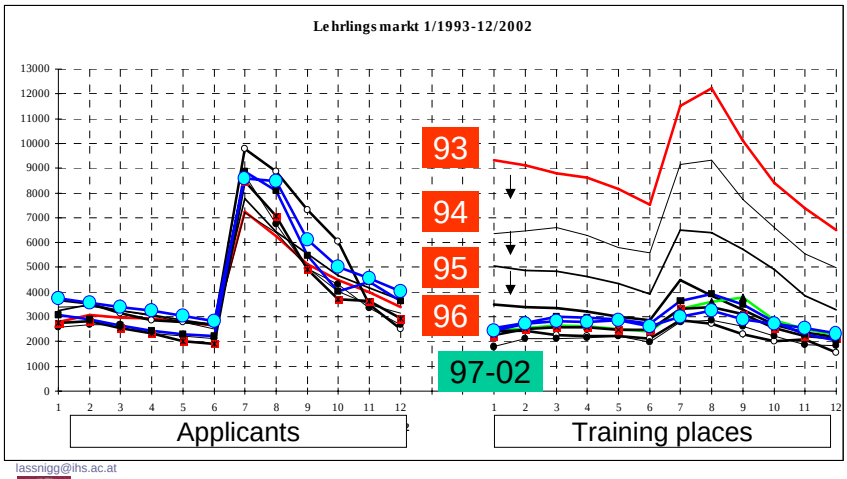


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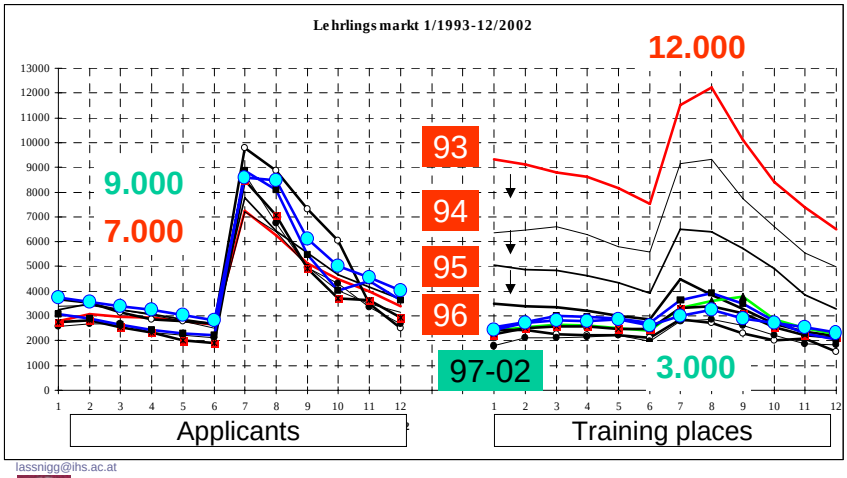


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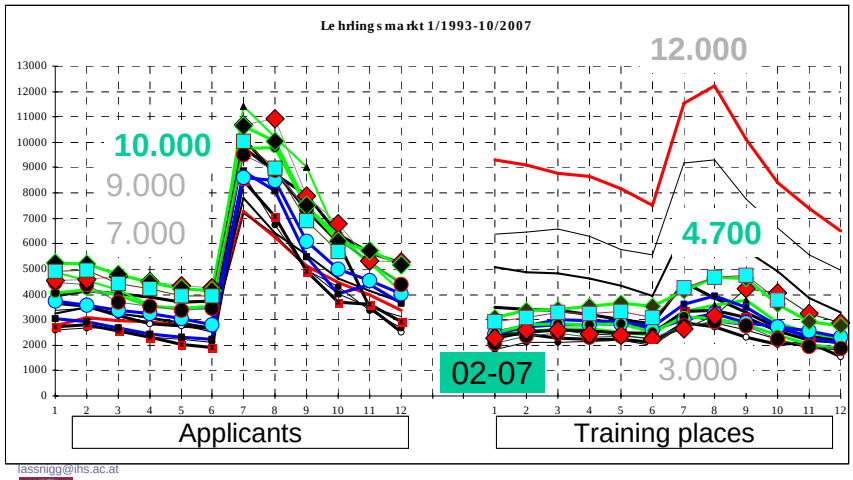


