

How can hi-tech come to Turkey?

Güven Sak

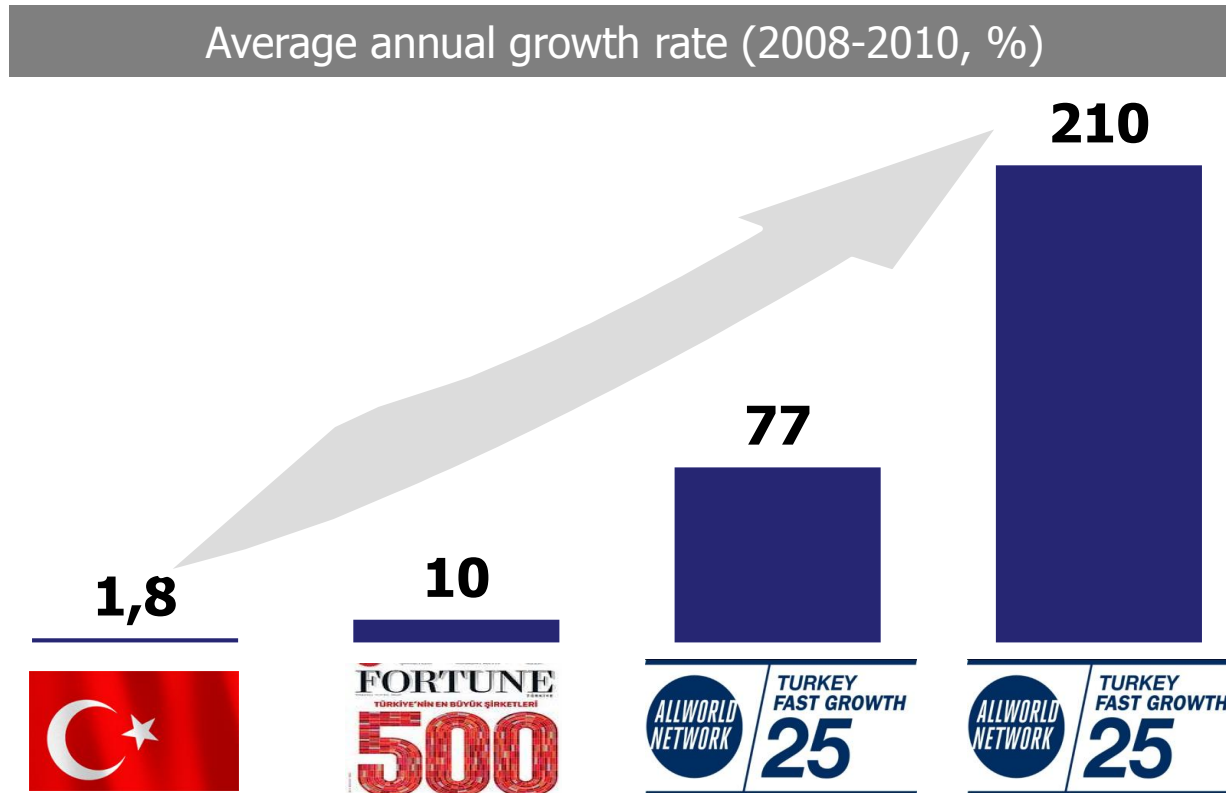
Swiss Turkish Business Forum

İstanbul, November 22, 2012

Framework

- Dynamism and vitality of Turkey
 - Fast growth companies in Turkey
- All that activity but not much hi-tech
 - Can hi-tech come automatically?
 - No
 - Why all those scientists prefer to go to Switzerland?
 - Can innovation survive in a country with a large domestic demand base?
 - It can, in the States
- Concluding comments

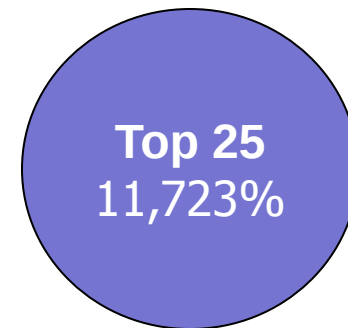
Making Turkey's star entrepreneurs visible



