2022

全球人才流动趋势与发展报告

GLOBAL TALENT FLOW: TRENDS AND PROSPECTS

2022年11月

CCG 全球化智库
CENTER FOR CHINA & GLOBALIZATION

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（中文版）

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引　言

中国共产党第二十次全国代表大会报告中强调，实行更加积极主动的开放战略，形成更大范围、更宽领域、更深层次对外开放格局；实施更加积极、更加开放、更加有效的人才政策；着力造就拔尖创新人才，聚天下英才而用之；完善人才战略布局，着力形成人才国际竞争的比较优势；加强人才国际交流，用好用活各类人才。由此，中国对开放、对人才国际交流与竞争的重视程度达到了前所未有的高度。

当今世界正处于百年未有之大变局。大国博弈与国际秩序重塑风云激荡，世界经济、科技、社会、文化、政治、安全格局发生深刻变化。虽然受到新冠肺炎疫情、乌克兰危机等多重局势影响，人才全球流动依旧。根据联合国教科文组织（UNESCO）的统计与预测，全球学生跨国流动人数从 2000 年的 200 多万人增加到 2019 年的 600 多万人，增长了 2 倍。[①]而所有科学出版物中近四分之一（23.5%）有国际合著者，高于 2011 年的 18.6%。[②]人才流动与合作成为了全球化最富有弹性的方面，成为全球化进程的重要推动者。

不断追求更加美好的生活、主要经济体为应对人口老龄化和出生率下降而推出吸引国际人才的措施、跨国公司在全球拓展业务和整合人力资本等，都推动了各国人才跨区域流动。大数据和人工智能成为工业 4.0 时代的领跑者，全球劳动力市场对高科技人才的需求不断增加，进一步加剧了相关领域人才流动。

新冠肺炎疫情限制了线下人才流动，同时也促进了线上人才交流。从短期来看，为防止疫情蔓延，人才的跨国流动受到了限制。从长期来看，随着数字技术的发展，在线学习、共享实验室、网络研讨会和在线会议兴起，提高了知识在线流动，使远程学习、研究和交流成为可能并逐渐发展为常态，线上人才交流快速

① UNESCO. Future of international mobility will combine physical and digital experiences to reach a wider range of students. (2022-02-25)[2022-10-25]. https://www.iesalc.unesco.org/en/2022/02/25/future-of-international-mobility-will-combine-physical-and-digital-experiences-to-reach-a-wider-range-of-students/.
② UNESCO. UNESCO SCIENCE REPORT. https://unesdoc.unesco.org/ark:/48223/pf0000377250/PDF/377250eng.pdf.multi.

发展。这使得国际人才之间的交流与合作更加便捷，更易于打破地理边界的限制。

人才流动可以促进人口数量和素质的双重提升，缓解当地劳动力市场短缺，推进城市化发展进程，提升社会多元化水准，推动科技创新产业发展，提升经济发展潜力。突破和创新往往来自具有多元文化背景的人才团队。诺贝尔化学奖得主、英国皇家学会主席文卡特拉曼·拉马克里希南（Venkatraman Ramakrishnan）曾对媒体说，从科学研究的角度来看，科学进步的整个过程都得益于全球人才流动；面对这一趋势，我们不应限制人员流动，而是应该营造一个人们愿意在不同地方工作的研究环境。[①]

正因为人才是第一资源，人才流入带来巨大红利，各国纷纷采取有针对性的政策和措施，以争夺所需人才。例如，美国改革 H-1B 签证随机抽签方式，加强 STEM 领域高技能、高收入人才吸引力度；中国着力推动形成人才国际竞争的比较优势；日本增设高度专门职业签证，调整积分制度，提前完成 2 万名高层次人才引进目标；英国改革签证制度强化对杰出人才及优秀留学人才的吸引力；欧盟放宽流动限制，推出创业签证，推动创新创业高层次人才引进。

虽然人才竞争激烈，各种“脱钩”论调大行其道，但是，开放是时代的主题，是破除壁垒、减少误解的良药。无论是商品、资本还是人才，全球化趋势都不可阻挡。目前对人才流动的挑战，部分来自短期的全球性事件或某些国家政策变化。但有证据表明，人才发展领域更广泛的趋势是扩大交流与合作。从移民流动来看，2020 年，国际移民总数近 2.81 亿，占世界人口的 3.6%左右，相较于 2000 年的 1.73 亿和 2010 年的 2.22 亿呈增长趋势，其中约三分之二为工作型国际移民。从人才合作来看，中国和美国是迄今为止最大的双边研究合作者，从 2017 年到 2021 年，共有超过 30 万篇合著及出版物。[②]2015 年至 2020 年间，中美在顶级期刊上合著论文的数量增幅超过了任何其他国家。[③]虽然受到疫情和地缘政治因素的影响，科学家们创建的全球合作网络为全球人才更有效、更广泛的合作树立了榜样。

① 田恬，《英国皇家学会会长：科学进步受益于全球的人才流动》，《科技导报》，http://blog.sciencenet.cn/blog-336909-1027272.html.
② APRU. For the Global Common Good: APRU and the China-US Research Landscape. https://www.apru.org/wp-content/uploads/2022/07/For-the-Global-Common-Good-June-2022-Final-1.pdf.
③ Crow, James Mitchell. "US–China partnerships bring strength in numbers to big science projects." Nature 603.7900 (2022): 6-8.

在复杂的国际局势下，人才流动还肩负人文交流的桥梁纽带功能，扩大开放，推动全球人才有序流动，可更多地实现共情、减少误解、扩大共识，增进互知互信与相互友好。

对于人才，中国一直持开放与欢迎姿态。2012 年以来，中国高度重视人才工作，实施了更加开放的人才政策，推动中国从人才流出转向人才双向流动。2021 年中央人才工作会议强调深入实施新时代人才强国战略，全方位培养、引进、用好人才，加快建设世界重要人才中心和创新高地。近年来，许多在外留学或工作过的人才选择回国寻找职业机会，催生了最近的“人才回流”和“人才环流”浪潮。目前中国人才资源总量达 2.2 亿人，创新指数全球排名由 2012 年的第 34 位上升至 2021 年的第 12 位；2021 年回国创新创业的留学人员首次超过 100 万人，累计发放外国人来华工作许可 118 万份；2021 年国际专利申请量达 6.95 万件，连续第三年位居申请量排行榜第一位。[①]以开放著称的中国国际进口博览会，充分彰显了国际采购、投资促进、人文交流、开放合作四大平台作用，让世界看到了一个越来越开放的中国。

本报告旨在推动开放，促进流动；希望构建一个简单、客观的评价体系，分析主要国家的人才竞争力情况，同时分析全球人才流动的现状与趋势，为人才流动与发展提供参考；希望建立全球人才合作对话机制，促进国际人才交流，为全球人才流动提供治理方案与国际公共产品，推动共商共建共享共赢，促进达成人才发展与交流的全球共识，提升人才流动的公平性、协同性、包容性。

① 央视网. 我国 PCT 国际专利申请量连续三年第一. (2022-02-11)[2022-10-22]. http://www.gov.cn/shuju/2022-02/11/content_5673183.htm.

第一章 世界主要国家人才竞争力指数

本章按简约、可预测和国际可比的原则，建立主要国家人才竞争力评价指标体系，对相关国家人才竞争力水平进行评价，并分析中国人才竞争力的优劣势。

一、世界主要国家人才竞争力评价指标体系构建

（一）世界主要国家人才竞争力内涵

国家人才竞争力是以国家作为主体单元，评价其在国际社会经济发展的背景下，在人才流动与竞争的环境中，吸引、培育、保留和用好人才的能力。

本评价选择包括中国在内的世界上 38 个国家，包括 8 个主要工业国（G8）、19 个国际经济合作国家（G20 国家。“欧盟”虽属 G20，但作为欧洲经济、政治共同体，很多成员国与 G8、G20 中的国家有重复，故未纳入评价），大多数人口超过 1000 万且人均 GDP 超过 1 万美元的国家（少数 G20 国家人均 GDP 不足 1 万美元）；少量人口不足 1000 万人但超过或接近 500 万人且人均 GDP 为 4~9 万美元的发达国家（高收入国家）。38 个国家 2020 年的人口和 GDP 之和分别占全世界的 63.1%和 88.9%。因此，本评价具有代表性。

（二）世界主要国家人才竞争力指标体系

本指标体系数据来源主要包括：世界银行 WDI 数据库（2021）、世界知识产权组织 WIPO 数据库（2021）、联合国国际劳工组织 ILO 数据库（2021）、《财富》2020 世界 500 强企业榜单、2020 年 QS 世界大学排名 1000 强榜单。后二项用 2020 年的数据，主要原因在于这两项 2020 年的数据反映的是 2020 年的情况，而前述 2021 年数据库的数据均反映 2020 年的情况。部分数据库缺失个别国家的个别数据，缺失数据主要通过该国相应统计部门的数据补齐。

本研究建立的“世界主要国家人才竞争力评价指标体系”涵盖了人才规模、

人才质量、人才环境、人才投入和人才效能五个一级指标，包括 14 项二级指标。

人才规模指标是衡量不同国家高层次人才资源绝对数量差距的主要指标，反映不同类型高层次人才资源的绝对数量，体现了人才的规模效应。人才规模指标包括“受过高等教育的适龄劳动力人口数（万人）”“科学研究人员数（万人）”2 项二级指标。

人才质量指标是衡量不同国家高层次人才资源相对数量差距的主要指标。人才质量指标，包括“每万劳动力中受过高等教育的人数（人/万劳动力）”“每万就业人员中科学研究人员数（人/万就业人员）”2 项二级指标。

人才环境指标衡量不同国家人才资源在生活、工作、学习环境方面的优劣，是显示环境差距的主要指标。人才环境指标包括“空气中不足 2.5 微米的颗粒物含量（微克/立方米）”“人均二氧化碳排放量（吨/人）”“世界企业 500 强（评分）”“世界大学 1000 强（评分）”等 4 项二级指标。

人才投入指标衡量不同国家在人才保障、人才潜能方面的优劣，是显示人才竞争力后劲的主要指标。人才投入指标包括“公共教育经费支出占本国国内生产总值比重（%）”“研究与开发经费支出占本国国内生产总值比重（%）”“医疗卫生支出占本国国内生产总值的比重（%）”3 项二级指标。其中，“公共教育经费支出占本国国内生产总值比重（%）”反映、衡量不同国家为提高国民整体素质、培养潜在人才资源所进行财政性教育经费支出的力度和水平，显示国家在人才资源发展方面的战略高度和政策支撑力度。“研究与开发经费支出占本国国内生产总值比重（%）”反映并衡量不同国家为建设创新型国家、提升人才自主创新能力所进行财政性研发经费支出的力度和水平，显示国家在人才科技创新与发展方面的战略高度和政策支撑力度。“医疗卫生支出占本国国内生产总值的比重（%）”反映国家为提升国民体能素质、为人才队伍提供良好的医疗卫生服务和健康保障的医疗卫生投入。

人才效能指标衡量不同国家在人才使用、人才产出方面的优劣，是显示人才发展成效的主要指标。人才效能指标包括“劳动生产率（美元/就业者）”“劳动力人均有效专利数量（件/万劳动力）”“中高技术制造业增加值占制造业增加价值的比重（%）”3 项二级指标。“劳动生产率（美元/就业者）”反映不同国家人才对

经济增长的贡献作用；“劳动力人均有效专利数量（件/万劳动力）”反映人才在科技创新方面的成效，衡量不同国家人才科技创新实力和水平；“中高技术制造业增加值占制造业增加价值的比重（%）”反映人才资源的使用状况和作用发挥的程度。三项二级指标直接衡量不同国家使用人才的效果，间接衡量该国人才政策、环境对人才的不同影响。

对由此构建的“世界主要国家人才竞争力评价指标体系”，采用层次分析法（AHP）确定各二级指标的权重，见表 1.1。

表 1.1　世界主要国家人才竞争力评价指标设计

一级指标	一级指标权重	二级指标	代码	二级指标权重	资料来源
人才规模指标	0.16	受过高等教育的适龄劳动力人口数（万人）	GM1	0.07	ILO/WDI
		科学研究人员数（万人）	GM2	0.09	WDI
人才质量指标	0.20	每万劳动力中受过高等教育的人数（人/万劳动力）	ZL1	0.10	ILO/WDI
		每万就业人员中科学研究人员数（人/万就业人员）	ZL2	0.10	WDI
人才环境指标	0.20	空气中不足 2.5 微米的颗粒物含量（微克/立方米）	HJ1	0.03	WDI
		世界企业 500 强（评分）	HJ2	0.07	财富
		世界大学 1000 强（评分）	HJ3	0.06	QS
		人均二氧化碳排放量（吨/人）	HJ4	0.04	WDI
人才投入指标	0.21	公共教育经费支出占本国国内生产总值比重（%）	TR1	0.10	WDI
		研究与开发经费支出占本国国内生产总值比重（%）	TR2	0.06	WDI
		医疗卫生支出占本国国内生产总值的比重（%）	TR3	0.05	WDI
人才效能指标	0.23	劳动生产率（美元/就业者）	XN1	0.10	WDI
		劳动力人均有效专利数量（件/万劳动力）	XN2	0.05	WIPO/WDI
		中高技术制造业增加值占制造业增加价值的比重（%）	XN3	0.08	WDI

注：“WDI”即世界银行 WDI 数据库（2021），“WIPO”即世界知识产权组织数据库 WIPO（2021），“LIO”即联合国 ILO 数据库（2021），“财富”即《财富》2020 年世界 500 强企业完整榜单，“QS”即 2020 年 QS 世界大学排名 1000 强榜单。

二、世界主要国家人才竞争力评价

依据相关数据进行测算，得到2020年上述38个国家在人才竞争力总体水平的国际定位和排序，以及人才规模、人才质量、人才环境、人才投入和人才效能五个方面（一级指标）的国际比较结果。

世界主要国家的人才竞争力指数可谓旗鼓相当，都不甘示弱：美国大幅度领先，第二名韩国紧跟其后，第三名丹麦、第四名新加坡、第五名日本奋起直追，第六～九名的英国、以色列、中国、瑞典的指数分值都在45分之上。前十名中欧美国家5个，亚洲国家5个，数量上平分秋色。可以看到，世界人才中心在从欧美向亚洲扩散。

排名第10～17的瑞士、德国、芬兰、比利时、爱尔兰、法国、挪威、荷兰等8个欧洲国家处于同一档次，属第二梯队，分值在40～44之间。排名第18～25的奥地利、澳大利亚、加拿大、西班牙、新西兰、俄罗斯、葡萄牙、意大利等8国也处于同一档次，属第三梯队，分值在31～39之间。排名第26～33的巴西、沙特阿拉伯、希腊、波兰、捷克、马来西亚、印度、阿根廷等8国处于第四梯队，分值在25～30之间。排名第34～38的智利、墨西哥、土耳其、南非、印度尼西亚为后5名，竞争力指数在20～25之间。后三个梯次各国的竞争力指数之间相差不大。但是，排名首位的美国的人才竞争力指数是排在末位的印度尼西亚的3.5倍。详见图1.1。