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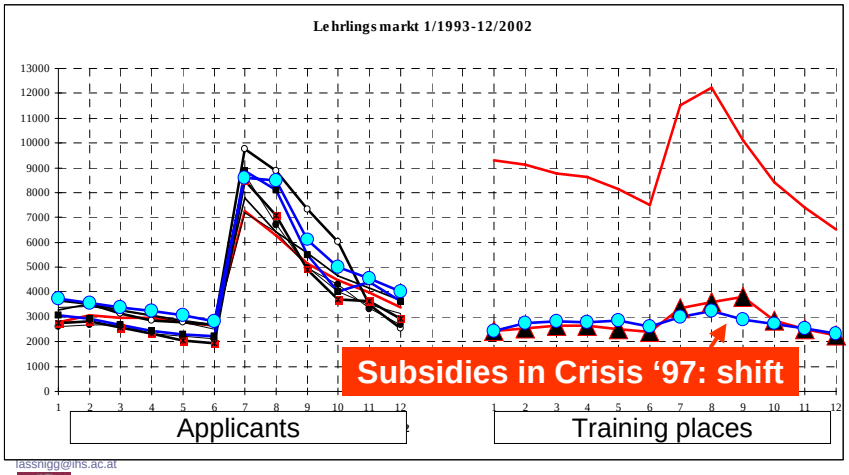


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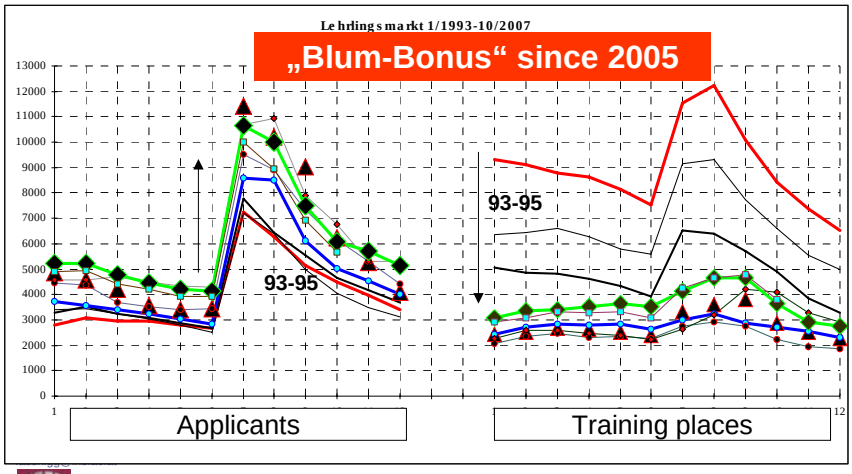


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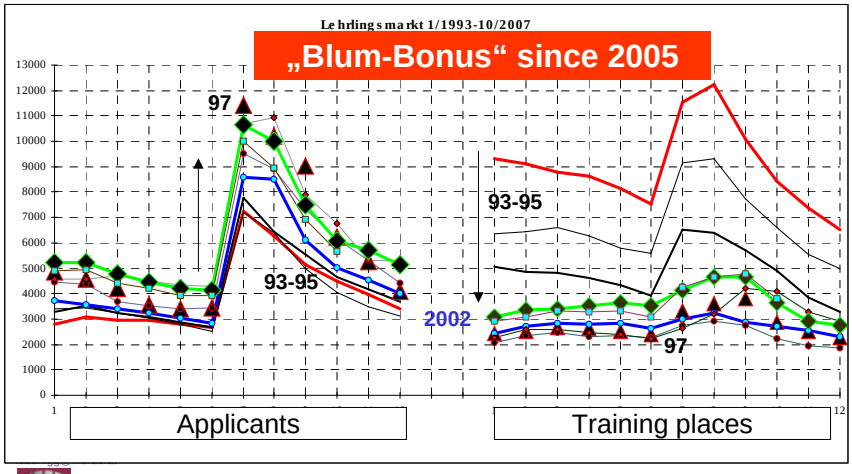