- Turkey 25 is an effort to identify and celebrate high growth companies.
- The pool of applicants include self-identified high growth companies with minimum conditions:
 - 2008 revenue > 100,000 USD; 2010 revenue > 500,000 USD
 - Number of employees ≥ 10 (full time)

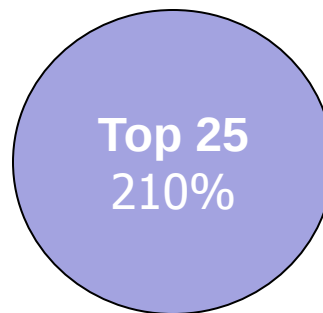
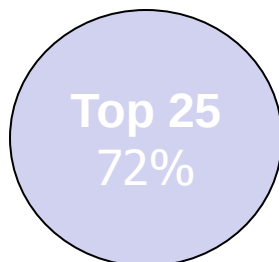
How does Turkey 25 compare to their American counterparts?

2011 **Inc. 500** ||| **500**



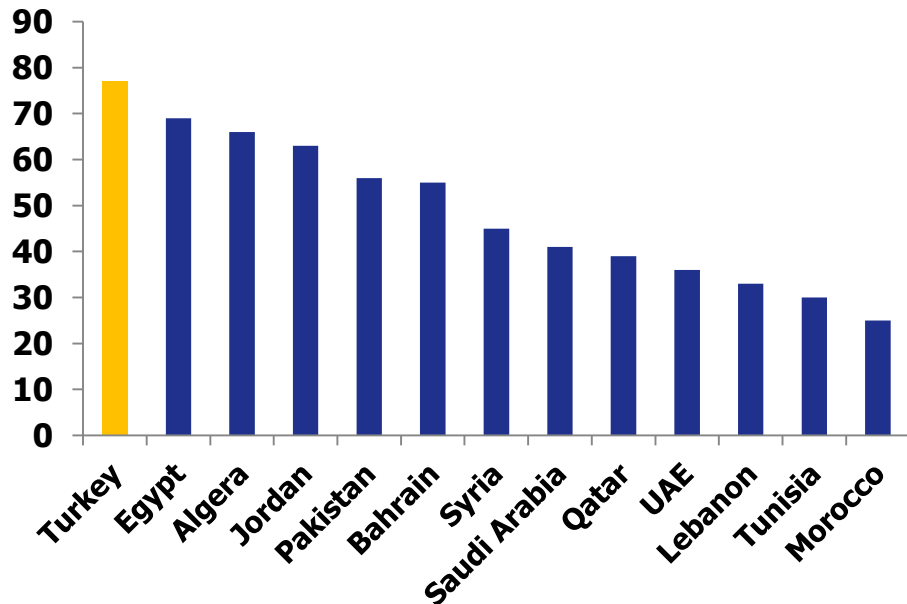
ICIC

Initiative for a Competitive Inner City

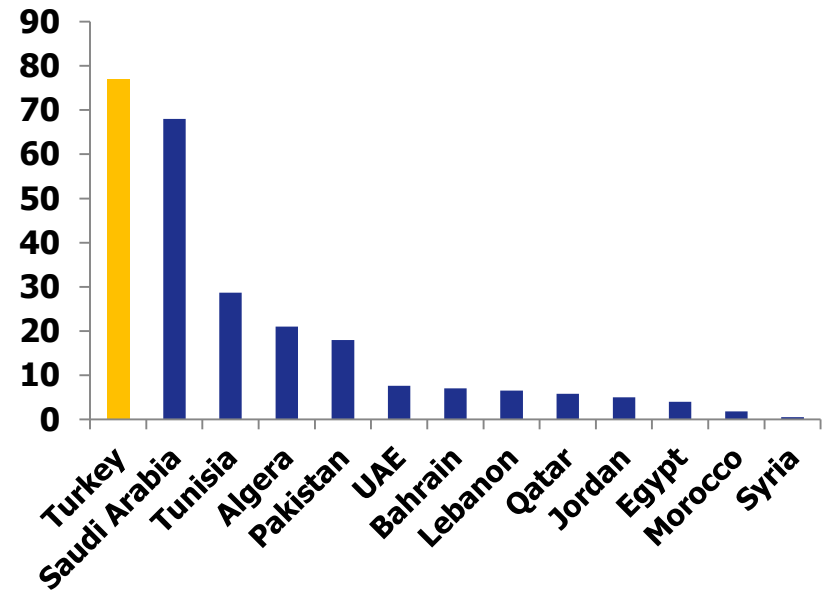


How does Turkey 25 compare to their Middle eastern counterparts? Faster & Larger

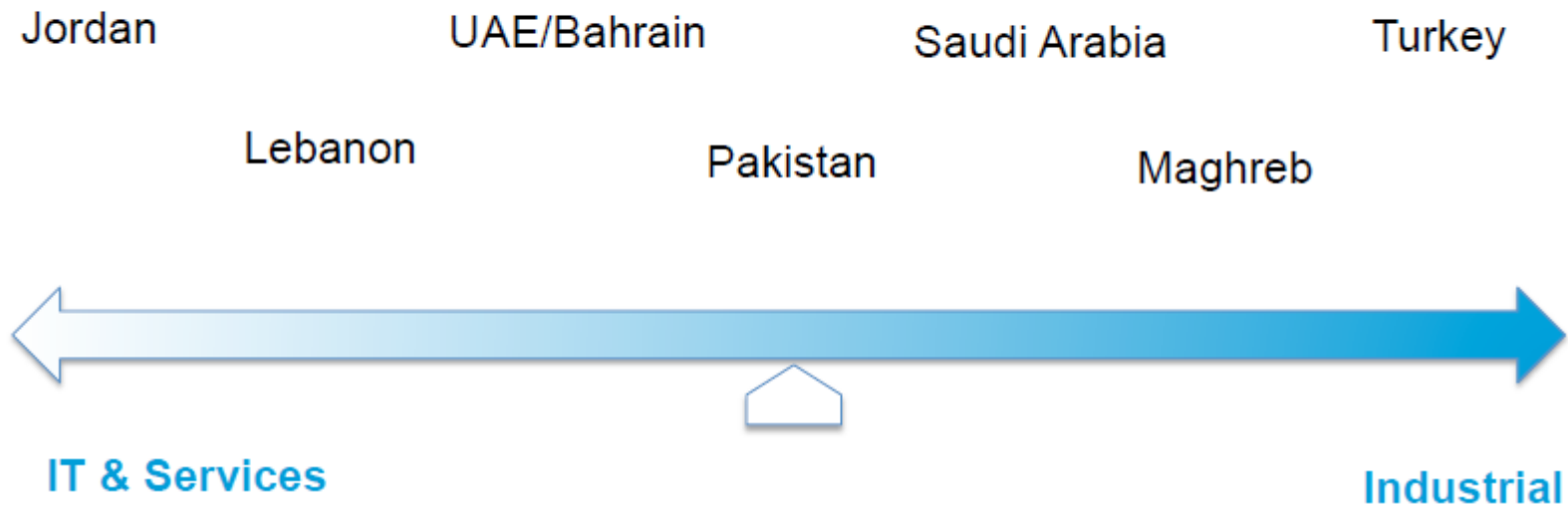
Average growth rate (% , 2008-2010)



Average size (Million USD, 2010)



Where AllWorld companies are on the economic map



Today's challenge in Turkey:

