

IDENTIFYING SKILL NEEDS IN GERMANY – BIBB-IAB QUALIFICATION AND OCCUPATIONAL FIELD PROJECTIONS

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Country Experiences with Using Labour Market
Projections to Prevent Job Mismatch**

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Summary of structure

1. BIBB-IAB model set-up (construction)
2. Results by skill level and occupational fields
3. Adoption of the forecasting results
4. What if...? The power of scenarios
5. Example of feedback and further scenarios
6. Methods for identifying skill needs

1. BIBB-IAB model set-up - Instituts

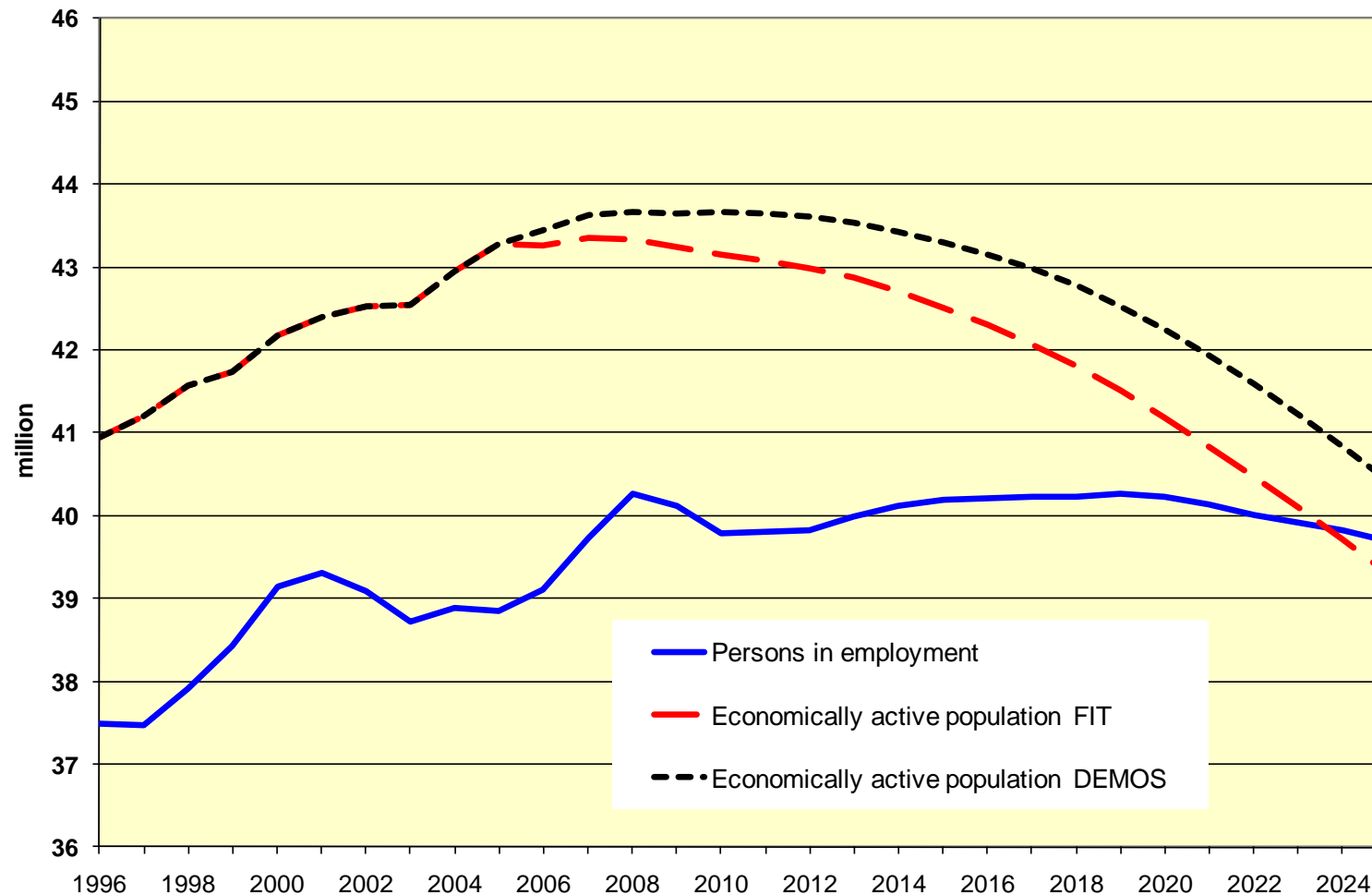
- Federal Institute for Vocational Education and Training (BIBB)
 - Data generation, taxonomy (occupational fields, initial vocational qualification)
- Institute for Employment Research (IAB)
 - Demand projection [IAB/INFORGE-model (integral element of the GINFORS global model of GWS)]
- Fraunhofer Institute for Applied Information Technology (FIT)
 - Supply projection 1 (BIBB-DEMOS model)
- Institute of Economic Structures Research (GWS)
 - Supply projection 2 (BIBB-FIT model)
- BIBB
 - Occupational flexibility matrix