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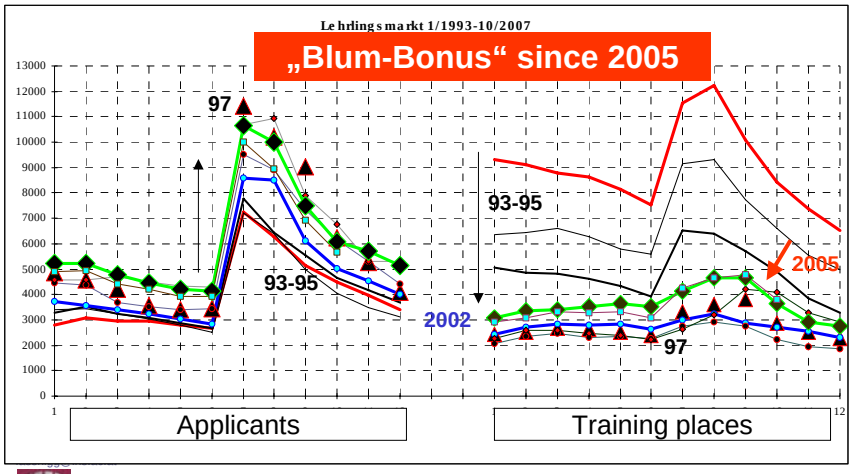
# Apprenticeship market (monthly figures)

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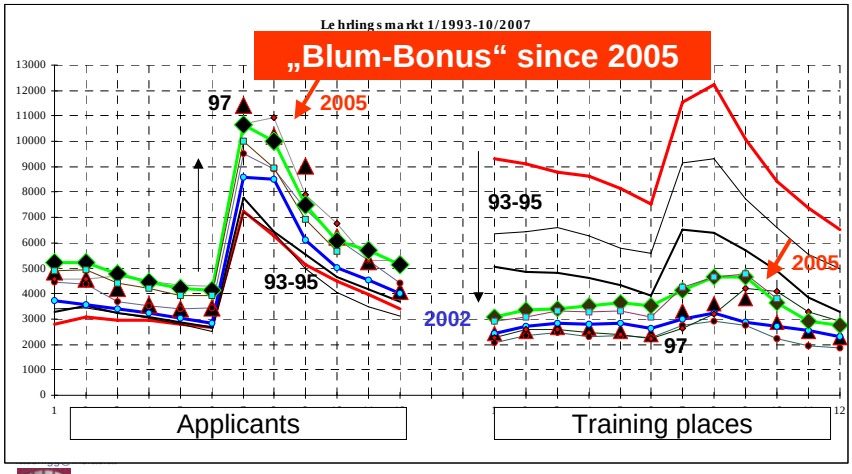

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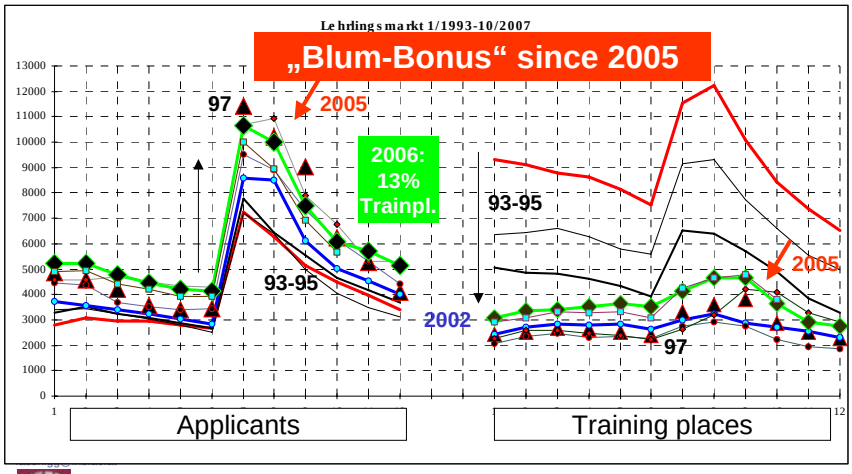


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# … profile

- early age
- individual or small groups of apprentices
- mainly plain on-the-job-training - seldom training infrastructure

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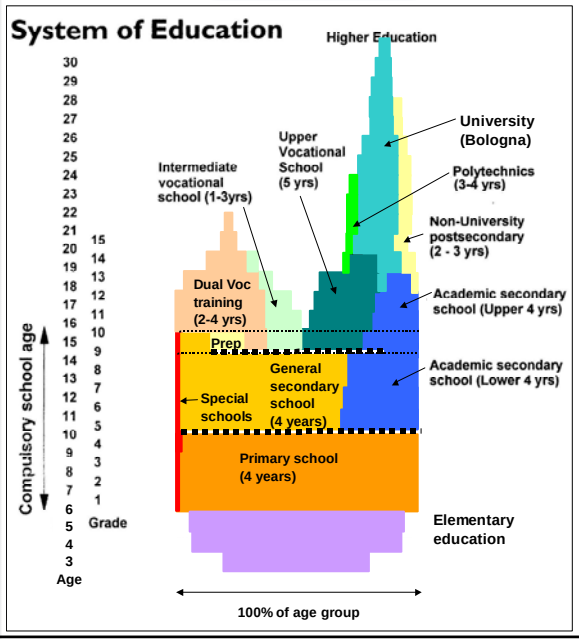