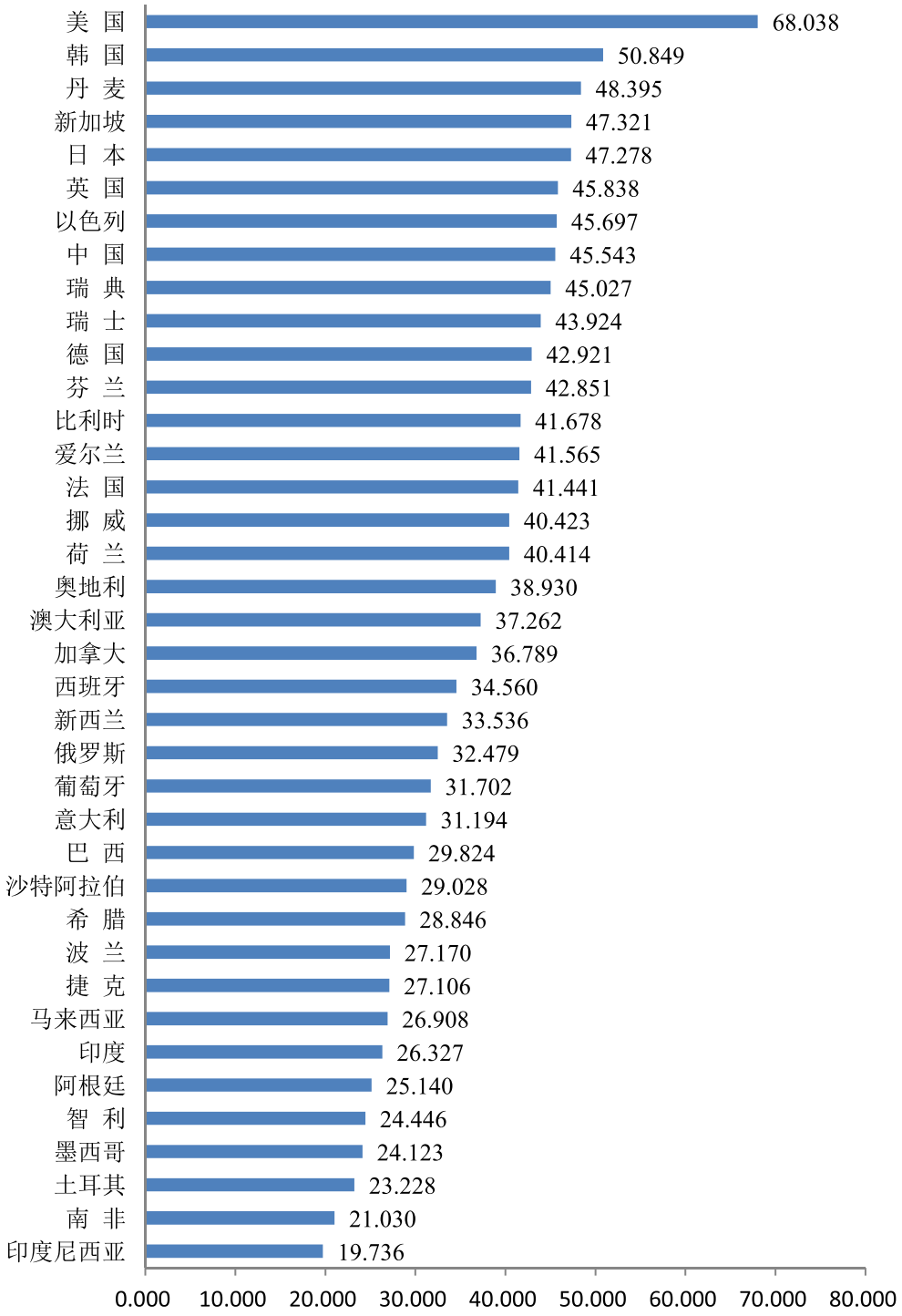

图 1.1 38 国人才竞争力指数（总体水平）的国际排序

在人才规模方面，中国和美国具有明显的竞争优势。在“受过高等教育的适龄劳动力人口数”和“科学研究人员数”两个指标方面，中国和美国遥遥领先，远远超过名列第三、第四、第五的印度、日本、俄罗斯。中国的人才规模指数是

名列第七、第八、第十的 3 个工业大国（德、英、法）之和的 2 倍多，见图 1.2。

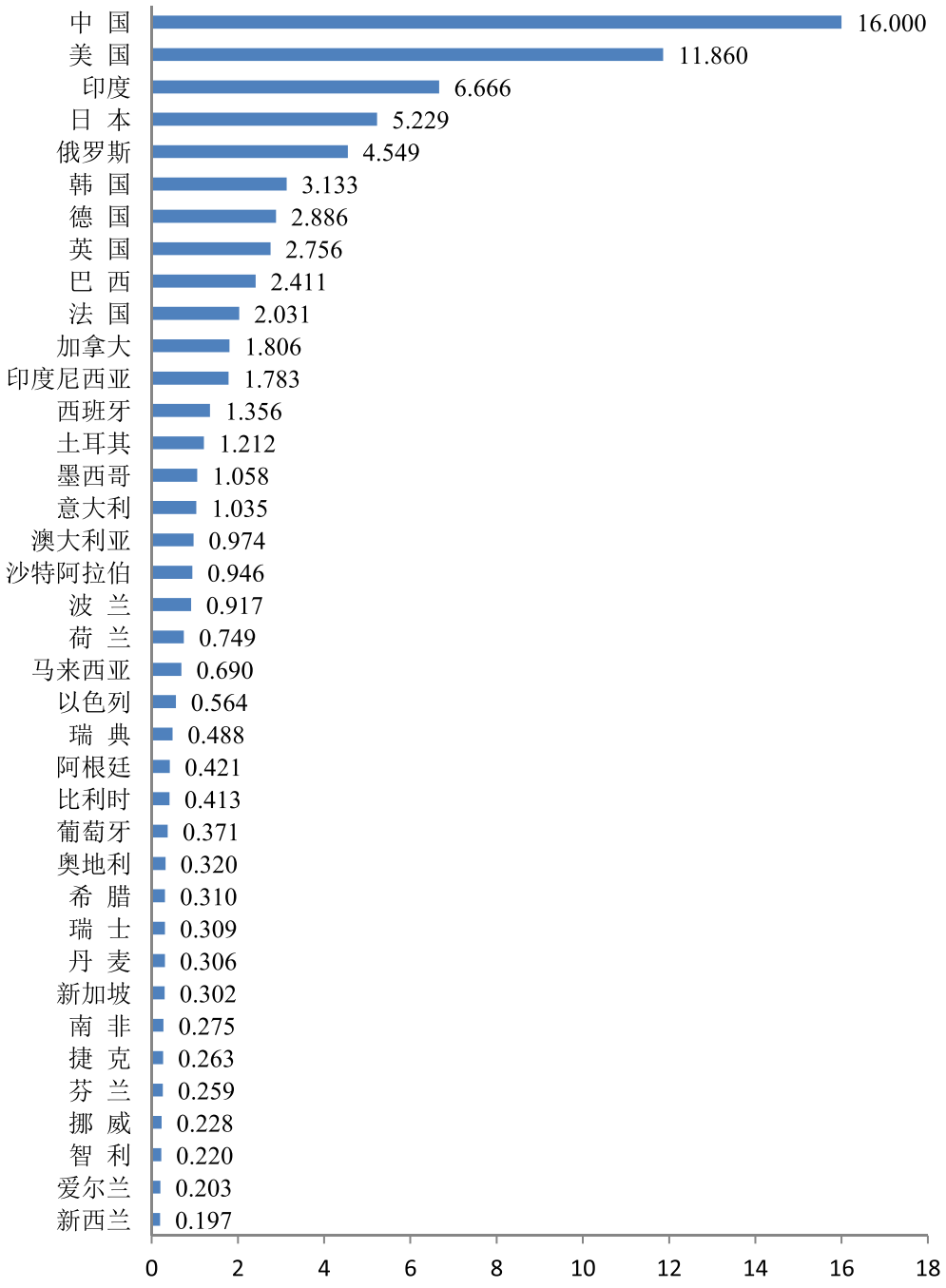

图 1.2　38 国人才规模指数的国际排序

在人才质量指数方面，新加坡、韩国、以色列三个亚洲国家排在前三位。“每万劳动力中受过高等教育的人数”和“每万就业人员中科学研究人员数”两个指标方面，新加坡位居第一，韩国紧跟其后，以色列、加拿大、丹麦、爱尔兰、英国、芬兰等 6 国也表现不俗。由于该指标主要考察人均情况，印度、中国、印尼、

南非等发展中国家劳动力市场和就业人员基数大，因此在人才质量上显示了暂时的弱势，见图 1.3。

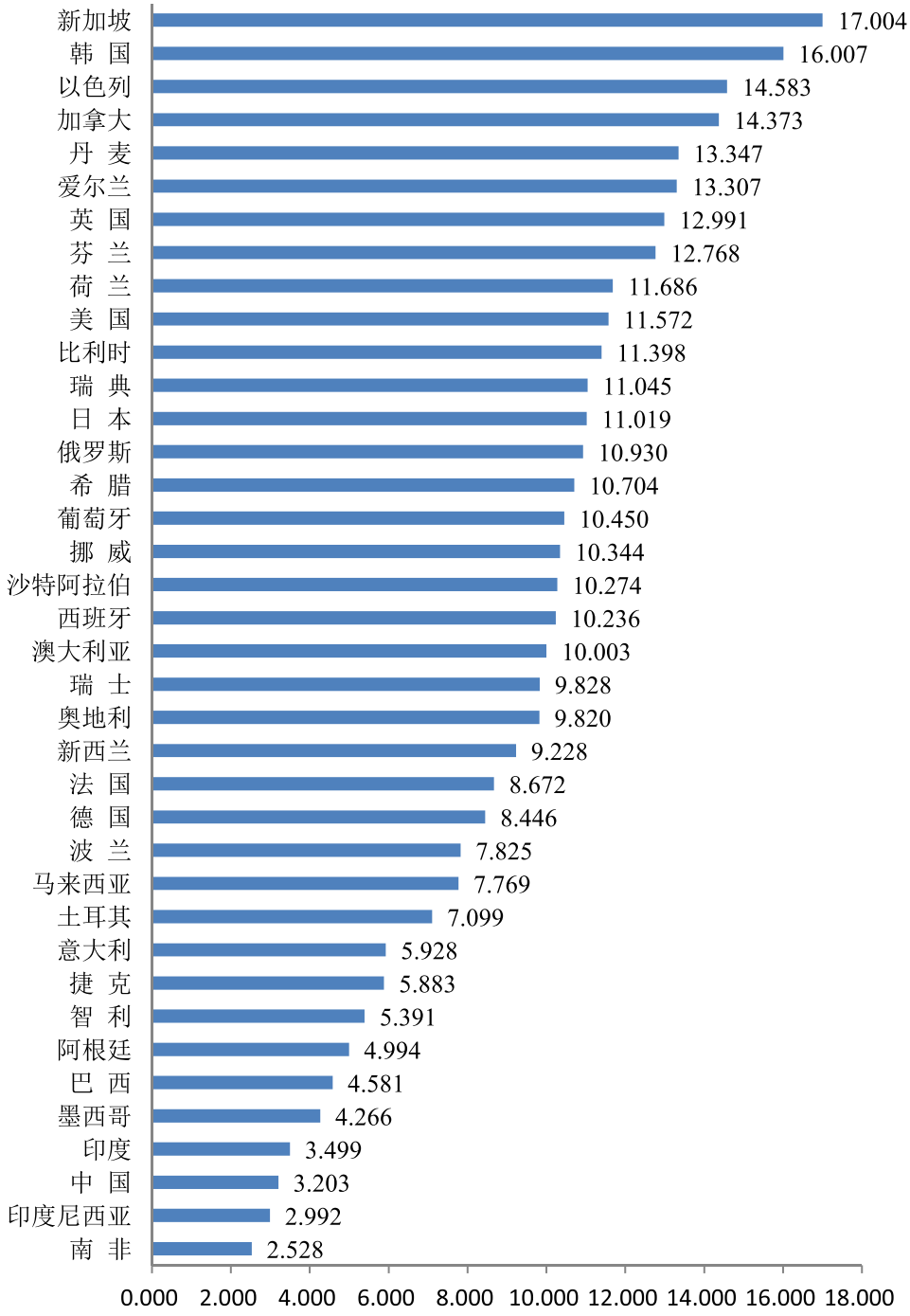

图 1.3　38 国人才质量指数的国际排序

在人才环境指数方面，美国和中国具有明显的优势。在“空气中不足 2.5 微米的颗粒物含量（微克/立方米）”“人均二氧化碳排放量（吨）”“世界企业 500 强（评分）”“世界大学 1000 强（评分）”4 项指标中，美国名列第一，中国紧跟其

后。英国、日本、法国、德国、巴西、瑞士等 6 国为第二梯次，瑞典、西班牙、印度尼西亚、意大利、阿根廷、墨西哥、葡萄牙、荷兰、丹麦等 9 国为第三梯次，新西兰、智利、挪威、爱尔兰、马来西亚、芬兰、奥地利、希腊、比利时、以色列、印度、俄罗斯、土耳其、韩国等 14 国为第四梯次，沙特处于劣势，见图 1.4。