1. BIBB-IAB model set-up - Components

	Demand side (IAB) Realised demand / job offers	Occupational fields 12 Major Occupational Fields (54 Occup. Fields)	Supply side (BIBB) Potential supply of labour
Data bases	Microcensus => NA level National Accounts	Microcensus BIBB-BAuA	Microcensus => NA level Population forecasts
Level of aggregation	59 economic sectors 4 skill levels (ISCED) Occupation exercised		4 skill levels (ISCED) Initial vocational qualification by specialisation recoded from Microcensus 05-08
Level of analysis	Per capita Stock variables		Per capita Stock variables New labour force supply Gender Age
Forecast models	IAB-INFORGE		BIBB-DEMOS BIBB-FIT
Results	Realised demand / job offers 2010-2025(30)	Flexibility from initial vocational qualification to occupation exercised Microcensus 05-08	Economically active population 2010-2025(30)

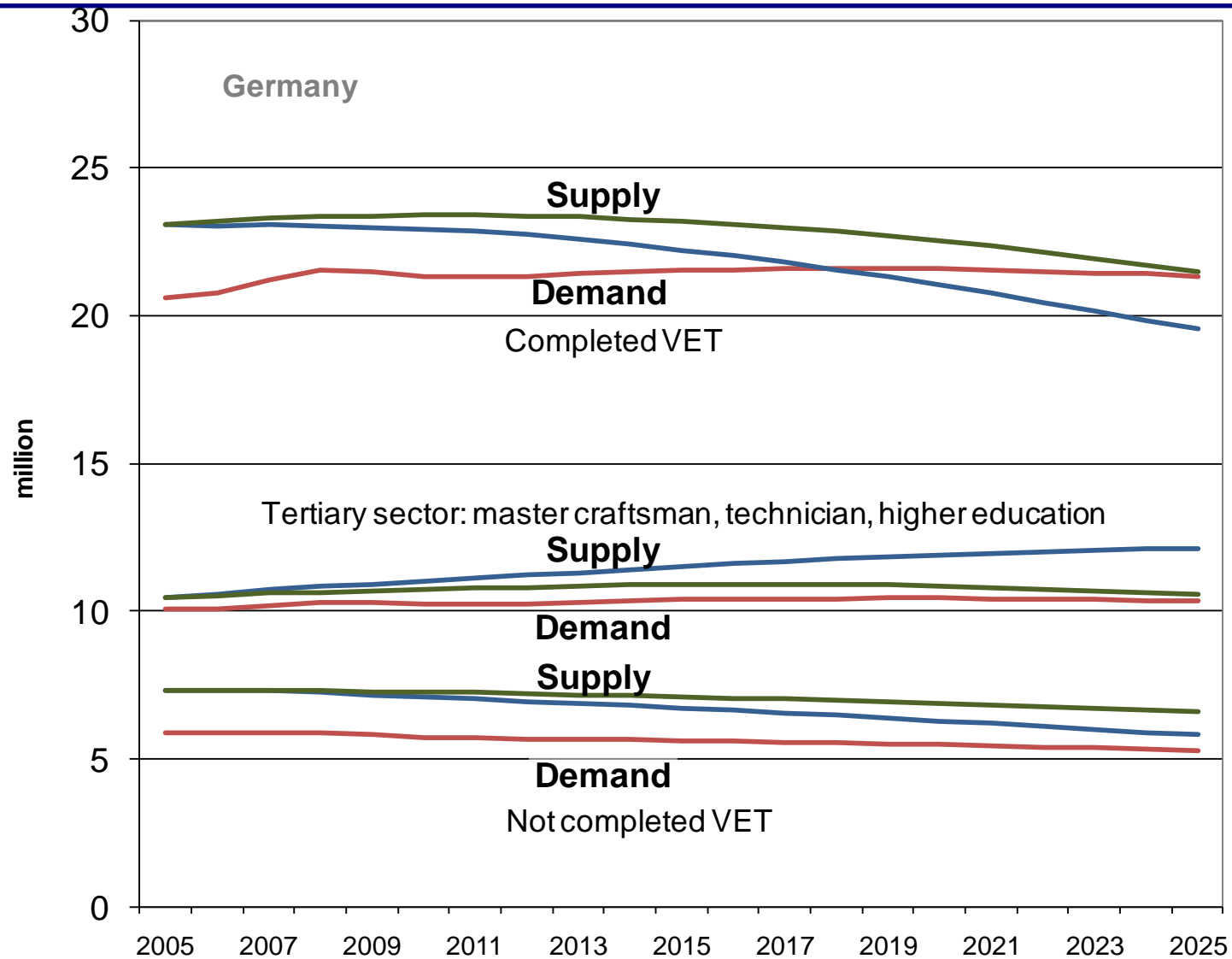
2. Results by skill level and occupational fields

➤ Demand and supply of labour – total



Source: Helmrich, Robert; Zika, Gerd (2010): Beruf und Qualifikation in der Zukunft. In: Helmrich, Robert; Zika, Gerd (Ed.): Beruf und Qualifikation in der Zukunft. Bonn 2010