## early age

Apprentices:
74% of age 15-16,
only 14% above 18y.
(79% in Germany)

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## Structure (1990s)

**Enterprise/group size:**

- half of apprentices are trained **alone**, further 20% are trained with **one colleague - gives about 70% of apprentices trained in "individualised" settings**
- only with 30% of apprentices we can expect a group of **3 or more**, which would indicate **a continuous recruitment and training process**
- in 15% of cases apprentices are trained in groups of **five or more**, where we can expect some economy of scale, and some continuous experience with the full training process
- training in bigger groups of apprentices with **10 or more** colleagues is experienced only by 5% of Austrian apprentices, clearly a small minority.

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# Structure (1990s)

## Acitivities of apprentices (average):

- half of total time productive work
- thereof one third simple activities
- time in enterprise: 2/3 prd.work, 2/5 simple activities
- 20% of total time enterprise instruction
- 20% of total time external instruction (part-time school, other)

## Infrastructure/Trainers:

- weak infrastructure (workshop/facilities, trainer full-time, part-time with reduced productivity): 40% of enterprises
- thereof 28% part-time trainers with reduced productivity only
- 7% strongly formalised training (workshop, full-time trainers)
- **60% without infrastructure**: only part-time trainers without reduced productivity ("training on the job")

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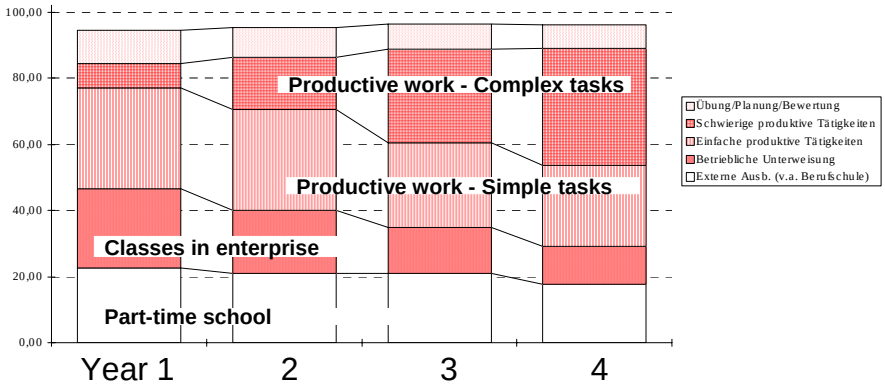
# Time for work and learning

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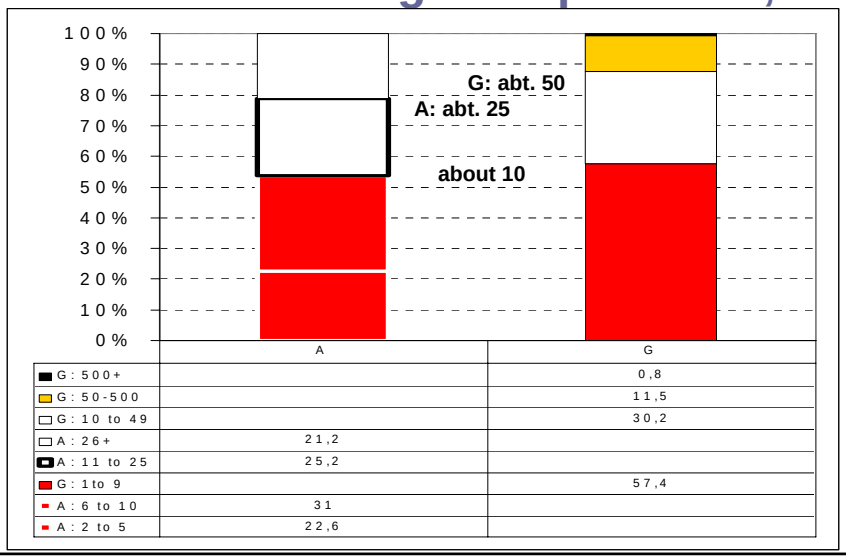
# Size of training enterprises: A, G




| | A | G |
|---|---|---|
| G : 500+ | | 0,8 |
| G : 50-500 | | 11,5 |
| G : 10 to 49 | | 30,2 |
| A : 26+ | 21,2 | |
| A : 11 to 25 | 25,2 | |
| G : 1to 9 | | 57,4 |
| A : 6 to 10 | 31 | |
| A : 2 to 5 | 22,6 | |