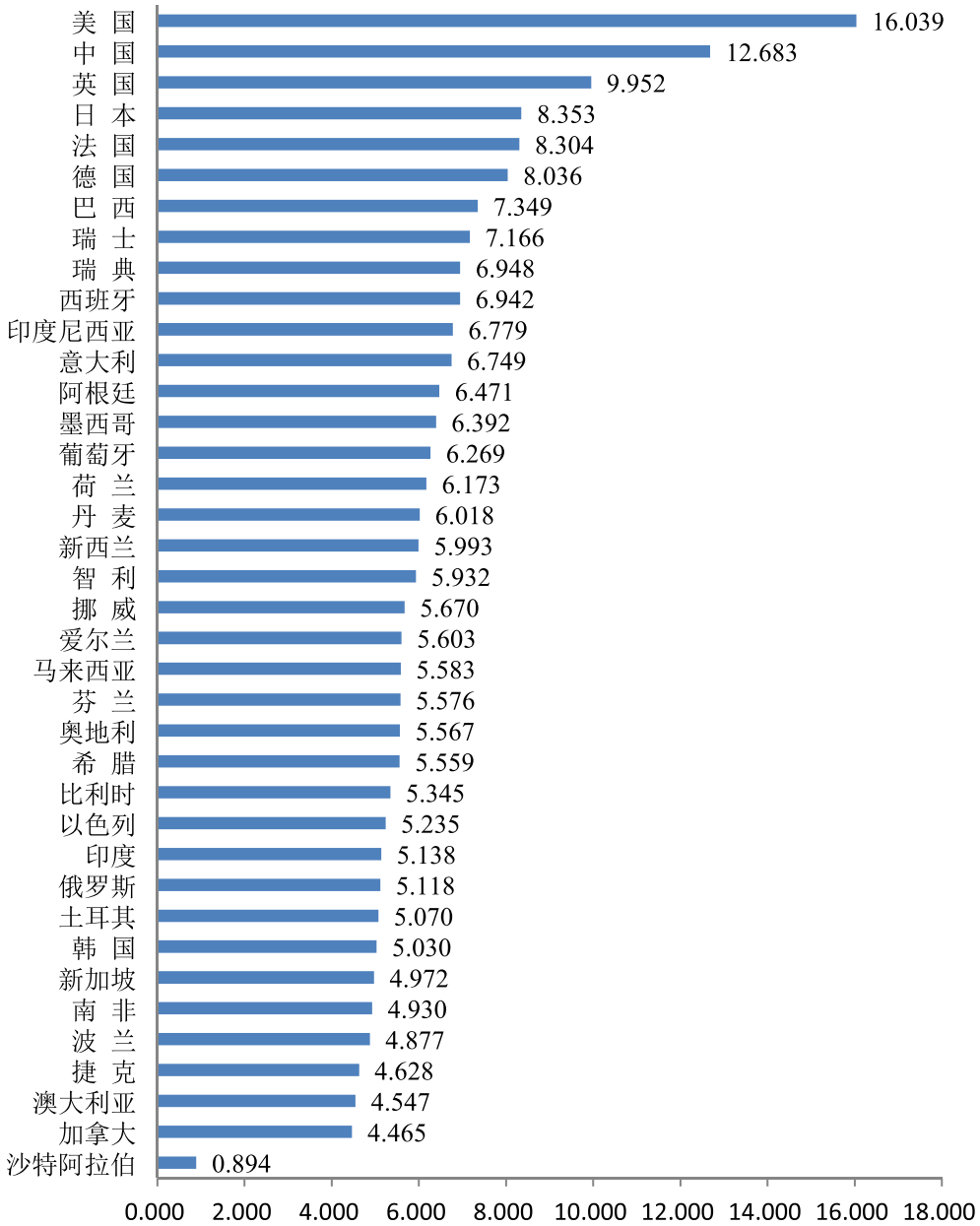

图 1.4　38 国人才环境指数的国际排序

在人才投入指标方面，丹麦和瑞典位居前两位。“公共教育经费支出占本国国内生产总值比重”“研究与开发经费支出占本国国内生产总值比重”“医疗支出占本国国内生产总值比重”3 项指标为教育、研发、医疗投入的绝对量相对于国

内生产总值的比重，丹麦、瑞典投入比重较大，得分最高；以色列、美国、芬兰、比利时紧跟其后；挪威、奥地利、德国、瑞士、韩国、澳大利亚、法国等 7 国居于第二梯队；荷兰、新西兰、巴西、英国、日本、沙特阿拉伯等 6 国居于第三梯队。中国虽然与前两名有不小差距，但与其他发达国家的差距也不大，在人才投入总额上显示了后发优势。见图 1.5。

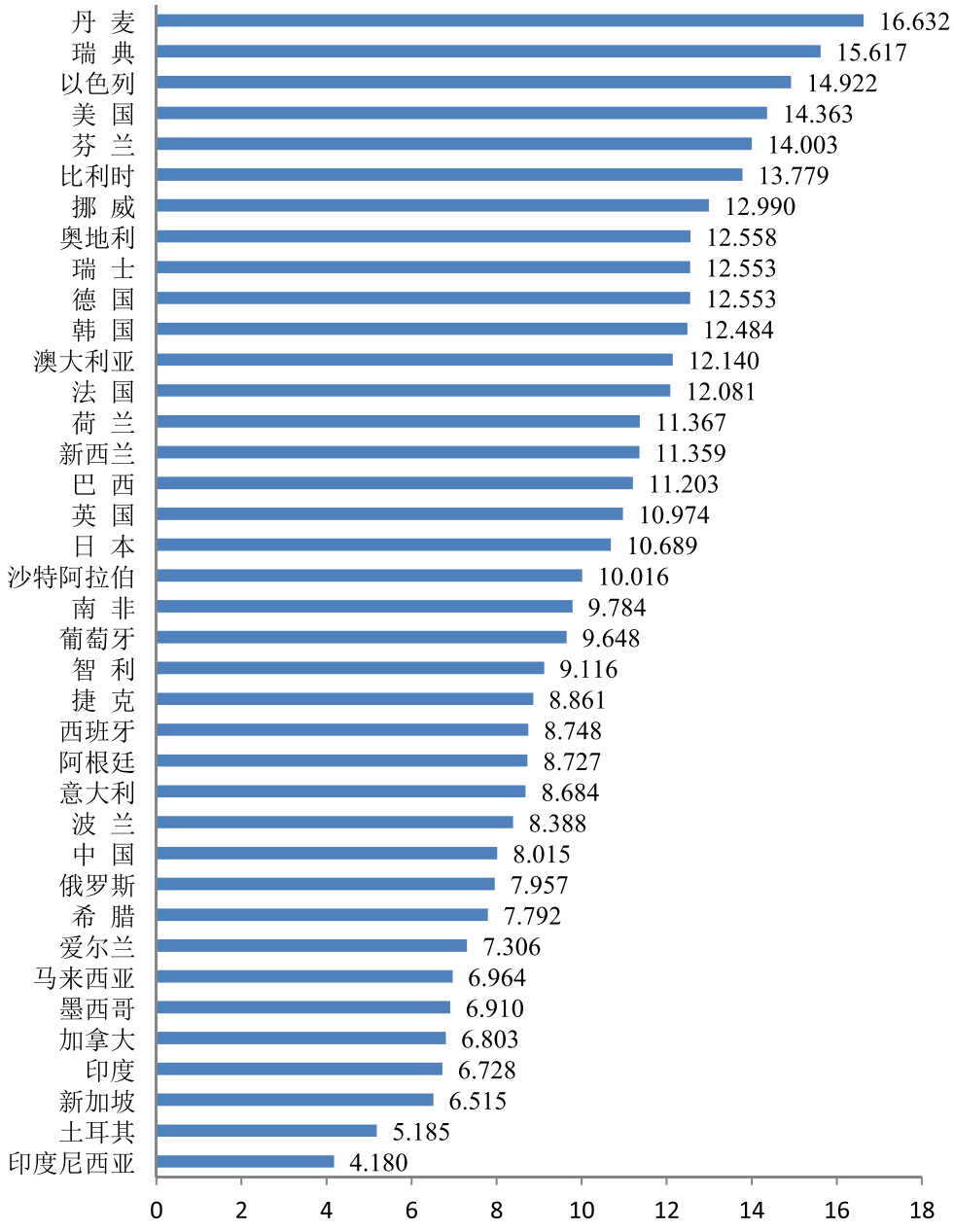

图 1.5　38 国人才投入指数的国际排序

在人才效能方面，在“劳动生产率”“劳动力人均有效专利数”“中高技术制

造业增加值占制造业增加价值的比重”等 3 项指标中，新加坡遥遥领先，爱尔兰紧跟其后，美国、韩国、瑞士也颇显实力，丹麦、日本、挪威也表现不俗。俄罗斯、智利、南非等 3 国彰显弱势，见图 1.6。

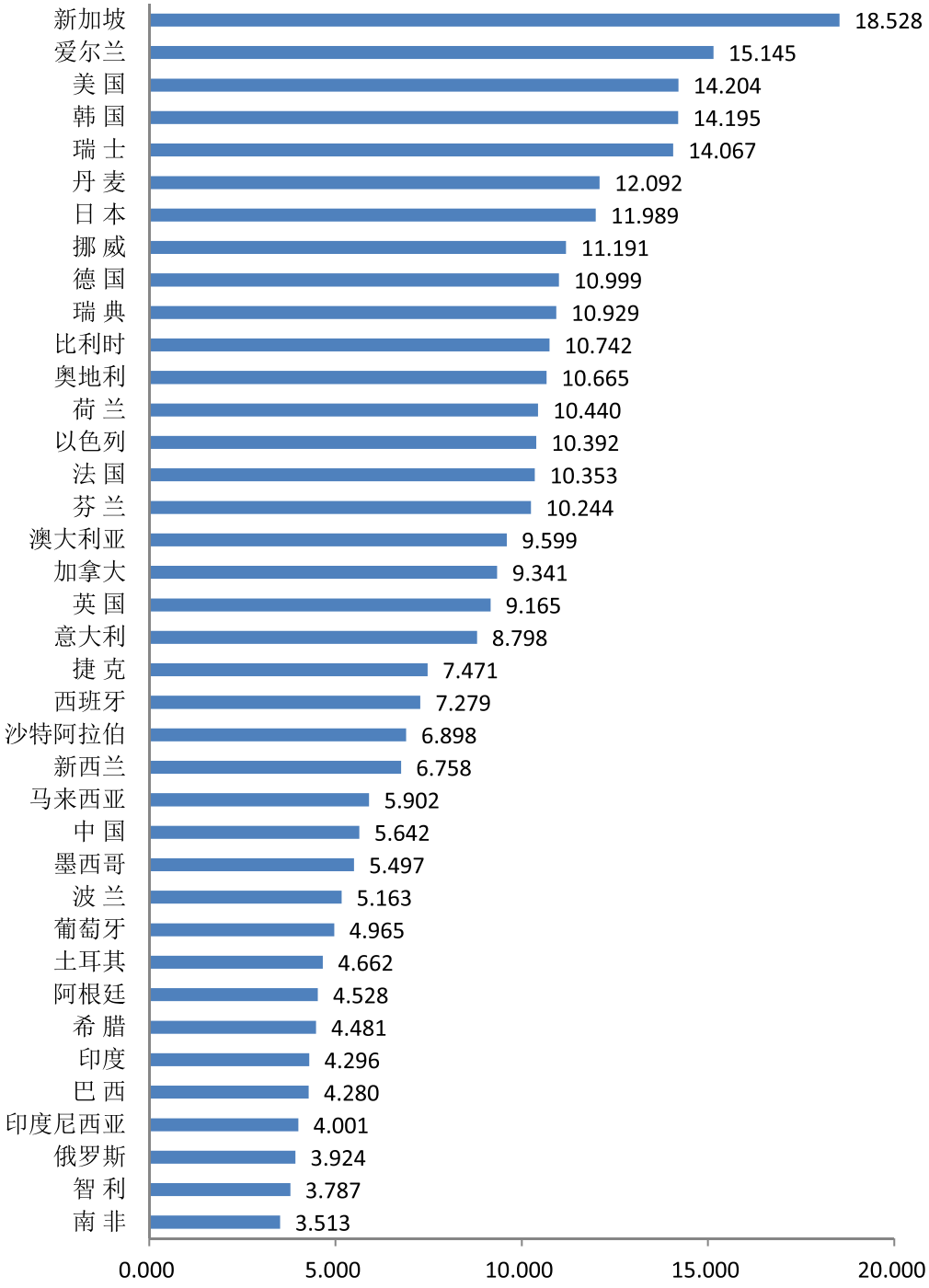

图 1.6　38 国人才效能指数的国际排序

三、中国人才竞争力的优劣势分析

从各个指标得分来看，中国人才规模指标得分最高，为满分；其次为人才环境，折合百分制为 79.08 分，然后是人才投入（48.19 分）、人才效能（30.45 分）、人才质量（18.83 分）。

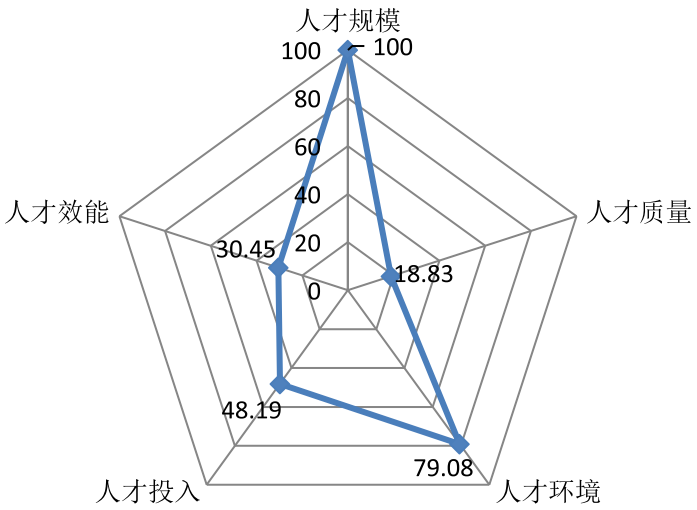

图 1.7 中国人才竞争力指数各指数分值（折合百分制）（分）

从世界人才竞争力指数总体来看，中国位居第八，在美国、韩国、日本、英国等国之后，与中国的经济体量在世界上的位置相比稍有落后。

在人才规模方面，中国具有明显的竞争优势。中国和美国遥遥领先。

在人才质量方面，中国显示了短板，处于暂时的弱势。这与中国本身高层次人才比较匮乏有关，也因为人才质量指标包括“每万劳动力中受过高等教育的人数”和“每万就业人员中科学研究人员数”两项指标，采用的是人均数据，而中国的劳动力和就业人数基数大，导致人才质量指数较低。

在人才环境方面，中国名列第二，说明中国注重在人才生活、工作环境方面的优化，特别是在打造人才工作平台、净化人才生活环境方面有了长足的进步。早在 2013 年 10 月，习近平主席在欧美同学会成立 100 周年庆祝大会上强调：“环境好，则人才聚、事业兴；环境不好，则人才散、事业衰。要健全工作机制，

增强服务意识，加强教育引导，搭建创新平台，善于发现人才、团结人才、使用人才，为留学人员回国工作、为国服务创造良好环境。”最近 10 年，无论是国家层面还是地方层面，中国对人才发展环境都非常重视。

在人才投入方面，中国居于第 28 位，虽然与丹麦、瑞典等国家有不小的差距，但与其他发达国家的差距并不大，在人才投入总额上显示了后发优势。2021 年 9 月的中央人才工作会议上强调了加大人才发展投入，提高人才投入效益，为充分发挥后发优势奠定了基础。

在人才效能方面，中国位居第 26 位，人才效能竞争力指数仅有新加坡的一半。这说明中国仍存在阻碍人才充分发挥作用的藩篱，也间接说明了中国在深化人才发展体制机制改革方面还任重道远。

第二章 全球人才流动现状与趋势

一、全球人才流动相关概念

（一）人才

中国《国家中长期人才发展规划纲要（2010-2020 年）》将“人才”定义为“具有一定的专业知识或专门技能，进行创造性劳动并对社会做出贡献，为社会创造价值的人，是人力资源中素质较高的劳动者。”在中国《现代汉语词典》中，“人才”意为“德才兼备的人；有某种特长的人”。

其他国家中与“人才”比较相近的概念是“人力资本”和“人力资源”。19 世纪，部分学者把人力资本归为国家竞争力的重要组成部分。德国经济学家弗里德里希·李斯特（Freidrich Liszt），在国家生产力三个层次的精神力量层次阐释中强调了激励机制和智力开发，也即“人才资本”的重要性。1954 年，彼得·德鲁克（Peter F. Drucker）其《管理实践》中首次提出“人力资源”概念，并认为企业真正的资源只有人力资源，企业走下坡路的第一个信号是对那些合格的、能干的、有志向的人才失去吸引力。[①]

本报告把“人才”界定为：有一定的知识和才干，能对社会做出贡献的人。

（二）人才流动

“人才流动”，既可指人才在空间位置上的迁移，又可指人才在产业间、职业间的流动。[②]本报告“人才流动”聚焦于人才在国家间、区域间或全球范围内的流动，在人才流动趋势部分也涉及产业、职业之间的流动。促成人才流动的原因有很多，知识经济、全球化发展、人口结构差异与各国人才政策是其中最为重要的因素。本报告所指人才在空间位置上的流动主要分为人才流出（流入）、人

① 王辉耀. 国际人才竞争战略[M]. 北京: 党建读物出版社, 2014:5.
② 王辉耀，苗绿，郑金连. 国际人才学概论[M].北京：中国人事出版社, 2020：24.