2a. Results of the qualification projections

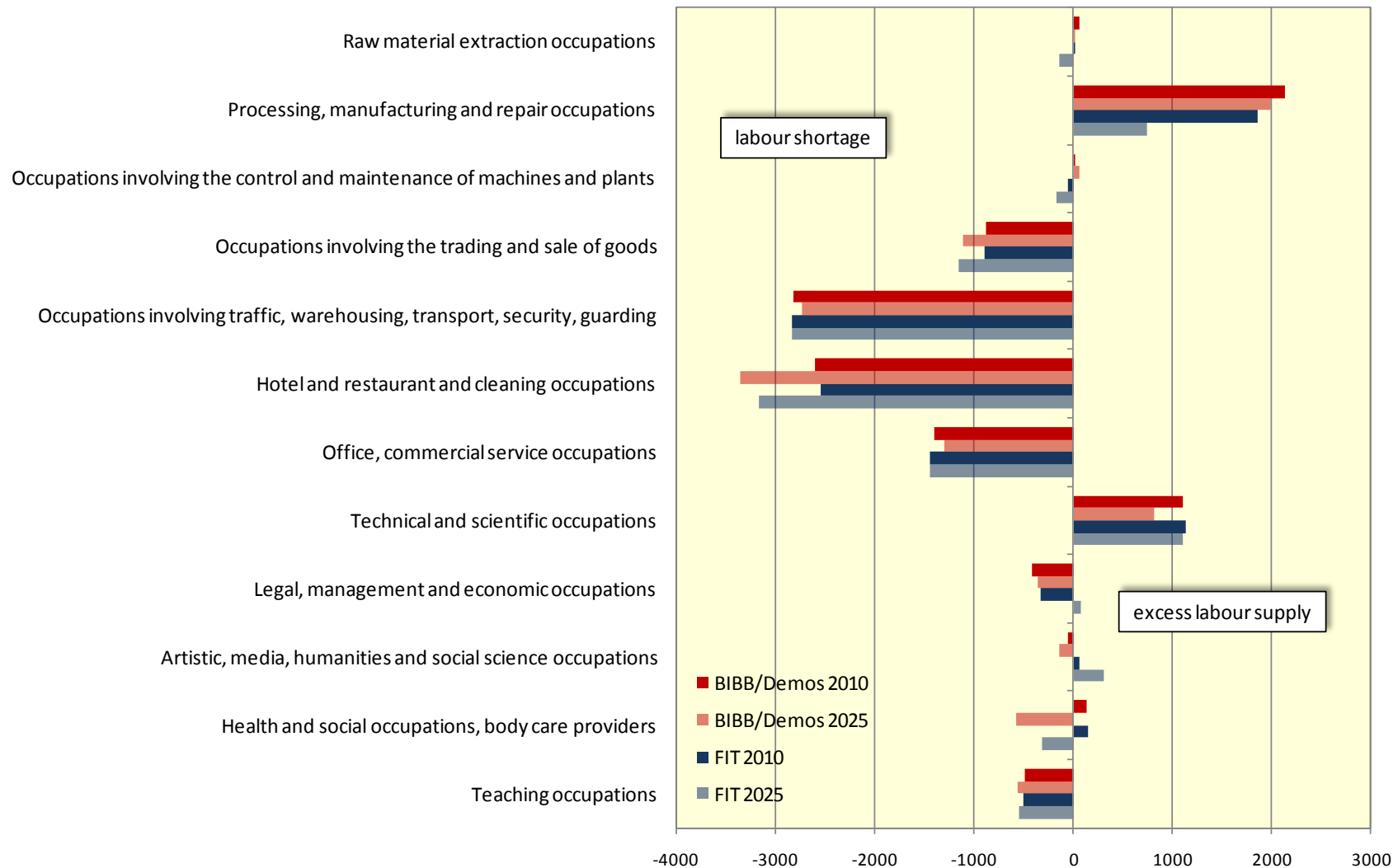


2a. Results of the qualification projections

- If the status quo persists, the low skilled (ISCED 1, 2 & 3a) will continue to be affected by high under-employment.
- Considering the medium skills level (ISCED 3b and 4) the results indicate a future shortage of labour occurring
 - between 2015 and 2020 (BIBB-FIT projection) or
 - towards the end of the project period (BIBB-DEMOS projection).
- With regard to the highly skilled (ISCED 5 and 6), the results vary between an extremely tight labour market (BIBB-DEMOS projection) all the way to an over-supply of highly skilled workers (FIT projection).