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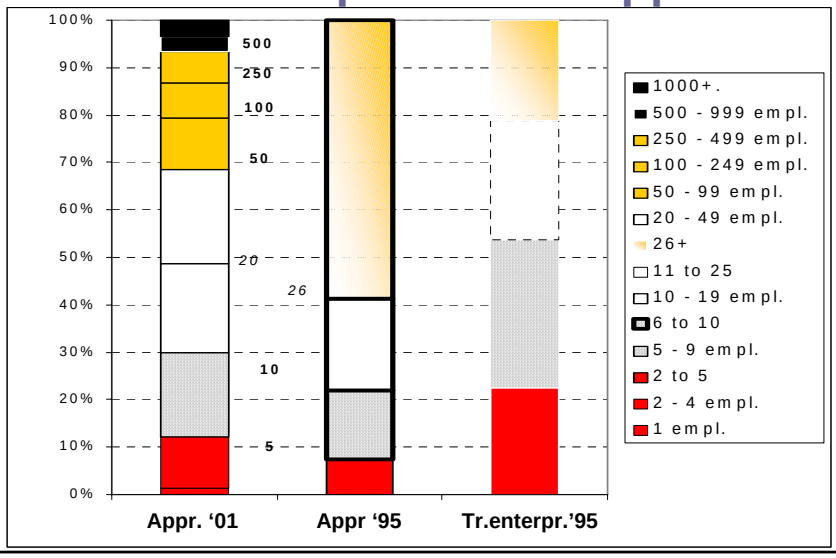
# Size of tr.entpr: Distr.of apprentic.



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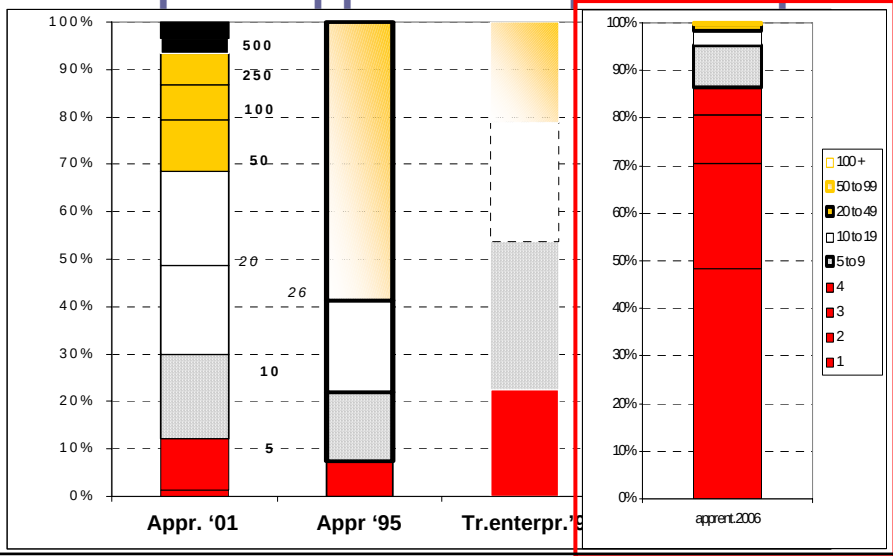
# Groups of apprentices per tr.entpr

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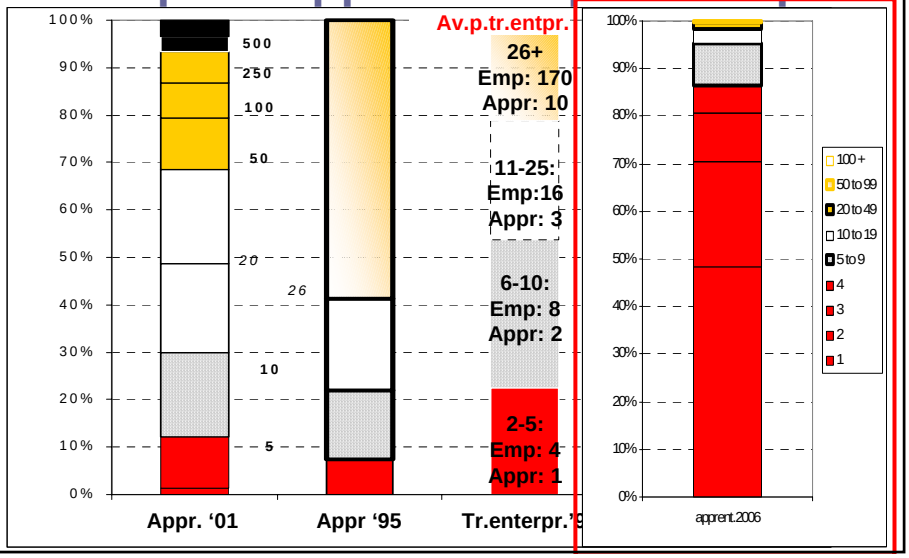
# Groups of apprentices per tr.entpr