才回流、人才环流三种模式。

人才流出，是从人才输出国角度定义的流动模式，即人才从一国迁徙至另一国。对于人才输入国来说，就是一种“人才流入”现象。不管是“人才流出”，还是“人才流入”，都是一种单向的人才流动。

人才从 A 国流入 B 国再流回 A 国的过程，即为“人才回流”。在人才回流中，由 A 国流出的人才在 B 国学习或工作后，可能掌握了先进的技术知识或管理技能，当其回流到 A 国时，A 国就可以通过人才回流分享国际前沿的技术知识、人文思想和管理技能等。

人才环流即人才在流出国、流入国、第三国之间“循环”流动。在人才环流的过程中，人才在 A、B、C 之间循环往返，使得三者不再是单纯的流出国与流入国的关系，而是互为流出国又互为流入国。从空间来看，人才环流跨越至少两个国家；从流动次数来看，人才环流不是单向或单一循环的人才流动，而是多次循环往返的流动；从流动效用来看，人才环流不是单一的非受益即损失的模式，而是成为了双方都能受益的共赢模式。[①]人才环流推动了资源、资本、技术的互通有无、互惠互利，从而促进彼此经济社会的发展。

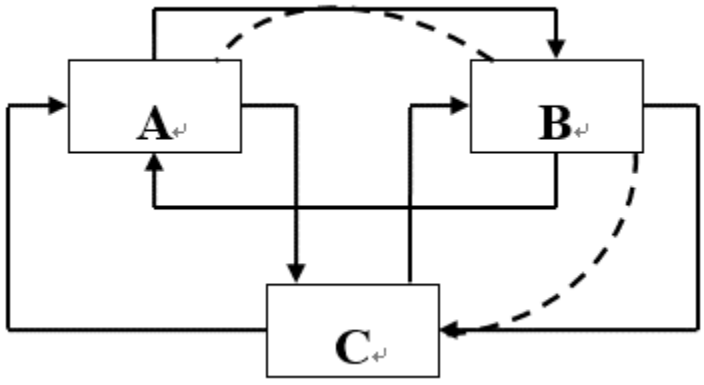

图 2.1　人才环流

资料来源：汪怿. 构建全球人才枢纽:原因、内涵与策略[J]. 科学发展, 2013(02):89-99.

① 杜红亮, 乌云其其格. 让中国成为全球人才环流的重要一极 [EB/OL].（2012-04-27）[2022-10-07] http://www.kjw.cc/2012/04/27/29930.html.

二、全球人才跨区域流动现状

分析全球人才跨区域流动现状须以大量数据为基础。各国对“人才”的界定有所不同，目前对全球范围内的人才流动现状尚无公认的监测标准。本报告通过追踪国际移民[①]（尤其是工作型国际移民和国际学生）2000~2020 年的流动趋势，对全球人才跨区域流动现状进行初步分析。

（一）全球国际移民流动现状[②]

1. 国际移民数量及其占世界总人口的比例均持续增长

根据联合国经济和社会事务部相关数据，2020 年，近 2.81 亿人居住在出生国以外的国家，比 2000 年（1.73 亿人）增加 62.4%，比 1990 年（1.53 亿人）增加 83.7%，是 1970 年（8400 万人）的 3.35 倍。国际移民在全球总人口中的比例缓慢增长，从 2000 年的 2.8%上升到 2020 年的 3.6%。

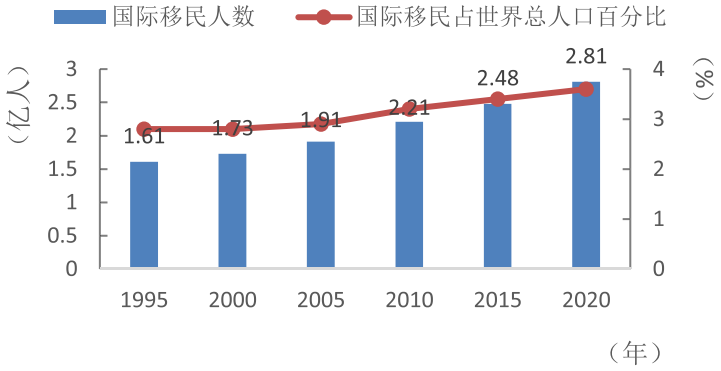

图 2.2　1995-2020 年国际移民人数和百分比

① 联合国经济社会事务统计局 1998 年正式公布的《国际移民数据统计建议》，将“国际移民”定义为任何一位改变了常住国的人（不含因娱乐、度假、商务、医疗或宗教等原因而短期出国者）。并将“国际移民”分为“短期移民”和“长期移民”。“短期移民”系迁移到其原籍国以外的另一个国家至少 3 个月以上，一年（12 个月）以下；“长期移民”系迁移到其原籍国以外的另一个国家至少一年（12 个月）以上，迁移的目的国成为其事实上的新的常住国。就迁出国而言，“长期移民”是“长期外迁的国际移民”；就移入国而言，“长期移民”是“长期迁入的国际移民”。“国际移民组织”（International Organization for Migration，IOM）将“国际移民”界定为离开本人之原籍国或此前的常住国，跨越国家边界，为了定居性目的而永久性地或在一定时期内生活于另一国家的人。同时，也特别强调了“国际移民”与“社会发展”的关系，“当探讨移民与发展时，所指‘移民’是不受任何外力因素胁迫、由个人自主做出移民选择的人，不包括难民、流亡者或被迫离开家园的人。”本报告中联合国经济社会事务统计局和国际移民组织对国际移民的界定和数据基本一致。根据跨国迁徙的形式和目的不同，国际移民可分为工作型国际移民、投资型国际移民、团聚型国际移民、学习型国际移民、危机移民、非法移民等类别，本报告的国际移民主要涉及工作型国际移民和学习型国际移民（即国际学生）。

② 如无特别说明，本部分数据来自：IOM. 世界移民报告 2022. 全球化智库（CCG）译.

2. 联合国各区域国际移民数量增加，大部分区域的国际移民占该区域人口的比例有所增加

从 1995 年至 2020 年，联合国各区域的国际移民存量增加了数百甚至数千万，除了非洲，其他区域国际移民占本区域人口的比例均有所增加。国际移民在亚洲、拉丁美洲和加勒比地区的比重略有增长，而欧洲、北美洲和大洋洲的国际移民比重都有约 4 个百分点或更多的增长。

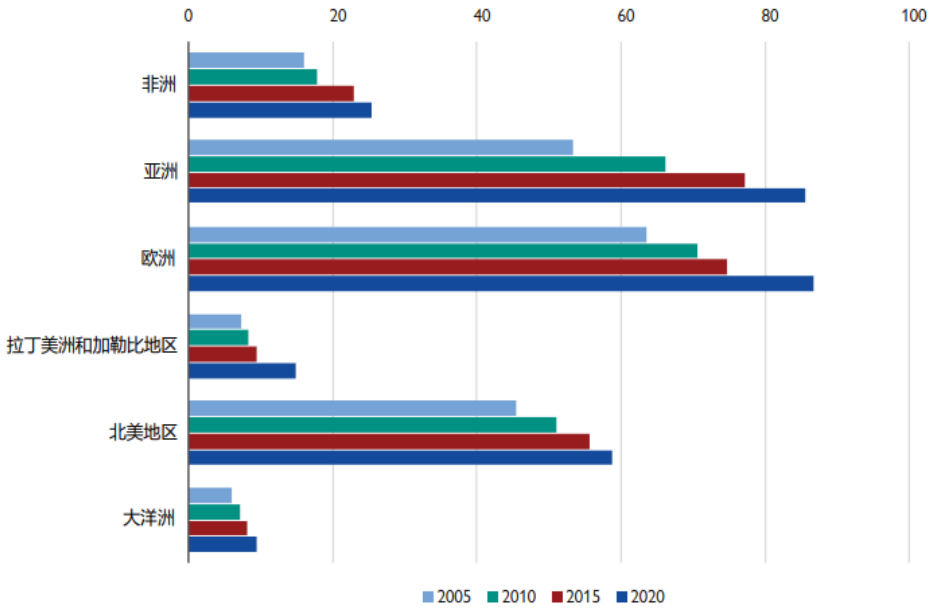

图 2.3　2005 年至 2020 年间居住在各区域国际移民的增长情况

欧洲目前是国际移民最主要的目的地，有 8700 万人（占国际移民人口的 30.9%）；紧随其后的是亚洲，有 8600 万国际移民居住在此，占比 30.5%。北美洲有 5900 万人，占比 20.9%；其次是非洲，有 2500 万人，占比 9%。过去十五年，拉丁美洲和加勒比地区的国际移民人数增加了一倍多，从大约 700 万人增加到 1500 万人，使其成为国际移民存量增长率最高的地区，占比 5.3%。约 900 万国际移民居住在大洋洲，约占所有移民的 3.3%。

欧洲国际移民主要来自于欧洲内部、亚洲、北非。亚洲是全球第一大国际移民来源地，2020 年源自亚洲的国际移民构成世界国际移民总人数的 40%（1.15 亿）以上。非洲大部分的国际移民均为非洲区域内流动，2020 年约有 2100 万非洲人生活在出生国以外的非洲国家。

3. 国际移民主要从印度、墨西哥等发展中国家流向以美国为首的发达国家

2020 年，美国仍然是国际移民的主要目的国，有着超过 5100 万国际移民。其中，约 1085 万人来自墨西哥，其次为印度和中国，分别约为 272 万人和 218 万人。[①]德国以近 1600 万国际移民成为第二大目的国，移民主要来自波兰（214 万人）和土耳其（184 万人）。沙特阿拉伯是第三大国际移民目的国，有 1300 万国际移民。俄罗斯和英国位列第四、第五名，大约有 1200 万和 900 万国际移民。

印度有近 1800 万人生活在国外，是全球最大的移民来源国，阿联酋、美国和沙特阿拉伯是印度移民排名前三的目的国。[②]墨西哥是第二大国际移民来源国，输出移民约 1100 万人，其中有约 1085 万移民前往美国。俄罗斯是第三大来源国（约 1080 万人）。紧随其后的是中国（约 1000 万人），2022 年，有超过 200 万中国人移民至美国，其次是韩国（约 80 万人）和日本（约 77 万人）。

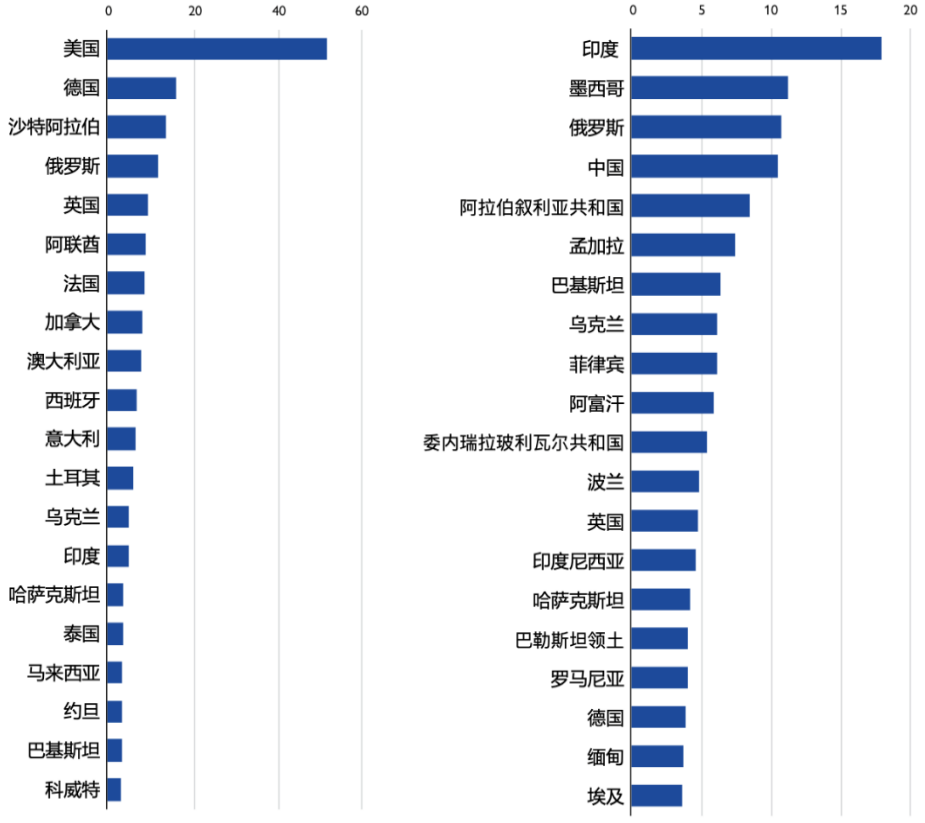

图 2.4　2020 年国际移民前 20 位目的国（左图）和来源国（右图）（百万人）

① International Organization Migration. World Migration Report 2022. https://worldmigrationreport.iom.int/wmr-2022-interactive/.
② IMO. World Migration Report 2022. https://worldmigrationreport.iom.int/wmr-2022-interactive/.