2b. Results of occupational field projections

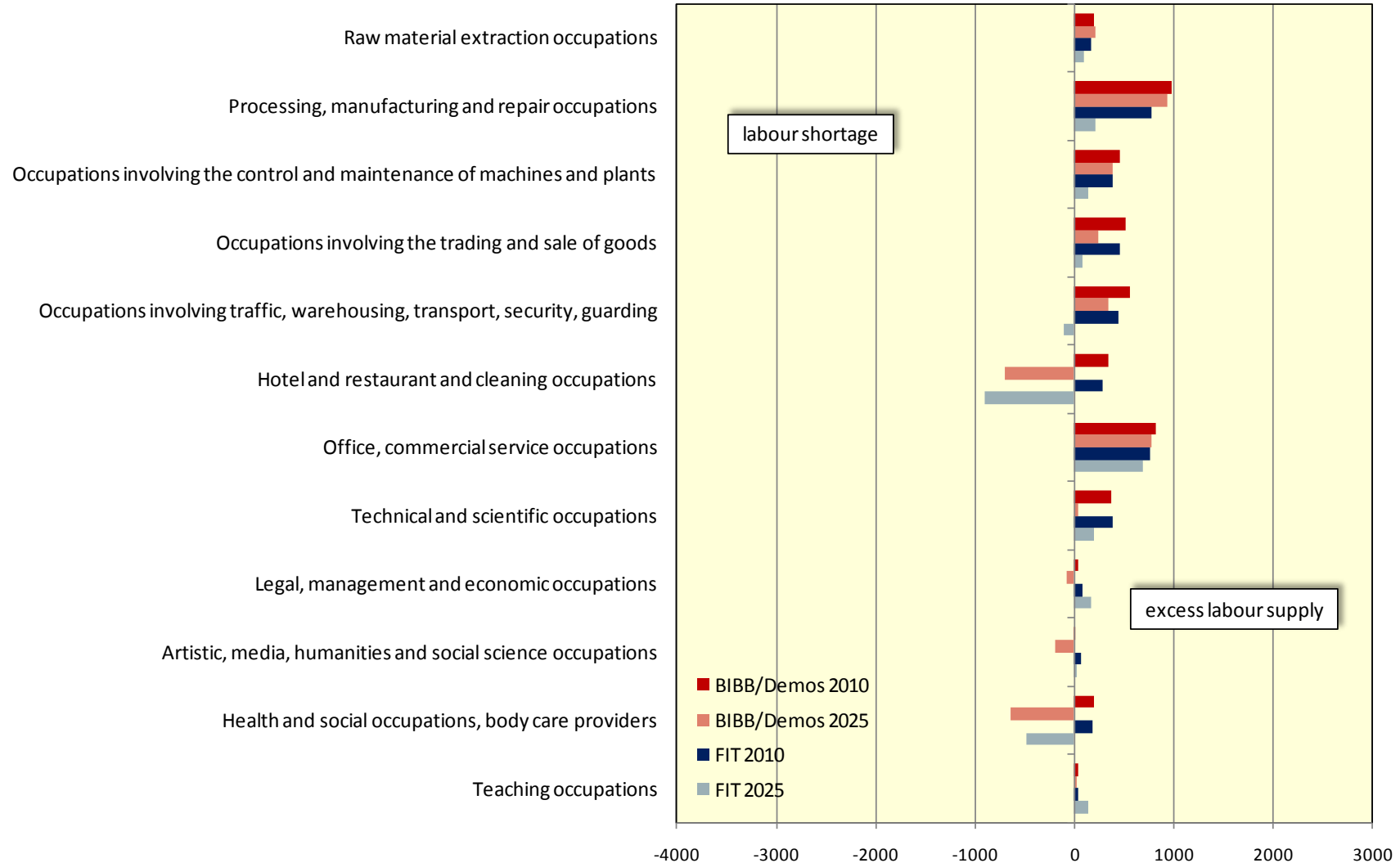
Supply and demand (trained occupation only)