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# … costs/benefits: A - D - CH

**Comp. D:** marked structural differences

- A gross expenditure much lower, returns much higher ("decision-relevant net costs" in D ~90% higher than in A)
- with gross expenditure differences result partly from training wage, more important are much higher investments in training infrastructure
- different focus and mechanisms: in A much lower investment in infrastructure, und higher returns from productive work, reflected by higher training wages

**Comp. CH**: no direct comparison available

- CH on average slight net-returns, very different to D
- A small net costs: position in between D and CH
- main difference to CH: link to polytechnics, in CH built on top of apprenticeship – in A (not intended) on top of full-time schooling

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# … output

**Passed examinations**

proportion of successful examinations to applicants slightly below Germany (84% vs. 86%), slightly decreased since 1990

**"Retention"**

retention (successful examinations 3yrs.past beginning) has markedly increased above 100% in the mid 1980s indicating increasing flexible applications for final exams

**Drop-outs**

no comparable measurement available; D: Drop-outs are related to the new contracts (about 20%); in A a rate of apprentices who have not finished to total number of quits of contracts indicates 35%; another estimate reports a drop-out-rate of 7%-8% of beginners is available, which seems very low

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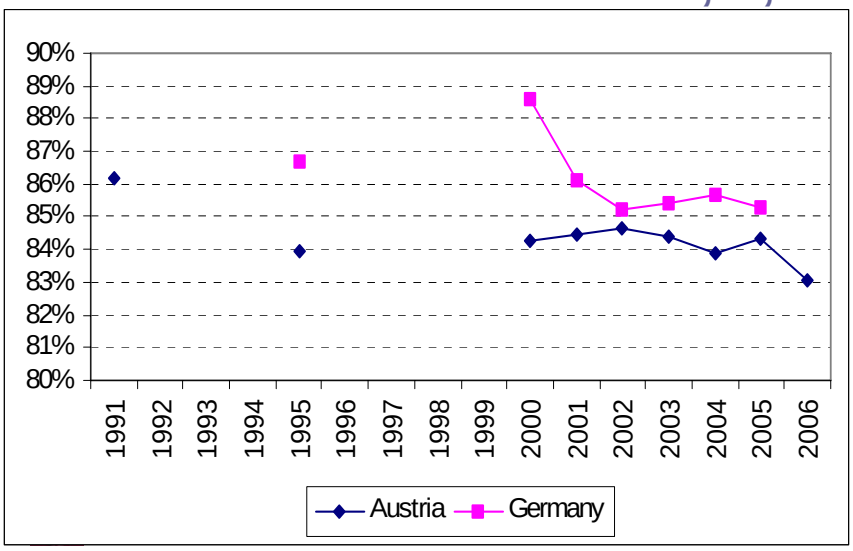
## Passed examinations, A, G

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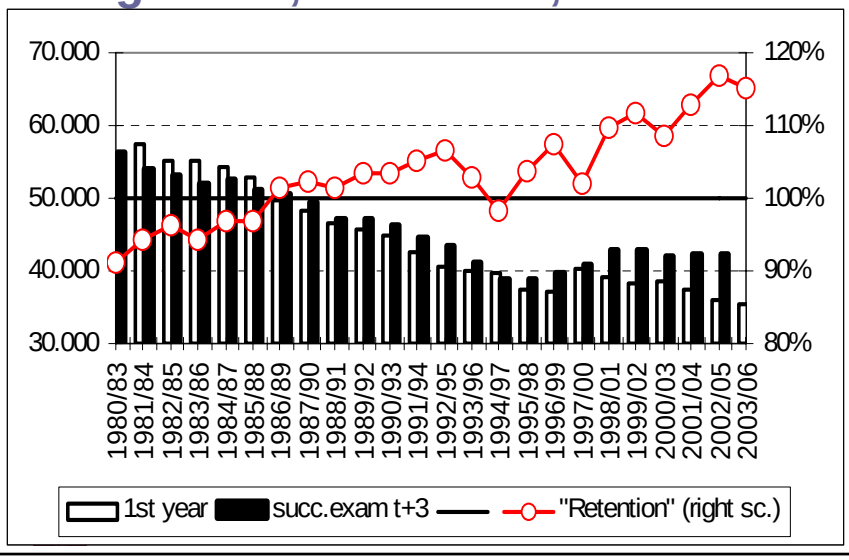
## Beginners, exams t+3, “retention”