目前国际移民流动最大的通道是从墨西哥到美国的移民走廊，有近 1100 万人通过这一走廊流动。其次是从阿拉伯叙利亚共和国到土耳其的移民走廊。第三是从印度到阿拉伯联合酋长国（超过 300 万人）的移民走廊，主要是移民劳工。印度到美国和中国到美国的移民走廊排在第六位、第十二位。

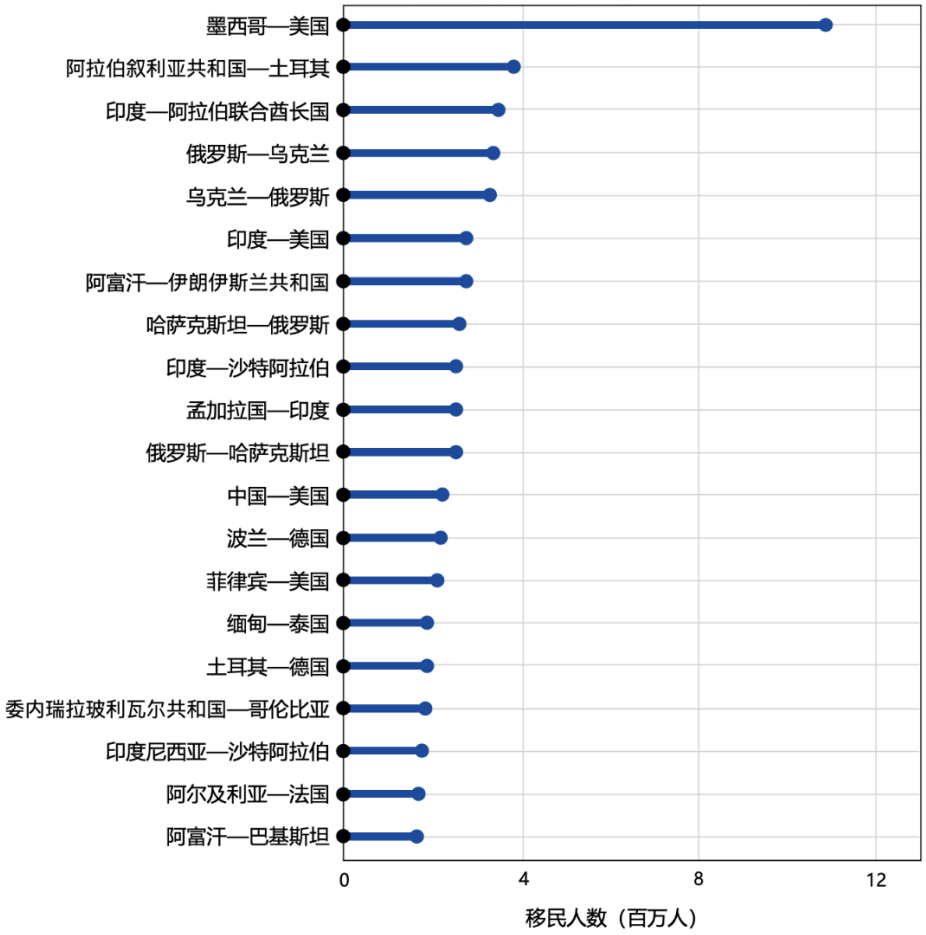

图 2.5　2020 年前 20 位国家间国际移民走廊（百万人）

4. 工作型国际移民是国际移民的主流群体，主要分布在高收入国家及新兴市场，多在服务业领域工作

国际劳工组织对工作型国际移民[①]的全球存量最新统计表明，2019 年大约有 1.69 亿国际移民在其移民目的国就业或求职，约占该年国际移民总人数（2.72 亿人）的 62%，[②]约占处于工作年龄（一般是在 15 岁及以上）的国际移民人口（2.45

① 工作型国际移民，即跨国务工人员，指在目前常驻国已就业或正在寻求就业机会的国际移民。
② 国际劳工组织认为由于定义、方法和数据源的差异,2019 年的数据无法与更早的数据（1995 年为 3600-4200 万人，2000 年 8620 万人和 2010 年 1.055 亿人，2013 年为 1.503 亿人,2017 年为 1.64 亿人）相比。

亿人）的 69%。[①]当前工作型国际移民流动主要呈现下列特点：

第一，工作型国际移民主要分布在北欧、南欧和西欧、北美的发达国家，这些地区的工作型国际移民占全球工作型移民总数的 46.3%。相比之下，仅有 2.8%的工作型国际移民位于东亚地区。如果将各地区工作型国际移民人数占就业者总数的比例进行比较，可发现阿拉伯国家就业者中工作型国际移民比例最高，占 27%；而在东亚很多国家，这一比例仅为 0.5 左右，为各地区最低值。

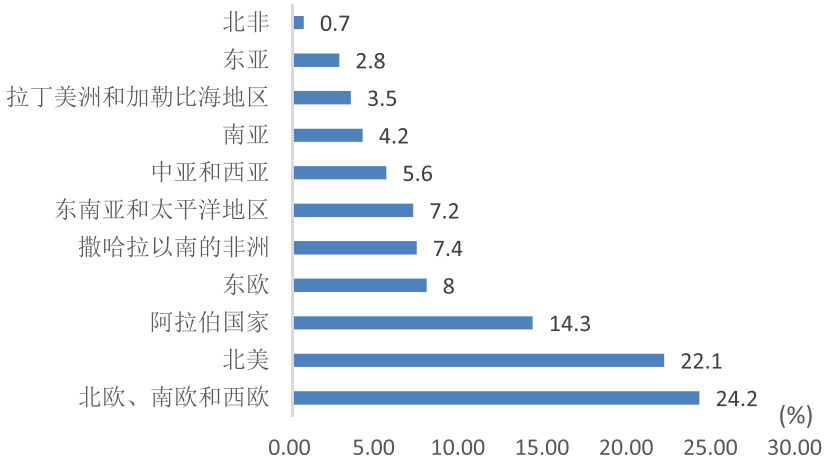

图 2.6　工作型国际移民占所在地区就业者的比重

资料来源：International Labor Organization. ILO Global Estimates on International Migrant Workers Results and Methodology [R]. 2021.

第二，多数工作型国际移民聚集在高收入国家，但新兴市场吸引力不可小觑。约 67%（1.139 亿人）的工作型国际移民聚集在高收入国家，19.5%在中高收入国家（多为新兴市场），而处于低收入国家工作型国际移民仅占 3.6%。相对而言，女性工作型国际移民在高收入国家或中上收入国家的比例（88.6%）相对较高。

第三，大多数工作型国际移民在服务业工作。约 66.2%的工作型国际移民在服务业工作，在工业和农业领域工作的分别占 26.7%和 7.1%。其中，79.9%的女性工作型移民在服务业工作。移民女工在服务业中的比例较高，部分原因可能是护理经济中的劳动力需求不断增长，相关领域主要依赖于移民女工。

① International Labour Organization. ILO Global Estimates on International Migrant Workers Results and Methodology[R]. 2021.

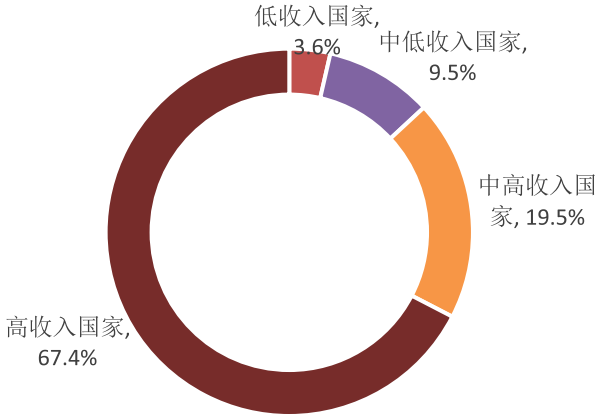

图 2.7　工作型国际移民所在国家类型

资料来源：International Labor Organization. ILO Global Estimates on International Migrant Workers Results and Methodology [R]. 2021.

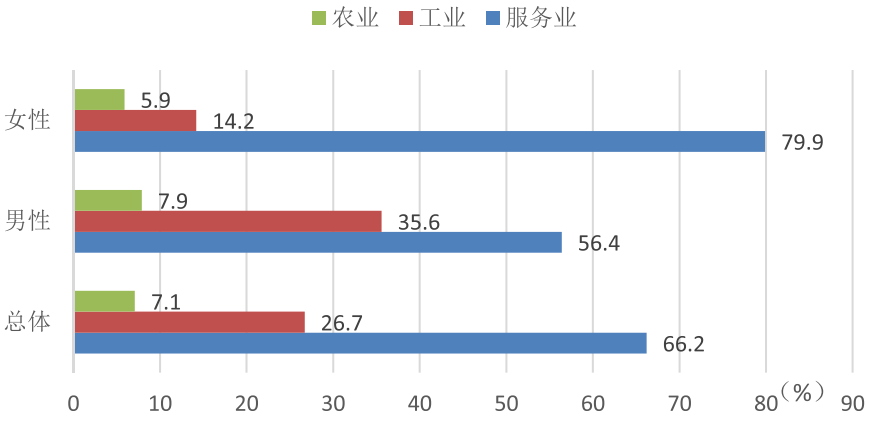

图 2.8　工作型国际移民所在行业分布

资料来源：International Labor Organization. ILO Global Estimates on International Migrant Workers Results and Methodology [R]. 2021.

（二）全球国际学生流动现状

1. 国际学生在过去 20 年间增长了两倍，主要从中国、印度等发展中国家流向美国、英国等教育大国，美国、中国、德国、法国国际学生双向流动明显

国际学生数量虽远不及工作型国际移民数量，但常被视为“准国际人才”，受到各国的关注与争夺。根据 UNESCO 的统计与预测，全球学生跨国流动人数

从 2000 年的 208.8 万人增加到 2020 年的 636.2 万人，增长了 2 倍。[①]

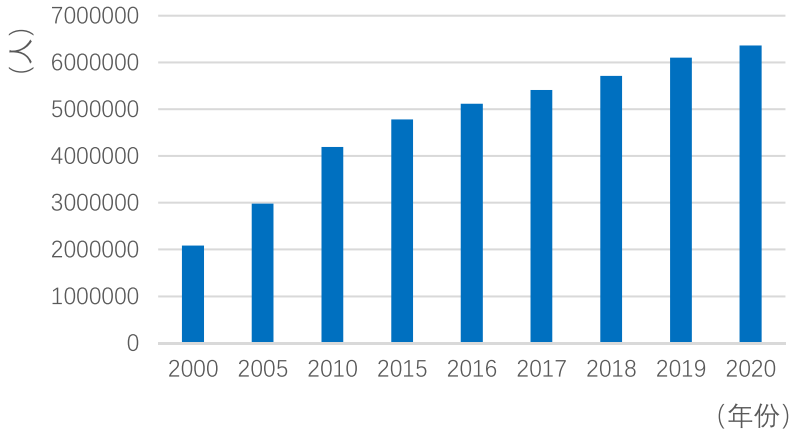

图 2.9　2000～2020 年国际学生人数变化

资料来源：UNESCO. Number and rates of international mobile students. [DS/OL]. [2022-10-08]. http://data.uis.unesco.org/#.

2.国际学生留学目的国以北美、欧洲发达国家为主

美国是第一大留学目的国，英国、澳大利亚、德国紧随其后。23.7%的国际学生在美国、英国留学。四分之一以上的国际学生来自中国、印度。美国、中国、德国、法国不仅是前十大留学目的国还是前十大留学来源国。

表 2.1　2019~2020 年主要留学目的国高等教育体系拥有国际学生人数情况

国家	2020 年（人）	2019 年（人）	同比增长（%）
美 国	914095	1075496	-15.01
英 国	550877	489019	12.65
澳大利亚	458279	509160	-9.99
德 国	368717	333233	10.65
加拿大	323157	279168	15.76
俄罗斯	-	282922	-
法 国	252444	246378	2.46
中 国	225100	201177	11.89
日本	279597	312214	-10.45
土耳其	185047	154505	19.77

资料来源：UNESCO. Number and rates of international mobile students. [DS/OL]. [2022-10-08]. http://data.uis.unesco.org/#. 注：美国数据来自《2020 年门户开放报告》，日本数据来自《2020 在日国际学生年度调查》。

① UNESCO. Number and rates of international mobile students. [DS/OL]. [2022-10-08]. http://data.uis.unesco.org/#.

表 2.2　2019~2020 年前十大国际学生来源国出国留学生人数及增长率

排名	国家	2020 年（人）	2019 年（人）	增长率（%）
1	中国	1088466	1060042	2.68
2	印度	516238	460741	12.05
3	越南	132559	125504	5.62
4	德国	123512	122666	0.69
5	美国	109827	102340	7.32
6	法国	108654	103010	5.48
7	韩国	100610	101577	-0.95
8	尼迫尔	95268	93360	2.04
9	哈萨克斯坦	90333	89345	1.11
10	巴西	89151	81719	9.09

资料来源：UNESCO. Number and rates of international mobile students. [DS/OL]. [2022-10-08]. http://data.uis.unesco.org/#.

3.亚洲地区国际留学生流动情况

入境留学方面，日本、中国、土耳其、韩国的国际学生人数较多（2020 年超过 10 万人），增长较快，其中土耳其在 2016~2020 年增长了 1.1 倍。印度和新加坡的国际学生数量有少量增加，2020 年分别为 49348 人、54982 人。马来西亚的入境国际学生人数从 2016 年至 2020 年下降了近 4 万人。亚洲区域入境国际学生主要来自亚洲国家。例如，2019-2020 年度，在日本就读的国际学生中约 26.4 万人来自亚洲，占其国际学生总数的 94.6%。①

在出国留学人数方面，中国不仅是亚洲也是全球出国留学人数最多的国家，2019 年起，中国出国留学人数超 100 万人。其次是印度，2020 年，印度出国留学人数超过 50 万人，2016-2020 年，印度出国留学人数增长最快，五年间增长了 69.02%，马来西亚和新加坡出国留学人数出现了下降，分别下降 15.02%和 14.34%；沙特阿拉伯下降幅度最大，2020 年 58936 人出国留学，下降了将近 40000 人。

① 王辉耀、苗绿、郑金连. 中国留学发展报告（2022）[M]. 北京：社会科学文献出版社.