Calculations of flexibilities from Microcensus 2005-2008

Major occupational field (MOF) of the occupation learned	Proportional values for change from major occupational field (MOF) learned to major occupational field exercised												
	P 1	P 2	P 3	P 4	P 5	P 6	P 7	P 8	P 9	P 10	P 11	P 12	Σ MOF
1: Raw material extraction occupations	49.5%	8.6%	3.0%	6.3%	12.8%	6.1%	5.1%	2.6%	2.1%	0.7%	2.3%	0.9%	100.0%
2: Processing, manufacturing and repair occupations	1.9%	46.3%	7.8%	6.2%	15.6%	5.7%	4.2%	7.4%	2.0%	0.9%	1.5%	0.5%	100.0%
3: Occupations involving the control and maintenance of machines and plants	1.3%	14.0%	44.3%	5.2%	11.9%	4.7%	4.4%	7.8%	2.0%	2.4%	1.7%	0.4%	100.0%
4: Occupations involving the trading and sale of goods	0.8%	2.9%	1.2%	50.4%	6.2%	9.5%	19.8%	1.3%	3.4%	1.1%	3.1%	0.4%	100.0%
5: Occupations involving traffic, warehousing, transport, security, guarding	1.1%	6.1%	2.0%	4.3%	65.3%	3.8%	11.5%	2.2%	1.4%	0.5%	1.3%	0.5%	100.0%
6: Hotel and restaurant and cleaning occupations	3.1%	5.0%	2.6%	9.7%	8.2%	56.4%	7.3%	1.1%	1.8%	0.5%	3.7%	0.7%	100.0%
7: Office, commercial service occupations	0.5%	1.2%	0.5%	8.6%	3.7%	3.5%	71.3%	2.0%	4.8%	1.1%	2.3%	0.5%	100.0%
8: Technical and scientific occupations	0.7%	8.9%	3.3%	5.0%	4.1%	2.3%	8.0%	52.0%	7.3%	3.2%	1.7%	3.5%	100.0%
9: Legal, management and economic occupations	0.2%	0.8%	0.2%	7.3%	2.3%	1.5%	26.0%	4.2%	49.3%	4.1%	1.4%	2.7%	100.0%
10: Artistic, media, humanities and social science occupations	0.3%	2.2%	0.8%	6.1%	2.3%	2.8%	10.2%	5.1%	5.9%	46.9%	4.3%	13.0%	100.0%
11: Health and social occupations, body care providers	0.4%	2.1%	0.4%	3.9%	1.7%	4.0%	6.3%	0.8%	1.1%	0.9%	74.6%	3.7%	100.0%
12: Teaching occupations	0.3%	1.2%	0.3%	1.9%	1.5%	2.1%	4.3%	1.2%	1.3%	2.2%	4.5%	79.3%	100.0%
0a: no vocational training (unskilled)	3.2%	16.1%	6.0%	11.3%	15.1%	25.5%	10.8%	2.5%	1.7%	1.9%	5.2%	0.8%	100.0%
0b: at school/in training	2.1%	19.8%	5.4%	14.5%	5.8%	13.0%	17.2%	4.8%	0.7%	3.1%	12.2%	1.3%	100.0%

Supply and demand (incl. occupational flexibility)



3. Adoption of the results

- How are the results noticed?
 - The National Report of Education 2010
 - German Council of Economic Experts: „Challenges of demographic change“ 2011. Occasional Report
 - Inquiry in the German Bundestag

- Federal Ministry of Education and Research
 - Demand for different scenario calculations

- Request of pressure groups

4. What if...? The power of scenarios

➤ What can be manipulated (e.g.)?

- Supply:
 - Demographical development: migration behaviour
 - Educational participation: dropout rates at school and university
 - Participation of employment: participation rates (women, elderly)

- Demand:
 - Economic structural change: investment in research and development
 - Globalisation, growth: export sensitivity
 - Technological change: skill upgrade