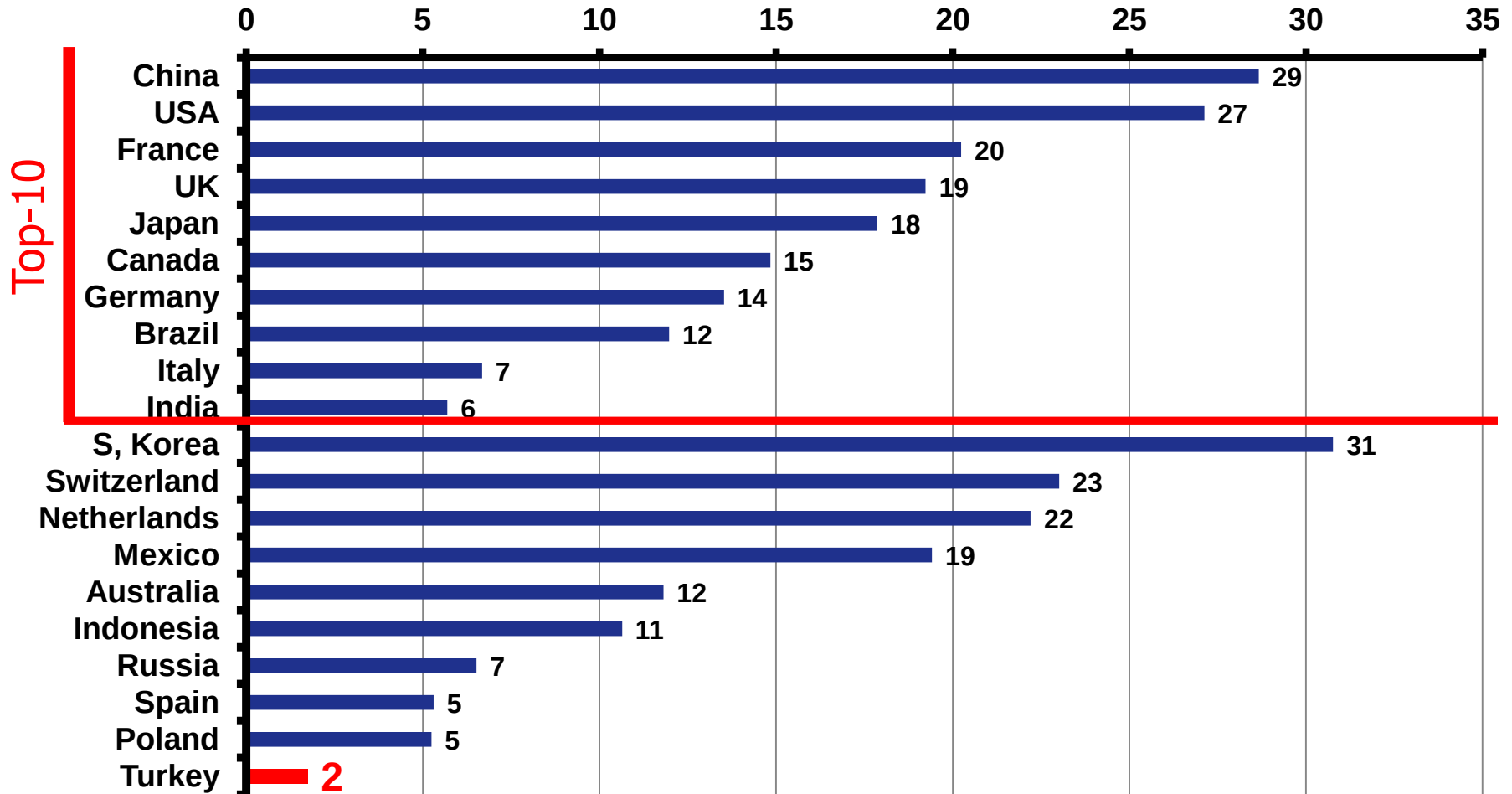
Can we become a top-10 economy by 2023?