表 2.3 2020 年亚洲地区主要国家国际学生情况（人，%）

	入境留学		出国留学	
	入境国际学生人数	2020 年相对 2016 年的增长率	出国留学人数	2020 年相对 2016 年的增长率
中国	225100	63.68	1088466	25.57
韩 国	111568	80.27	100610	-4.61
日 本	279597	-	32913	3.97
印度	49348	10.24	516238	69.02
新加坡	54982	3.50	21666	-14.34
印度尼西亚	-	-	55961	17.18
马来西亚	89193	-28.15	55311	-15.02
以色列	-	-	18300	29.19
土耳其	185047	110.51	51146	12.29
沙特阿拉伯	69005	-13.59	58936	-34.69

资料来源:日本入境国际学生人数来自日本学生服务组织；其他资料来源于 UNESCO Institute for Statistics.

4.欧洲地区国际留学生流动情况

从入境留学来看，2016-2020 年，除了比利时、丹麦、意大利、希腊，其余欧洲主要国家入境国际学生保持增长态势，增长较快的是葡萄牙、西班牙、德国，增幅超过 50%。欧洲地区接收国际学生最多的英国、德国、法国、荷兰，均超过 10 万人，其国际学生主要源自欧洲内部流动和亚洲地区。

在出国留学方面，法国与德国是欧洲主要国际学生输出国，2020 年出国留学人数均超过 10 万人。从 2016 年到 2020 年，除了瑞典、挪威、捷克，其他欧洲主要国家出国留学人数均有不同程度的增加，见表 2.4。值得注意的是，德国和法国不仅入境国际学生人数数量大，出国留学人数也较大，呈现国际学生大进大出的格局。

表 2.4　2020 欧洲地区主要国家国际学生情况（人，%）

	入境留学		出国留学	
	入境国际学生人数	2020 年相对 2016 年的增长率	出国留学人数	2020 年相对 2016 年的增长率
英 国	550877	27.52	40074	16.18
德 国	368717	50.76	123512	4.58
法 国	252444	2.89	108654	19.61
瑞 士	57972	11.68	18627	38.84
爱尔兰	24141	34.99	15183	3.16
荷 兰	124876	38.87	19285	13.22
芬 兰	23591	1.70	10946	7.52
比利时	54080	-11.49	17168	21.31
瑞 典	31935	13.94	15092	-12.87
挪 威	12887	18.45	15964	-15.36
丹 麦	31478	-7.51	6041	18.99
奥地利	75870	7.64	23998	32.76
西班牙	82269	65.08	46994	23.10
俄罗斯	-	16.07	57591	0.50
意大利	58508	-36.85	84449	25.53
捷 克	47768	11.58	12195	-2.68
波 兰	62091	13.44	26495	9.33
希 腊	22429	-5.50	40395	13.11
葡萄牙	44005	98.27	22807	76.81

资料来源：UNESCO Institute for Statistics.

注：俄罗斯的增长率是 2016-2019 年的；葡萄牙的增长率是 2017-2020 年的。

5.北美地区国际留学生流动情况

入境留学方面，北美地区是全球最主要留学目的地，2020 年有 957475 人在美国高等教育体系就读，323157 人在加拿大就读。近五年在美国的国际学生人数略有减少，加拿大国际学生则比 2016 年增长了 70.55%。根据美国国际教育协会发布的《2021 年门户开放报告》，来自亚洲的国际学生占美国高等教育体系国际学生总数的 70.6%，前三大生源国是中国、印度和韩国，这三个国家向美国输送了超过半数的国际学生。①

① Institute of International Education. International student data from the 2021 open doors report. https://opendoorsdata.org/data/international-students/all-places-of-origin/.

在出国留学方面，美国出国留学人数保持相对稳定的增长，从 2016 年的 84026 人增长至 2020 年的 109827 人，增长了 30.71%。加拿大出国留学人数则经历了先下降后上升的过程，2016 年至 2020 年总体保持在 5 万人左右。

表 2.5 2020 年北美地区主要国家国际学生情况（人，%）

	入境留学		出国留学	
	入境国际学生人数	2020 年相对 2016 年的增长率	出国留学人数	2020 年相对 2016 年的增长率
美 国	957475	-1.44	109827	30.71
加拿大	323157	70.55	51156	1.14

资料来源: UNESCO Institute for Statistics.

6.拉丁美洲地区国际留学生流动情况

在入境留学方面，2016-2020 五年间，拉丁美洲国家的入境国际学生人数呈快速上升趋势，尤其是墨西哥、智利，2020 年入境国际学生比 2016 年增长 2.4 倍和 1.8 倍。阿根廷的入境国际学生人数最多，2020 年达 121577 人，其次为墨西哥（43458 人）。在出国留学方面，拉丁美洲主要国家中，巴西出国留学人数最多，2020 年达 89151 人，其次为墨西哥（34781 人），阿根廷出国留学人数较少，仅为 9998 人。从 2016-2020 年增长情况来看，巴西、智利、阿根廷出国留学人数都有较大幅度的增长。

表 2.6 2020 年拉丁美洲地区主要国家国际学生情况（人，%）

	入境留学		出国留学	
	入境国际学生人数	2020 年相对 2016 年的增长率	出国留学人数	2020 年相对 2016 年的增长率
墨西哥	43458	243.43	34781	4.83
巴 西	22364	11.84	89151	71.42
阿根廷	121577	60.63	9998	31.67
智 利	12832	180.91	18309	33.12

资料来源：UNESCO Institute for Statistics.

7.大洋洲地区国际留学生流动情况

2016-2019 年，澳大利亚入境国际学生人数快速增长。由于新冠肺炎疫情的

影响，2020 年澳大利亚入境国际学生相对于 2019 年大幅减少，但仍比 2016 年增长了 36.59%。2016-2019 年，新西兰入境国际学生基本维持在 5.3 万人左右，2020 年受全球新冠疫情的影响，新西兰入境国际学生人数出现了大幅度的减少，相比 2016 年减少了 18.86%。澳大利亚和新西兰的国际留学生主要来自中国。

出国留学方面，澳大利亚和新西兰出国留学人员相对于其入境留学而言，都很少。澳大利亚的出国留学生人数保持在 1.3 万左右，约为入境留学生人数的 3%；而新西兰的出国留学生人数为 5000 人左右，约为入境留学生人数的 10%左右。

表 2.7 2020 年大洋洲地区主要国家国际学生情况（人，%）

	入境留学		出国留学	
	入境国际学生人数	2020 年相对 2016 年的增长率	出国留学人数	2020 年相对 2016 年的增长率
澳大利亚	458279	36.59	13742	6.94
新西兰	43699	-18.86	5038	-10.02

资料来源：UNESCO Institute for Statistics.

8.非洲地区国际留学生流动情况

南非是非洲入境国际学生最多的国家。2020 年南非入境国际学生人数为 36050 人，比 2016 年减少 20.14%。摩洛哥是非洲出国留学生最多的国家，2020 年有 63001 人出国留学，半数以上去法国留学。南非出国留学人数在 2016-2019 年逐步增加，2020 年（12295 人）相比 2019 年有少量回落，比 2016 年增加 21.14%。

三、全球人才跨领域流动趋势

（一）人才向数字经济领域流动

近年来，以大数据、云计算、人工智能等为代表的数字技术与实体经济深度融合，推动全球数字经济[①]快速发展，带动传统产业生产方式和产业结构发生深

① 根据中国信息通信院 《中国数字经济发展报告（2022 年）》，数字经济包括信息通信产业，产业数字化，数字化治理以及数据价值化四大部分。
http://www.caict.ac.cn/kxyj/qwfb/bps/202207/P020220729609949023295.pdf.

刻变革，促进数字产业等新兴产业快速发展。数字经济已成为经济发展的重要引擎。数据显示，2021 年全球 47 个国家数字经济增加值规模为 38.1 万亿美元，同比名义增长 15.6%，占 GDP 比重为 45.0%。其中，发达国家数字经济规模大、占比高，2021 年规模为 27.6 万亿美元，占 GDP 比重为 55.7%，发展中国家数字经济增长快，2021 年增速达到 22.3%。[①]据互联网数据中心（IDC）预测，到 2023 年，数字经济产值将占全球 GDP 的 62%，全球将进入数字经济时代。

随着数字经济快速发展，数字产业化和产业数字化进程明显加快，模糊了传统工业经济时代的固定的行业边界，全球人才跨领域、跨行业向数字经济领域流动的趋势愈发明显。根据世界经济论坛（WEF）的《未来就业报告 2020》，到 2025 年需求增加的前 20 个工作角色中，绝大部分与数字经济相关。

表 2.8 2025 年行业间需求增加的前 20 个工作角色

数据分析师与科学家	项目经理
人工智能与机器学习专家	商业服务与行政经理
大数据专家	数据库和网络专业人员
数字营销与战略专家	机器人工程师
过程自动化专家	战略顾问
商务开发专业人员	管理与组织分析师
数字转型专家	FinTech 工程师
信息安全分析师	机械与机械修理工
软件与应用程序开发人员	组织发展专家
物联网专家	风险管理专家

资料来源：世界经济论坛. The Future of Jobs Report 2020.

越来越多国家重视数字经济核心技术的高素质创新人才，尤其是加强与数字经济密切相关的 STEM 领域人才培养。2022 年 2 月，美国国会众议院通过了《2022 年美国竞争法案》，为吸引全球 STEM 领域人才赴美、留美推出了一系列

① 中国信息通信研究院.《全球数字经济白皮书 （2022）》[R/OL].（2022-7-29）[2022-10-8].

突破性新政。日本政府以构建“社会 5.0”的目标，面向初高中教育推进 STEM 教育和 AI 知识及技能教育。[①]中国 2018 年启动“中国 STEM 教育 2029 创新行动计划”，助力打造全国范围的 STEM 教育示范性基地。[②]为推动传统产业数字化，经合组织国家大力推动工人技能提高或再培训计划，如提高数字化能力（斯洛文尼亚）、加强数字化能力中心建设（德国）、加强中小企业的 ICT（Information and Communications Technology）培训（以色列）、支持 ICT 行业雇员培训（拉脱维亚）、工人再培训和提高技能的计划（葡萄牙）和免费的在线课程（英国）等。[③]可以看出，世界各国纷纷加强对数字经济领域人才的培养引进和数字技能提升，将推动世界范围内数字人才的增加以及人才向数字经济领域流动。

在线教育平台快速发展使人才向数字经济领域涌入成为可能。大规模的人才以在线的方式重回“课堂”，以“云+AI+大数据”为核心技术的在线学习平台，将科技与教育相结合，使全球人才可以突破物理空间、年龄界限等要素限制，通过在线教育平台获取高质量数字技术学习资源，从而获得转换职业赛道的能力，实现跨领域流动。[④]

人工智能等新兴数字经济领域人才不断集聚。至 2020 年中期，超过 60 个国家制定了人工智能战略。优先领域包括人工智能相关研发（加拿大、美国、欧盟），人工智能应用（芬兰、德国、韩国）和人工智能技能（澳大利亚、芬兰、英国、美国）。[⑤]快速发展的人工智能产业，面临着极大的人才紧缺问题。以中国为例，根据人力资源与社会保障部测算，2020 年中国人工智能人才缺口超过 500 万，国内的供求比例为 1：10，供需比例严重失衡。[⑥]根据中国工信部发布的数据显示，人工智能不同技术方向岗位的人才供需比均低于 0.4，说明该技术方向的人才供应严重不足。[⑦]在人工智能人才短缺，以及全球各国加快人工智能领域的顶

① 中国信息通信研究院.全球数字经济白皮书 （2022）》[R/OL].（2022-7-29）[2022-10-8].
② 武小鹏. 国家政策视角下国际 STEM 教育发展路径、价值取向和启示[J].当代教育论坛. 2020(02):55-64.DOI:10.13694/j.cnki.ddjylt.20200221.001.
③ Organization for Economic Co-operation and Development (OECD).数字经济展望 2020[R/OL]. （2020-11-30）[2022-9-28] https://www.oecd.org/digital/oecd-digital-economy-outlook-2020-bb167041-en.htm.
④ 零壹财经.全球在线学习平台发展现状报告[R/OL].（2020-3-23）[2022-9-28]. https://www.01caijing.com/finds/details/259430.htm.
⑤ Organization for Economic Co-operation and Development (OECD).数字经济展望 2020[R/OL].
⑥ 人力资源与社会保障部. 新职业——人工智能工程技术人员就业景气现状分析报告[R/OL]. （2020-4-30）[2022-10-08]. http://www.mohrss.gov.cn/SYrlzyhshbzb/dongtaixinwen/buneiyaowen/202004/t20200430_367110.html.
⑦ 工业和信息化部人才交流中心. 人工智能产业人才发展报告（2019-2020 年版）[R/OL]. （2020-6）

层战略和人才培养的背景下，未来，大量人才将向人工智能等新兴数字经济领域集聚。

产业数字化领域人才需求旺盛。2020 年以来，数字化人才呈现向非 ICT 行业（制造、金融、消费品等 22 个传统行业）加速渗透的趋势。据调研统计，2022 年，65.6%的企业在数字化人才方面的培训需求快速增长，数字化技术、应用和管理者三类数字化人才供不应求。以金融行业为例，从市场需求来看，96.8%的金融机构存在金融科技的人才缺口，54.8%的机构认为新员工的金融科技技能和经验不足。[①]体现了传统产业的数字化转型趋势以及该领域对数字化人才的需求。

（二）人才向新兴职业和就业形态流动

数字经济的进一步发展带动传统需求变革和新需求产生，带动技术化、智能化、服务化的新兴职业蓬勃发展。据相关数据，2020 年，在全球发展最快的 15 大新兴职业中，人工智能专家的招聘数在过去 4 年中年增长率为 74%，位居首位。[②]其它 14 个新兴职业分别是：机器人工程师、数据科学家、全栈工程师、网站可靠性工程师、客户成功工程师、销售开发代表、数据工程师、行为健康技术员、网络安全专家、后端开发工程师、首席营收官、云工程师、JavaScript 开发员、产品负责人。新兴职业主要集中在以数字经济为代表的新经济领域，对数字素养的要求较为突出。据世界经济论坛（WEF）根据 26 个经济体 15 个产业的数据预测，到 2030 年，全球将有 2.1 亿人因新一轮数字化、工业化、自动化、智能化和全球化变革而被迫更换工作；到 2025 年，新技术的引进和人机之间劳动分工的变化将导致新兴职业从业者占比将从 7.8%增长到 13.5%，8500 万个工作岗位消失，同时将诞生 9700 万个更适合人类新分工的新角色、新技术的工作岗位。[③]据《新就业形态下新职业青年发展报告》推测，在中国，2021-2025 年，互联网营销师、数字化管理师、人工智能工程技术人才等 20 种新职业人才缺口接近 1.2

[2022-10-8].
① 艾瑞咨询.企业数字化人才发展白皮书[R/OL].(2022-06-30)[2022-10-08]. https://www.iresearch.com.cn/Detail/report?id=4018&isfree=0.
② LinkedIn. 2020 年新兴职业报告[R/OL].（2021-1-7）[2022-10-09]. https://business.linkedin.com/zh-cn/talent-solutions/s/sem-report-resources.
③ 世界经济论坛. The Future of Jobs Report 2020[R/OL]. (2020-10-20）[2022-10-10]. https://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf.