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# …outcome

## Activity

Youth activity rate in A ~20% above EU-average (D ~5%), FIN below A, above D

## Unemployment rate

Youth unemployment rate in A below EU-average, but rise from below 30% to above 50% (D from 70% to 90%), FIN improvement from 140% to 110%

## Unemployment ratio

Youth ue ratio a bit less favourable, in A from above 30% to 70% (from above 40% to 90%), FIN above 120%

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Overall: Finland improved its relative position to EU as compared to A and D markedly

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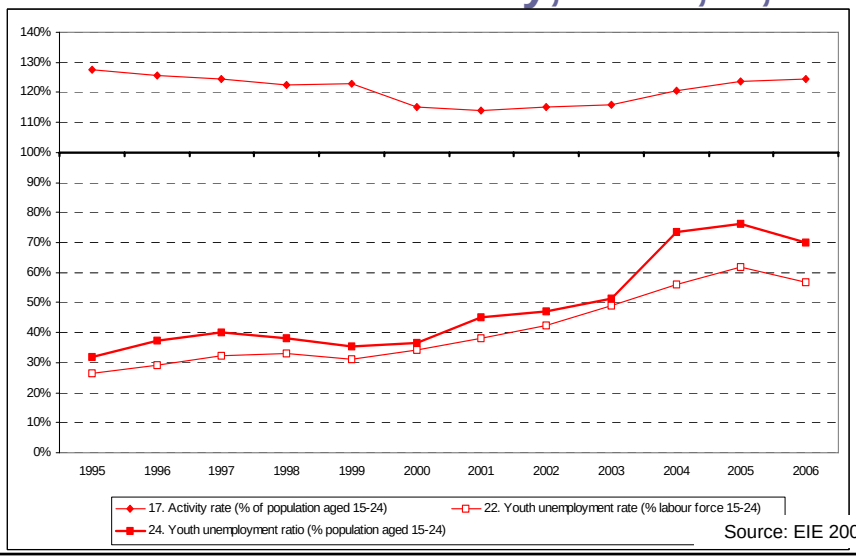
# Youth activity, ue: A, G, FI




Source: EIE 2007

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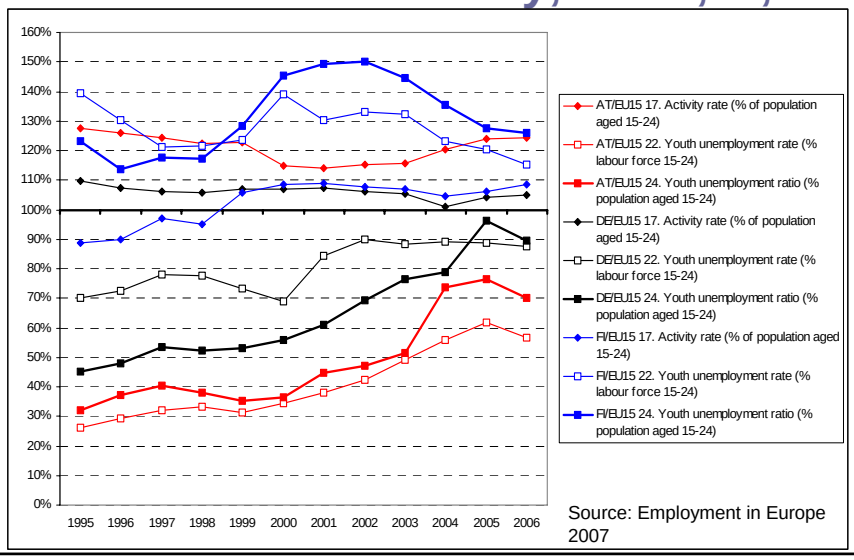
# Youth activity, ue: A, G, FI