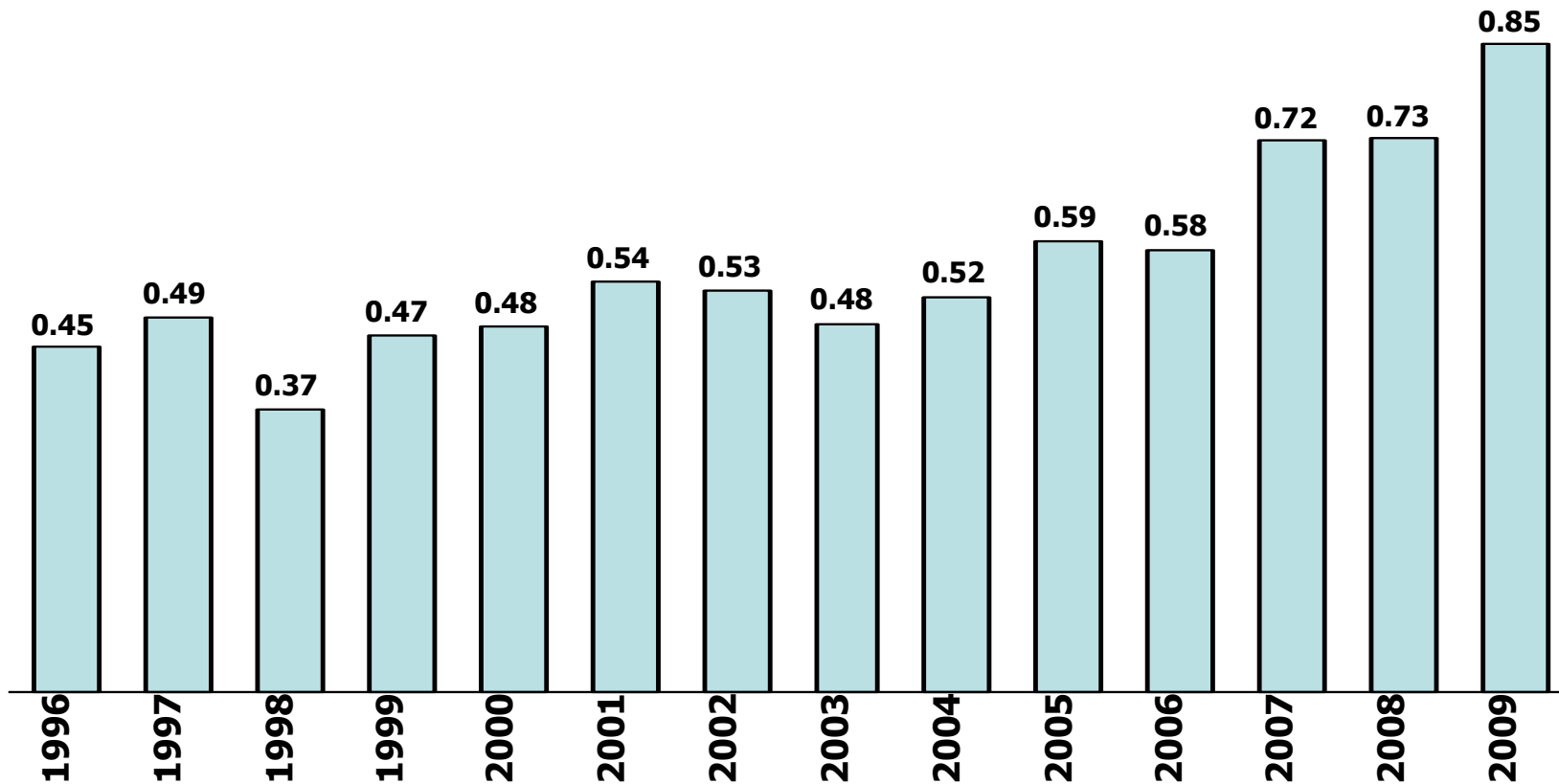
		Nominal GDP (billion USD)	Output per worker (thousand USD)
1	USA	14,582	104.9
2	China	5,879	7.9
3	Japan	5,498	87.9
4	Germany	3,310	85.4
5	France	2,560	99.5
6	UK	2,246	77.6
7	Brazil	2,088	94.8
8	Italy	2,051	89.7
9	India	1,730	4.1
10	Canada	1,574	92.4
11	Russia	1,480	21.2
12	Spain	1,407	76.3
13	Mexico	1,040	23.7
14	S. Korea	1,014	42.6
15	Australia	925	82.2
16	Netherlands	783	91.1
17	Turkey	735	32.5
18	Indonesia	707	6.5
19	Switzerland	524	113.4
20	Poland	469	31.3

Next challenge: Increasing the share of high-tech exports

High-technology exports (% of manufactured exports)



Share of R&D spending in GDP, Turkey. 1996-2009 (%)