亿，其中，互联网营销师 4000 万、企业合规师 1000 万、企业合规师 1000 万、人工智能训练师 500 万、农业经理人 150 万、老年人能力评估师 300 万人，新职业将成为促进全球人才就业的重要渠道。①

在新冠肺炎疫情的催化下，生产方式发生变革，远程办公、灵活工作被广泛接受，就业结构被重构，越来越多人才向更灵活多元的方向发展。数字技术的支持下，电子商务、网络直播、在线娱乐等业态很多职业活动可以不局限于特定的地理空间展开，为远程办公创造了条件。根据 WEF 发布的《未来就业报告 2020》，84%的雇主将推进工作流程数字化，大幅扩展远程工作，44%的员工可能转移为远程工作。②而据相关数据调查研究，78%的企业用过远程工作方式，47%的企业计划在未来两年雇佣更多灵活工作者，到 2024 年，全球远程工作者将达到 6 亿人左右。③同时，很多新兴职业工作弹性强，给人才提供了灵活就业及兼职机会。据相关调查，2021 年美国自称为数字游民的达 1550 万人，比 2020 年增加了 42%，比 2019 年疫情之前增加 112%；其中，1020 万人同时拥有传统工作。④远程办公及数字游民的普遍化，意味着传统的劳动力结构将迎来巨大变革，人才将朝着更加灵活、更加多元的方向发展。

从从业者角度来看，新兴职业从业者以 Z 世代和千禧一代为主，其成长背景和互联网等信息技术密切相关，“职业选择自由”也越来越成为其追求的工作方式。在这种情况下，职业不仅是谋生的手段，更是个人价值与个人意义的实现方式。从对新兴职业从业者的调查来看，其工作满意度较高，61%的被调查者对新职业“比较满意”或“非常满意”，70%的被调查者对所从事职业持“较乐观”或“非常乐观”态度。⑤由此推测，将有更多的年轻人才对企业提供的无形资产更感兴趣，包括价值观、工作与生活的平衡等，更倾向于选择利于个人成长的新兴职业方向。

① 腾讯青年发展委员会，全球化智库.《新就业形态下新职业青年发展报告》[R/OL].（2022-8-5）[2022-10-08].
② 世界经济论坛. The Future of Jobs Report 2020[R/OL]. https://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf.
③ Gartner Research. Invest Implications: Forecast Analysis: Remote Workers Forecast, Worldwide. https://www.gartner.com/en/documents/3989492.
④ 据 MBO Partners 的报告，数字游民是指不依赖地理位置，使用技术来完成工作，过着“游牧式生活方式”的人。
⑤ 邓忠奇,程翔,张宇.中国新职业发展现状及从业者工作满意度研究——基于双维度微观调查数据[J].经济学动态,2021(12):52-71.

第三章 全球人才流动政策动向

人才跨国流动已成为全球化进程中的常态，而人才对其流入地经济增长与产业发展的作用日趋显著。因此，很多国家纷纷出台政策，希望引入更多人才到本国就业、创业、定居，通过国际智力资源助力本国经济社会发展。新冠肺炎疫情催生出一个更加多极化、区域化、数字化的世界，为了推动经济复苏，世界各国对人才的争夺加剧。许多国家都采取了有针对性的政策和措施，以谋求在新形势下争取更多更优秀的人才流入。

一、对高层次人才的争夺日渐激烈

（一）美国：改革 H-1B 签证随机抽签方式，加强 STEM 领域高技能、高收入人才吸引力度

美国众议院于 2019 年 7 月以压倒性多数票通过《2019 年高技能移民公平法案》，旨在取消原有的职业移民国别配额限制，将有利于美国科技企业从中国和印度大量吸纳人才，并加速持有临时性职业签证（H-1B）的国际人才获得美国永久居民身份的进程。2020 年美国 H-1B 签证申请量为 128508 人，发放量为 124983 人，相比 2019 年（申请量 191987 人，签证发放量 188123 人）有显著下降，签证的发放量下降了 33.56%。[①②] 2021 年 1 月，美国国土安全局对 H-1B 签证进行了重大改革，以高技能、高收入的人才优先的签证选择方式，取代一直以来实行的随机抽签方式。与之相对应的是签证签发率的上升，2021 年 10 月美国公民及移民服务局（USCIS）公布数据显示，H-1B 签证批准率达到过去十年以来的峰值

① U.S. Department of State-Bureau of Consular Affairs. FY2020&2019 NIV Workload by Visa Category [R/OL]. (2022-01-26) [2021-12-01] https://travel.state.gov/content/dam/visas/Statistics/Non-Immigrant-Statistics/NIVWorkload/FY2020NIVWorkloadbyVisaCategory.pdf. p.1.
② Scott Meeks. Fiscal Year 2020 U.S. Nonimmigrant Admissions Annual Flow Report [R/OL]. (2022-01-26) [2021-10-24] https://www.dhs.gov/sites/default/files/publications/immigration-statistics/yearbook/2020/21_1004_plcy_nonimmigrant_fy2020.pdf.

97.3%，远超特朗普政府时期的 H-1B 签证获批率。[①]2021 年，美国移民局收到了 308613 份 2022 年 H-1B 申请，根据上限最初批准了 87500 份；移民局在 2021 年 7 月进行了第二次选择，增加了 27717 份，2021 年 11 月又增加了 16753 份，最终 2022 财政年度总批准数达 131970 份，批准率接近 42%。[②]

对 STEM 领域专业人才在移民政策上也呈现积极态度。2022 年 1 月美国国土安全部对美国公民及移民服务局政策手册指南做出修订以保证专业人才在申请永居绿卡方面的便利。[③]该指南指出，国家利益豁免（National Interest Waiver，简称 NIW）对相当一部分 STEM 领域专业人士和企业家适用，即其雇主或申请人无需证明其他美国人无法胜任申请人所做的工作。《移民和国籍法》规定，雇主可以为具有特殊能力的人或具有高级学位的职业成员提交移民申请。美国公民及移民服务局可以免除工作机会要求，允许工作符合国家利益的移民在没有雇主的情况下为自己申请。获得国家利益豁免（NIW）意味着绿卡的申请和审批更加便捷，也可减少等待期。

对具备专业技能的国际学生提供了更长的找工作时间，以保证优秀国际学生能进入美国劳动力市场。2022 年 1 月，拜登政府公布新增 22 个专业领域归入 STEM 领域，以吸引大量专业领域人才留美工作。新增领域包含数据科学、数据分析、财务分析、商业分析、数据可视化、工业与组织心理学、社会科学等非传统 STEM 学科，一定程度上显示了美国社会经济发展对这些领域高端人才的需求。新的 STEM 领域学生也将获得 3 年的 OPT 期限。[④]

① Priyanka Sangani, ET Bureau. H-1B visa approvals surge to 97% in fiscal 2021. [EB/OL]. (2022-01-26) [2021-12-23] https://economictimes.indiatimes.com/nri/work/h-1b-visa-approvals-surge-to-97-in-fiscal-2021/articleshow/88436088.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst.
② Ogletree Deakins. USCIS Publishes FY 2023 H-1B Cap Registration Statistics [EB/OL]. (2022-08-25) [2022-04-26] https://ogletree.com/insights/uscis-publishes-fy-2023-h-1b-cap-registration-statistics/#:~:text=For%20the%20FY%202022%20H,selection%2C%E2%80%9D%20the%20agency%20reported.
③ U.S. Citizenship and Immigration Services. USCIS Updates Guidance on National Interest Waivers [EB/OL]. (2022-01-21) [2022-10-08]. https://www.uscis.gov/newsroom/alerts/uscis-updates-guidance-on-national-interest-waivers.
④ U.S. Department of Homeland Security. DHS Expands Opportunities in U.S. for STEM Professionals [EB/OL]. (2022-01-26) [2022-1-21]. https://www.dhs.gov/news/2022/01/21/dhs-expands-opportunities-us-stem-professionals.

表 3.1 2022 年美国移民局新拓展的 22 个 STEM 专业

生物能源	地理与环境研究
林业	数理经济学
森林资源生产经营	数学和大气/海洋科学
以人为本的技术设计	数据科学
云计算	数据分析
人类与动物关系学	商业分析
气候科学	数据可视化
地球系统科学	财务分析
经济学和计算机科学	数据分析
环境地球科学	工业与组织心理学
地球生物学	社会科学

资料来源：U.S. Department of Homeland Security. DHS Expands Opportunities in U.S. for STEM Professionals [EB/OL]. (2022-01-26) [2022-1-21]. https://www.dhs.gov/news/2022/01/21/dhs-expands-opportunities-us-stem-professionals.

（二）中国：着力形成人才国际竞争的比较优势

近 10 年来，中国的人才对外开放力度不断加大，“近悦远来”引才用才格局进一步形成，逐步从世界最大人才流出国转变为主要人才回流国，正在成为创新人才集聚、创新要素整合、创新活动活跃的全球人才高地。①

2015 年 3 月《中共中央、国务院关于深化体制机制改革加快实施创新驱动发展战略的若干意见》提出“实行更具竞争力的人才吸引制度”“加快外国人永久居留管理立法，规范和放宽技术型人才国人永久居留证的条件，探索建立技术移民制度”“加快制定外国人在中国工作管理条例”。2016 年 2 月，中央办公厅、国务院办公厅印发的《关于加强外国人永久居留服务管理的意见》，配套出台政策 140 余项，体制机制改革呈现密集创新突破态势，对外籍人才的管理办法进行优化升级。

① 丁小溪，范思翔，张研.《聚人才之力 筑复兴之基——新时代人才事业发展成就综述》，2022 年 8 月 21 日，http://www.news.cn/politics/2022-08/21/c_1128933335.htm.

2017 年 2 月，中国政府印发《外国人永久居留证件便利化改革方案》，将此前的“居留证”改为“居留身份证”，在功能上与中国“身份证”接轨，体现对外籍人的“身份”的认同。①

2017 年 4 月 1 日起，中国开始对来华工作的外国人统一实施《外国人工作许可通知》和《外国人工作许可证》。

2018 年 3 月，为强化对移民和出入境管理的统筹协调，中国改革相关国家机构，组建国家移民管理局，加挂中华人民共和国出入境管理局牌子，由公安部管理，通过国家移民管理局加强对国际移民的管理与服务。②

2015 年 7 月至 2017 年 5 月，中国公安部在上海、北京、福建等省市纷纷出台支持外籍人才创新创业的出入境政策。2019 年 7 月，国家移民管理局在全国范围内推广复制促进服务自贸区建设的 12 条移民与出入境便利政策。③重点政策包括：外籍高层次人才、有重大突出贡献以及国家特别需要的外国人，可申请在华永久居留；在中国境内连续工作满 4 年、每年实际居住不少于 6 个月，工资性年收入和年缴纳个人所得税达到一定标准的外国人，可申请在华永久居留；在中国境内工作、具有博士研究生学历或在国家重点发展区域连续工作满 4 年、每年实际居住不少于 6 个月的外籍华人，可申请在华永久居留；符合条件的外国专家学者，外籍高层次管理和专业技术人才，重点发展领域、行业引进的外籍人才和创新创业团队成员，可申办有效期 5 年以内的多次签证或居留许可；在国际知名高校毕业的外国学生，毕业后 2 年内来中国创新创业的，可凭学历（学位）证明等材料，申办有效期 2 年以内的居留许可等。

2021 年 9 月的中央人才工作会议以及 2022 年 10 月的中国共产党第二十次全国代表大会报告强调，科技是第一生产力、人才是第一资源、创新是第一动力，加快建设世界重要人才中心和创新高地，着力形成人才国际竞争的比较优势，加强人才国际交流，用好用活各类人才。④

① 王辉耀，苗绿，郑金连. 国际人才学概论[M].北京：中国人事出版社, 2020：153.
② 林靖. 国际移民管理局成立[N]. 北京晚报, 2018-04-03.
③ 国家移民管理局在全国范围内推广复制促进服务自贸区建设 12 条移民与出入境便利政策.(2019-7-17)[2022-10-08]. http://www.gov.cn/xinwen/2019-07/17/content_5410623.htm.
④ 深入实施新时代人才强国战略 加快建设世界重要人才中心和创新高地[N]. 人民日报,（2021-09-29)[2022-10-08].
习近平：高举中国特色社会主义伟大旗帜 为全面建设社会主义现代化国家而团结奋斗——在中国共产党第二十次全国代表大会上的报告.中国日报双语新闻,（2022-10-25）[2022-10-26].

（三）日本：增设高度专门职业签证，调整积分制度，提前完成 2 万名高层次人才引进目标

日本于 2015 年 4 月实施《出入国管理及难民认定法》修正案，针对高层次人才设立“高度专门职业 1 号/2 号”签证，并通过构建高层次人才积分制度进一步扩大高层次人才的引进规模。该积分制度将申请者分为“学术研究”“专业技术”“经营与管理”三类，根据各类别职业特点对申请者学历、职业资质、年龄、年收入等项目评分。积分满 70 分者即认定为高层次人才，可申请有效期 5 年的高度专门职业 1 号签证，持有该签证满 3 年可申请转为无居留时间限制的 2 号签证。同时，放松了高层次人才在日本的就业限制和申请永久居留权标准。2017 年起，日本开展一系列政策调整，更大幅度地向全球高层次人才敞开永久居留的大门。一方面，调整积分标准并增设加分项降低高层次人才资格门槛，扩大人才认定范围；另一方面，积分达 70 分以上人才申请永久居留权所要求的居留时长从 5 年缩短到了 3 年，80 分以上的人才居留时长要求缩短到 1 年。截至 2019 年 12 月，日本已累计认定 21347 名外籍高层次人才，提前完成其在《未来投资战略 2017》中提出的在 2022 年底前引进 2 万名高层次人才的目标。[①]

（四）英国：改革签证制度强化对杰出人才及优秀留学人才的吸引力

为吸引更多高层次创新型人才赴英工作，2019 年 8 月，时任首相约翰逊提出人才签证改革愿景，包括取消人才签证的年度发放上限，取消人才签证申请者必须在抵英前确定其就业去向的限制，并保障其家属在英就业权利等。[②]2020 年 1 月，英国内政部推出全球人才签证（Global Talent Visa），取代原有的杰出人才签证（Tier 1 Exceptional Talent Visa），成为英国吸引杰出人才的新计划。该签证准许学术和研究、艺术和文化以及数字技术领域的领导者或潜在领导者在英国工

https://china.chinadaily.com.cn/a/202210/25/WS6357e9c3a310817f312f31d5.html.
① 法務省. 高度人材ポイント制の認定件数（累計）の推移. http://www.moj.go.jp/content/001284800.pdf.
② Home Office: PM sets out vision to cement UK as a science superpower. https://www.gov.uk/government/news/pm-sets-out-vision-to-cement-uk-as-a-science-superpower. Accessed April 16, 2020.