Source: Employment in Europe 2007

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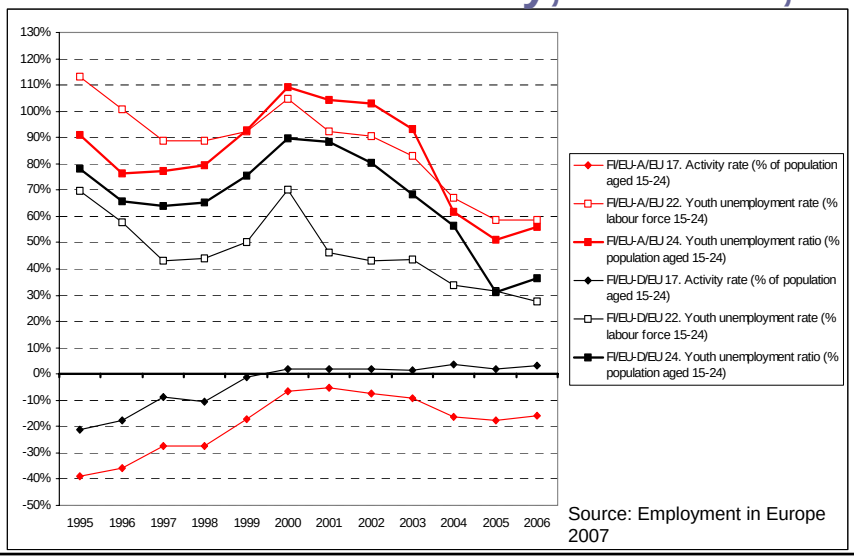
# Youth activity, ue: FI - A,D




Source: Employment in Europe 2007

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## … concentration

- demand for apprenticeships increasingly concentrated on specific economic trades representing traditional sectors (rates of training enterprises: construction (32%), manufacturing (28%), retailing and mixed services (15%), tourism (12%)
- detailed studies in the 1990s have shown that the weight of apprenticeship has increased in the traditional areas of apprenticeship, and decreased in the overall economy
- actual forecasts expect a rather stable development, with a slight decrease of active enterprises in construction and manufacturing, and a slight increase in services

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## … policy

The main Austrian policies have been
- firstly to develop new trades,
- secondly to subsidize apprenticeships,
- thirdly to lower the demands on both sides, young people (by creating less demanding profiles) and enterprises (by reducing some criteria and by releasing social security payments.

Very little has been made at the level of the basic pedagogic profile of training provision.

Overall a high rate of subsidies has been created, with an average stock of about 5.000 training places (more than 5% compared to enterprise training places) in a safety net, and about 13% of apprenticeships subsidised.

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# Agenda

- Methodology, background
- Results
- **Current problems and future prospects**

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# Main points

- Innovation and upgrading via upper level VET colleges, **little pressure for innovation** in apprenticeship, shift of costs from the private to the public sector
- **Policy challenges:**
  - first, reduction of the hierarchy of tracks;
  - second, monitoring of quality/performance at enterprise level;
  - third, integration of apprenticeship and full-time VET schooling

  **Alternative**: increase of selectivity of competing tracks?
- **Specific issues:**
  - training in individualised settings with only 1-2 apprentices
  - reduction of employment protection of apprentices right way?
  - basic rationale of costs-benefits vs. moral commitment
  - attention to quality issues, namely at enterprise level

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# Recent proposals

- Quality assurance, e.g., social partners charge subsidisation due the quality criteria (completion, learning difficulties, Trainers, additional training supply, regional demand, etc.)

- Differentiation and upgrading, linkage to higher education (e.g., via NQF, EQF)

- Reform of transition mechanism from compulsory school to VET, marked increase of counselling and orientation

- development of cooperation between enterprises and with training centers (long time no consensus)

- Modularisation: new structure of occupations

- no consensus: time flexibility between enterprise and school

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# Modularisation

17 occupational fields

Basic modules (2y, key competences), main modules (1y, broad occupational competences), special modules (1/2y, specialised occupational competences)

Training commitment: BM + MM + SM (2+1+1/2), 2-years occupations excluded

| Grundmodul | Hauptmodule | Spezialmodule |
|---|---|---|
| Elektrotechnik | - Anlagentechnik<br>- Betriebstechnik<br>- Installationstechnik<br>- etc. | - Automatisierungstechnik<br>- Metallbearbeitung |

Examination: Work + oral explanation; to be combined with enterprise project; to be combined with examination for Matura

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## The End

## Thank you !

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## Material

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