Benchmarking: R&D inputs & outputs of selected countries

Red: If Turkey is worse

Green: If Turkey is better

	R&D Share in GDP	Private Sector share in R&D	# of Researchers in 1000 people	Quality of research institutions	Total patent applications	Patents for a million people	Industrial Design applications
Japan	3.33	2.53	10.40	11	464108	3641.48	66756
Korea	3.36	2.53	10.02	24	177937	3601.23	69970
Germany	2.78	1.88	7.74	10	169971	2078.47	109071
Sweden	3.62	2.55	10.46	9	21520	2294.70	16954
USA	2.79	2.02	9.80	6	422571	1366.00	80456
Switzerland	3.00	2.20	5.59	2	37793	4829.06	33393
Austria	2.75	1.94	8.46	21	10822	1289.90	12486
France	2.21	1.37	8.87	15	64017	983.73	60826
Holland	1.82	0.86	5.44	8	32091	1931.40	26303
Belgium	1.96	1.32	8.39	4	11402	1046.46	11152
UK	1.85	1.12	8.25	3	49849	801.03	50277
Canada	1.92	1.00	8.58	16	23647	692.93	7210
Italy	1.27	0.65	4.10	43	27200	449.71	53171
China	1.70	1.25	1.48	44	307593	229.92	421324
Mexico	0.37	0.18	0.88	49	1592	14.04	2155
Average	2.32	1.56	7.23	18	121,474	1683.34	68100
Turkey	0.85	0.34	2.71	88	4196	57.68	10450

Benchmarking: Labor market efficiency and quality of labor force

Red: If Turkey is worse

Green: If Turkey is better

	Labor market efficiency (ranking)	PISA math score (2009)	Share of vocational school graduates in total population 2010	Share of engineers in total graduates 2010	Hourly wage in manufacturing (USA=100), 2008
Austria	32	496	7,3	16,6	118,2
Belgium	50	515	17,8	11,1	145,9
Canada	4	527	24,2		102,7
China	41		3,2		4,0
France	66	497	11,5		116,7
Germany	53	513	9,6	15,7	125,9
Italy	127	483		15,2	96,2
Japan	20	529	19,5	14,6	92,1
Korea	73	546	12,2	23,8	48,0
Mexico	102	419	1,1	22,8	17,9
Holland	17	526	2,5	8,8	117,8
Switzerland	1	534	10,8	15,2	153,1
Sweden	25	494	8,8	19,3	126,1
UK	5	492	10,2	8,2	84,7
USA	6	487	9,9		100,0

Source	KRE	OECD	OECD	OECD	ABD iib, SGK
Average	41,5	489,2	10,6	15,6	103,2
Turkey	124	445	n/a	13,9	12,2

Benchmarking: Quality of institutions

Red: If Turkey is worse

Green: If Turkey is better

	IPR protection (ranking)	WJP Administrative Law (Score)	Effectiveness of Conflict resolution (ranking)	Audit and reporting (ranking)	Effectiveness of anti-trust law (ranking)
Holland	5	0.79	8	7	1
UK	6	0.79	11	13	9
Japan	18	0.80	36	39	15
Belgium	24	0.67	45	21	30
Sweden	12	0.90	5	11	3
Switzerland	4	-	4	23	16
Canada	17	0.72	9	6	21
Germany	10	0.77	20	26	24
Austria	16	0.75	25	18	29
France	9	0.72	37	34	20
USA	29	0.70	35	37	17
China	51	0.50	44	72	54
Mexico	77	0.53	100	55	115
Korea	40	0.69	80	75	38
Italy	62	0.55	139	103	100
Average	25	0.70	40	36	33
Turkey	86	0.52	61	63	31