- Balance of supply and demand:
 - Occupational flexibility
 - Worktime volume

5. Examples of feedback and further research

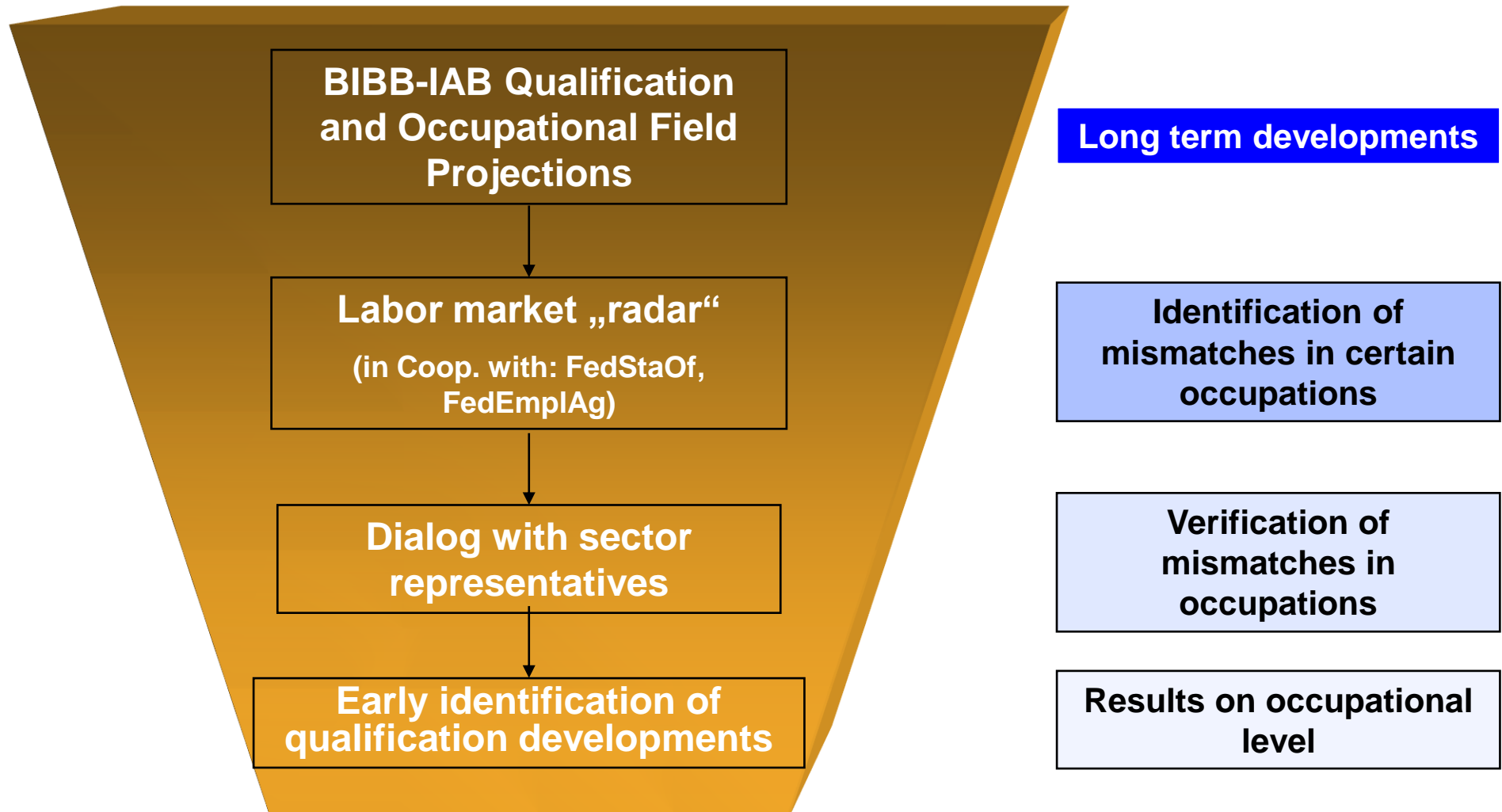
➤ Problem:

- Mismatches occur on regional level, sectors and occupations.

➤ Solution:

- More detailed forecasts for certain occupations,
 - e.g: nursing professions
- Detailed studies of economic sectors
 - Qualgary2020: Qualification Needs- and StatusQuo-Analysis of Blue-Collar-Workers in the Building Sector and Endorsement of a Roadmap for Overcoming Gaps in Germany till 2020
- Analysis of appearing qualification substitution processes
 - Impact of the Bologna Process on certificates of vocational education and training programs
 - Job advertisement analysis

6. Methods for identifying skill needs



Thank you very much for your attention!

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