Benchmarking: Environment related indicators

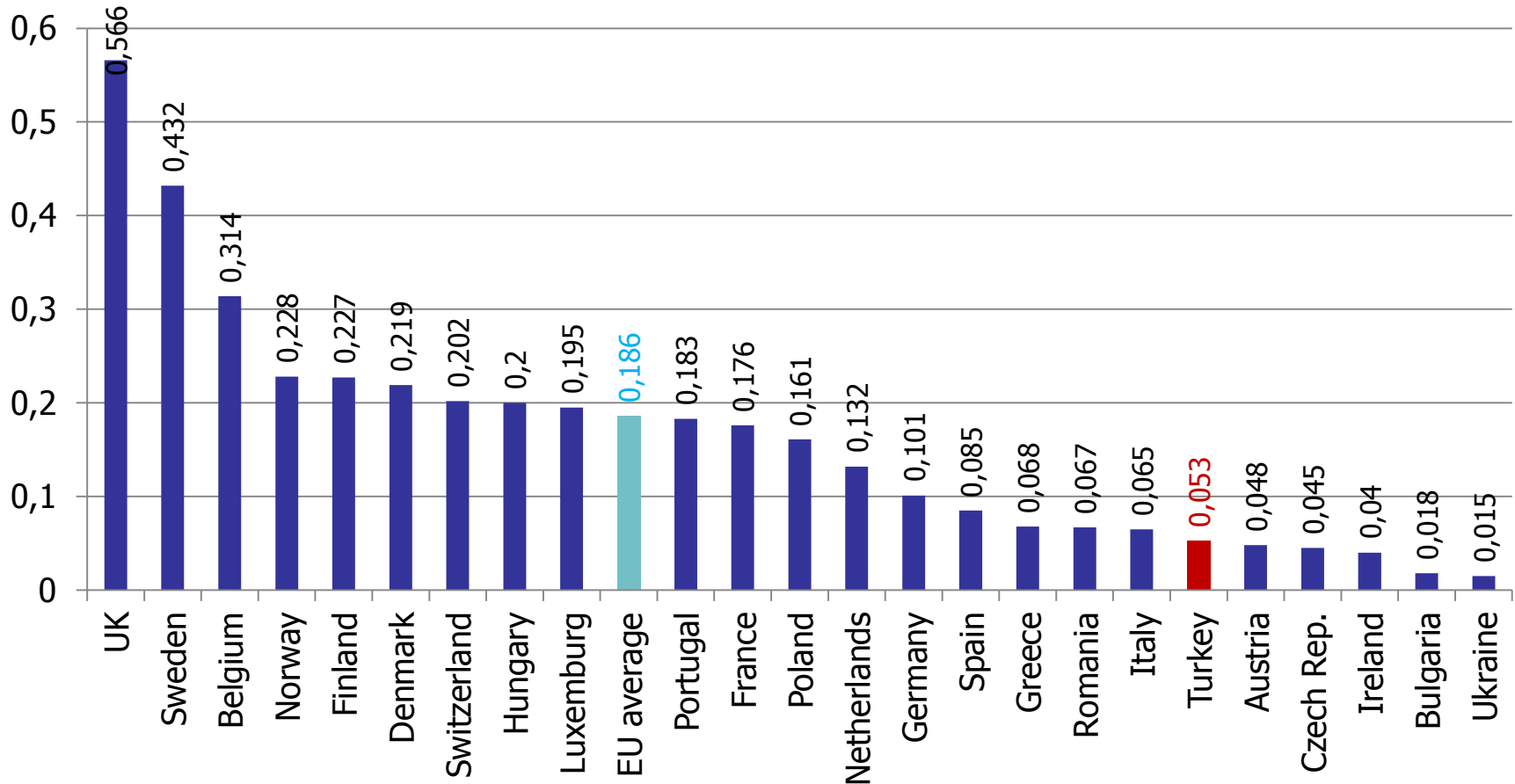
Red: If Turkey is worse

Green: If Turkey is better

	Effectiveness of environment governance	Environmental innovativeness of the private sector	Number of firms with ISO 14001 certificate per 1 billion GDP
Sweden	1.8	13.8	9.9
Canada	1.9	12.8	1.3
Belgium	1.9	10.9	1.1
USA	1.7	12.6	0.3
Holland	2.1	13.1	2.5
Switzerland	2.3	13.6	5.3
Korea	0.8	12.4	1.9
Austria	1.8	12.9	2.1
UK	2.0	13.2	1.9
Germany	1.8	13.9	1.9
France	1.7	12.5	1.5
Japan	1.1	14.24	4.0
China	0.2	10.6	0.9
Mexico	0.2	10.3	0.5
Italy	0.9	12.9	2.1
Average	1.5	12.7	2.5
Turkey	-0.2	9.2	0.3

Comparison of private equity investments in Europe and Turkey

Private Equity/GDP (%)



Concluding remarks

- It's hard to become rich without hi-tech
 - Stuck between efficiency and innovation
- Hi-tech doesn't come automatically
 - Need for a deliberate reform process
 - Creating incentives for innovation in a large domestic market is a tough business
 - No major reform since 2007 in Turkey
- 2023 targets are necessary but not sufficient
 - Good for coordination but need substance

Global Brain Trade

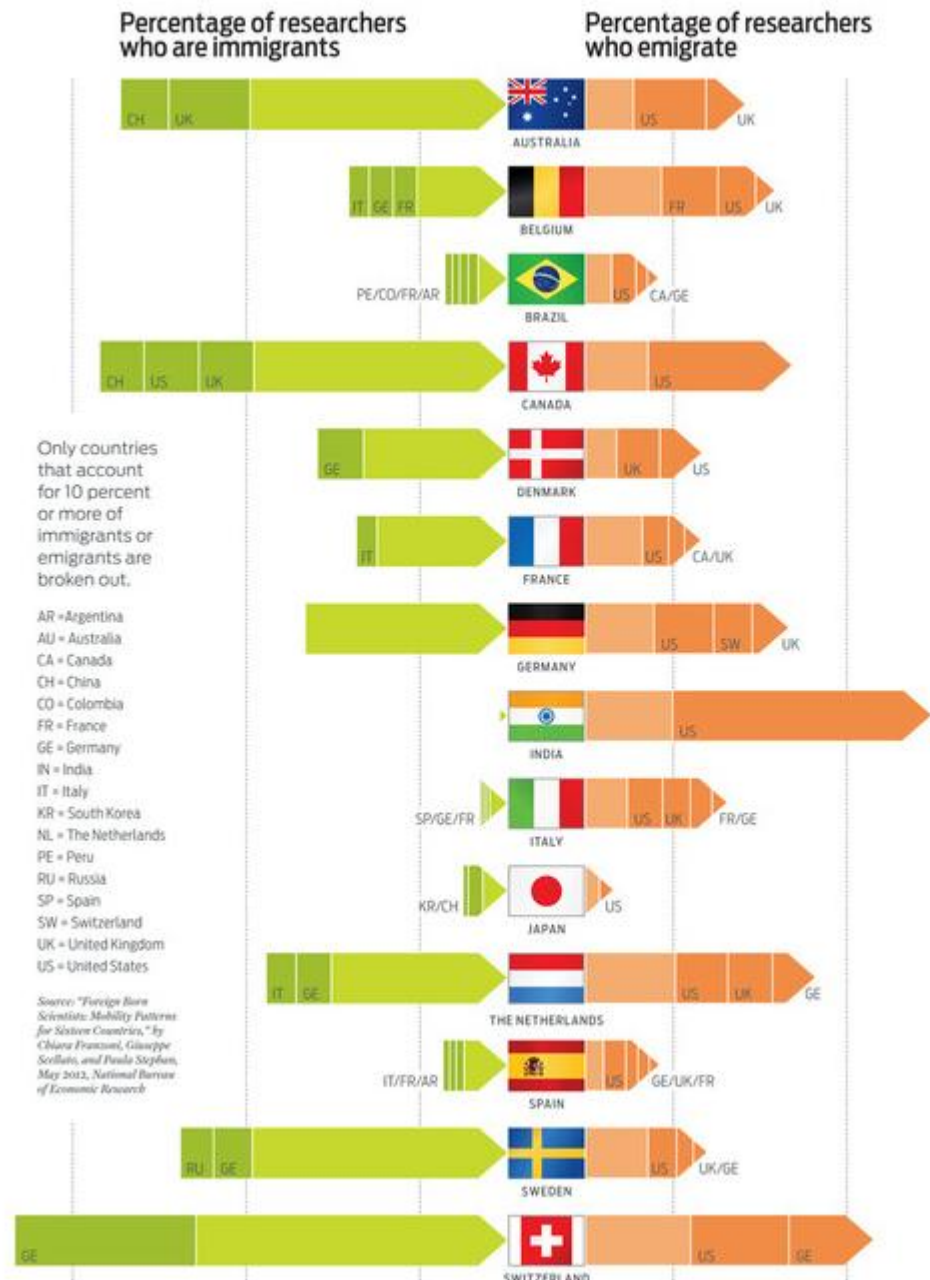


Figure 1 - Answers to question “How important was each of the following factors behind your choice to take a postdoc, employment or academic job in a country different than the one where you resided at age 18?” ranked by order of importance.