作长达 5 年，且无需提供担保人或已知工作机会。在继承原有签证申请“快速通道”制度[①]的同时，将英国研究和创新署（UKRI）列入审核申请人资质的指定机构行列，以满足英国对创新研究人才的需求。新签证持有者可分为“UKRI 认可资助项目”“行业领袖”或“行业新秀”三类，其中前两者在英国居留工作满 3 年后可申请英国永久居留权，后者则为 5 年。同时，针对创业型人才，英国引入新的创业签证（Start-up Visa）和创新者签证（Innovator Visa）取代原有的企业家签证。新签证大幅降低投资移民的投资额门槛，但对申请人的英语能力提出更高要求，反映出英国期望创业人才更好地融入当地，从而更顺畅地推进其创业计划，更好地为英国经济社会发展服务。

为了进一步在全球国际学生源争夺战中占得先机，自 2020 年 10 月 5 日开始，英国新的学生签证系统取代原有“第四级签证”（Tier 4），允许学生开学前 6 个月提交签证申请，并简化了签证申请流程。[②]同时，于 2021 年夏季正式重启国际学生毕业后可以留在英国找工作的留学后工作签证 PSW（Post-Study-Work）。2021 年 7 月 1 日起，成功完成本科或硕士学位的国际学生将可以通过新的申请通道申请 PSW，以实现毕业后两年内在英国自由合法地工作；完成博士学位的学生则可申请三年的毕业生签证。[③]

为了吸引更多专业技术型人才来英就业，英国政府 2020 年宣布设立“人才办公室”以招揽全球顶尖的科学家。[④]面向全球顶尖大学应届毕业生的“高潜力个人签证（High Potential Individual Visa）”于 2022 年 5 月 30 日开放。此签证计划持续 2 年时间，申请者能够在大部分岗位内工作，且不必通过工作岗位维持签证。[⑤]英国政府的一系列便利政策，大大增强了国际学生及优秀人才赴英留学和工作的意愿。

① “快速通道”是指，人才签证申请者若受聘于英国政府指定的“特殊岗位”，则其可以凭雇主证明信在认可环节得到优先处理。
② British Council.学生签证. [EB/OL] [2021-11-30]. https://study-uk.britishcouncil.org/zn-hans/moving-uk/student-visas.
③ Home Office. Graduate route to open to international students on 1 July 2021. [EB/OL]. (2021-03-04) [2021-11-30]. https://www.gov.uk/government/news/graduate-route-to-open-to-international-students-on-1-july-2021.
④ Department for Business, Energy & Industrial Strategy. Government fires up R&D across the country to cement the UK as science superpower. [EB/OL]. (2020-07-01) [2021-11-30]. https://www.gov.uk/government/news/government-fires-up-rd-across-the-country-to-cement-the-uk-as-science-superpower.
⑤ UK Visas and Immigration. High Potential Individual visa: global universities list. (2022-05-06) [2022-10-08]. https://www.gov.uk/government/publications/high-potential-individual-visa-global-universities-list.

（五）欧盟：放宽流动限制，推出创业签证，推动创新创业高层次人才引进

欧盟一方面放宽非欧盟科研人员及学生在欧盟境内的流动限制，另一方面推出初创企业签证，加强创新创业高层次人才引进。2016 年，欧盟发布 2016/801 号指令，要求其成员国修订法律，方便非欧盟人士入境进行研究、留学、培训、志愿服务等活动。多数欧盟成员国在 2018-2019 年间先后修改法律，放宽非欧盟科研人员及学生在欧盟成员国境内流动的条件：其中，西班牙、葡萄牙等国简化了在本国接受高等教育的非欧盟留学生申请暂住许可和工作签证的流程，瑞典等国则宣布放宽对研究和高等教育人士居留许可的发放限制。

降低欧盟“蓝卡”的准入门槛，提升“蓝卡”的吸引力。2005 年 12 月，欧盟委员会提出“合法移民政策计划”（Policy Plan on Legal Migration）。该计划提出了引进高层次人才的重要性，并提出引进高层次人才的战略措施，认为类似于美国“绿卡”的工作许可证制度，将会有效提升欧盟在引进人才方面的优势。2007 年 10 月 23 日推出了欧盟“蓝卡”计划，即“关于第三国高技术受雇公民入境和居住条件的指示”。2009 年 5 月 25 日，欧盟理事会批准了这一计划，并规定两年后正式实施，标志着欧盟在引进高技术人才方面迈出了重要的一步，同时也推动了欧盟共同移民政策的形成和确立。2021 年 9 月，欧盟议会颁布新规，要求各国进一步简化蓝卡的申请程序以便吸引非欧盟国人才就业。[①]欧盟通过降低准入门槛，释放更加有吸引力的条款，意图吸引更多高素质外国工人来欧工作以缓解劳动力短缺趋势。

在吸引创业型人才方面，自西班牙于 2013 年颁布《创业签证法案》[②]以来，欧盟多国（如意大利、丹麦、法国等）先后采取措施，为非欧盟人才在本国创办、投资或加盟技术性初创企业提供专门签证。这些签证计划多数不要求创业者或创业团队事先获得融资，而是注重创业计划的创新性、技术驱动性及成长潜力。以

① The European Union Parliament and the Council. ‘Directive 2021/1883’ (2021)[2022-10-20]. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021L1883&from=EN.
② 西班牙政府与欧盟外交部. “投资型签证”. https://www.exteriores.gob.es/Consulados/londres/en/ServiciosConsulares/Paginas/Consular/Visado-para-emprendedor.aspx.

法国创业签证项目为例，初创企业创始人凭获得法国政府认可的创业计划书即可在法国境内任意一处技术企业孵化器参与选拔，通过选拔者可获得“企业创始人”人才签证，并获得孵化器相应支持。

二、加大对技能人才或劳务移民的引进

在老龄化加剧、生育率走低、劳动年龄人口不足的压力下，近年来多个发达国家采取修订劳务移民法律法规，改革劳务签证制度等方式，试图通过引进各层次移民劳工（包括短期劳工和永久性技术移民）满足本国劳动力市场需求。

（一）日本：设置新的“特定技能 1 号/2 号”签证，加快了引进外国劳动力的步伐

日本长期以来通过“技能实习”居留资格吸纳了大量来自中国和东南亚的技能实习生，以填补其在中低端行业的劳动力缺口。截至 2019 年 6 月，在日技能实习生总数达 36.77 万人，较 2015 年上升了 90.9%，成为继永久居留者之后的第二大在日外国人群体。[①] 但在老龄化和低生育率趋势难以遏制的背景下，日本对劳动力的长期需求缺口进一步扩大，而“技能实习”项目受限于劳动力技能层次和实习时长（最长不超过 5 年，且实习期满后必须离开日本），不能满足相应需求，通过劳务签证改革引进更多劳动力势在必行。2019 年 4 月，日本实施新版《移民控制和难民识别法修订法案》，针对劳动力短缺的农业、建筑业、造船业等 14 类产业设置新的“特定技能 1 号/2 号”签证，加快引进外国劳动力。[②]其中，“特定技能 1 号”面向“具有一定程度的行业知识及技能”或已完成“技能实习 2 号”修习的外国人；而“特定技能 2 号”则面向经过测试被认定为技能“熟练”的外国人（目前仅限于建筑业和造船业）；预计每年通过此类签证可接纳约 5 万名外籍劳动力。“特定技能 1 号”最长居留时间为 5 年，且不可偕同家

① 法務省. 令和元年 6 月末現在における在留外国人数について. http://www.moj.go.jp/nyuukokukanri/kouhou/nyuukokukanri04_00083.html. Accessed April 16, 2020.
② Ministry of Foreign Affairs of Japan. What is the SSW? https://www.mofa.go.jp/mofaj/ca/fna/ssw/us/overview/. Accessed August 29, 2022.

属入境；而“特定技能 2 号”签证持有者的居留资格可无限续期（即事实上的永久居留），其配偶、子女也有机会获得居留资格。此外，日本通过制定和修订“外国人援助计划”等机制，从雇佣管理、劳动者待遇等多个方面完善维护外籍劳动力合法权益的相关条款，并对外国人在日工作提供必要的信息支持和翻译援助，旨在进一步加强赴日就业对外籍劳动力的吸引力。①

（二）欧盟：修改相关法律应对劳动力短缺

为了应对欧盟内劳动市场的紧缺，欧盟委员于 2022 年 4 月 27 日向其成员国提出了最新的合法移民方案。该方案将解决现有的一些挑战，如 COVID-19 后的欧盟经济恢复；欧盟的劳动力市场短缺；欧盟向绿色和数字经济转型等。②

德国则通过修订相关法律以应对劳动力短缺。根据德国联邦就业局就业研究所数据，截至 2019 年第四季度，德国劳动力市场约有 141.4 万个职位空缺；③而德国工商会（DIHK）2018 年的一项调查则表明，过半数德国企业面临劳动力短缺的威胁。④德国《技术移民法》于 2020 年初生效，该法旨在放宽对非欧盟籍技术人士的移民申请限制，引入适龄外籍人口以应对相关行业劳动力短缺问题，预计每年为德国带来 25000 名专业及技术人才。该法扩大了合格的专业人才来德国工作的可能性，尤其是来自非欧盟国家的、经过专业、非学术培训的技术工人将更容易到德国工作。合格专业人才的条件放宽到经过至少两年的培训课程而且具有大专学历或职业培训资格的人员，其进入劳动力市场也更加容易，只要拥有一份雇佣合同或一份特定的工作机会，并具有德国认可的资格即可以申请，而且可以从事其有资格的相关职业。⑤拿到工作合同或入职邀请的人都可以申请有效期为 4 年或者与雇佣合同期限相同的居留许可，4 年后，申请人可以申请德国永久

① OCED iLibrary. International Migration Outlook 2020. https://www.oecd-ilibrary.org/sites/b140958b-en/index.html?itemId=/content/component/b140958b-en#:~:text=In%202018%2C%20Japan%20received%20115,)%20and%200.1%25%20humanitarian%20migrants. Accessed August 29, 2022.
② European Commission. Questions and Answers – Attracting skills and talent to the EU. https://ec.europa.eu/commission/presscorner/detail/en/QANDA_22_2655. Accessed August 29, 2022.
③ Institut für Arbeitsmarkt- und Berufsforschung: Aktuelle Ergebnisse. https://www.iab.de/de/befragungen/stellenangebot/aktuelle-ergebnisse.aspx. Accessed April 1, 2020.
④ DIHK: DIHK-Economic-Survey Fall 2018. https://www.dihk.de/resource/blob/3460/9e6a7b03009839194db2bc12178c213f/dihk-economic-survey-fall-2018-data.pdf. Accessed April 1, 2020.
⑤ The Federal Government. https://www.make-it-in-germany.com/en/visa/kinds-of-visa/work/skilled-immigration-act/.

居留许可。该法也为紧缺的特殊行业人才制定了移民德国的“绿色通道”，如医生、注册认证护士等不需要在德国申请职业资格认证，只需证明在相关行业具有至少 5 年的从业经历，就可以申请德国移民。尚未确定工作，但具备基本德语技能并能经济自给的非欧盟籍人士，不论其技能水平，均有权以寻求就业机会为由在德国停留 6 个月。[①]同时，德国也通过与移民输出国签订双边协议等形式，向特定行业输送移民劳动力。例如，联邦就业局与德国国际合作机构（GIZ）联合推出“三赢计划”（Triple Win Project），与波黑、塞尔维亚、菲律宾、突尼斯、越南签订合作协议，从上述五国招募执业护士或护士训练生以满足自身对护理人员的需求。

（三）加拿大：推出专门的移民项目缓解特定地区劳动力紧缺

为满足各省的选人、用人需要，加拿大在移民计划中单列有“省提名”项目，各省根据自身发展需求，分别在语言能力、专业等方面修订其提名要求。在加拿大 2019-2021 三年百万移民计划中，“省提名”名额达 20 万人（不含魁北克技术和商业移民项目），其中 2020 年、2021 年分别计划引进 6.78 万、7.13 万人，最终该计划在 2019 年实际引入 6.86 万人[②]，受新冠肺炎疫情影响 2020 年实际引入 3.87 万人。[③]在“省提名”项目以外，加拿大政府还采取一系列国家级移民试点政策，以满足小城市、农村等边远地区的劳动力需求。2017 年，加拿大政府针对新斯科舍、新不伦瑞克、纽芬兰和拉布拉多、爱德华王子岛四省推出“大西洋移民试点计划”（AIPP），引导移民技术工人和国际毕业生到上述四省份就业。2019 年 3 月，加拿大移民局宣布将该试点有效期延长至 2021 年 12 月，相应配额也从 2018 年的 1000 人上升至 2020 年的 4000 人。2021 年加拿大移民局宣布

① Fachkräfteeinwanderungsgesetz vom 15. August 2019.[2022-10-10]. https://fachkraefteeinwanderungsgesetz.de/gesetzestext/.
② Immigration, Refugees and Citizenship Canada. 2020 Annual Report to Parliament on Immigration. [EB/OL].(2019-12-31) [2022-10-08], https://www.canada.ca/en/immigration-refugees-citizenship/corporate/publications-manuals/annual-report-parliament-immigration-2020.html#immigration2019
③ Immigration, Refugees and Citizenship Canada. 2021 Annual Report to Parliament on Immigration. [EB/OL]. (2021-12-31) [2022-10-08]. https://www.canada.ca/en/immigration-refugees-citizenship/corporate/publications-manuals/annual-report-parliament-immigration-2021.html#highlights.

将自 2022 年 1 月 1 日起将该计划列为永久计划，提升相应配额至 6000 人。[①]基于 AIPP 的成功实践，加拿大 2019 年又出台“农村及北部地区移民试点计划”（RNIP），重点引导移民技术工人和国际毕业生到指定的 11 个边远社区工作、定居，缓解当地劳动力紧缺问题。为加快边远社区的移民数量增长，加拿大政府为 AIPP 和 RNIP 开放了单独的审批通道，审批时长约在 6 个月至 1 年左右，明显短于其他移民计划。

（四）澳大利亚：为特定地区扩张劳务移民接收渠道

澳大利亚近年来将移民接收计划与其人口规划相结合，鼓励新移民在劳动力短缺的“澳大利亚边远地区”[②]就业、定居。澳大利亚 2019-2020 年度移民计划在降低移民数量上限的同时，为州/领地提名和雇主赞助的签证类别分配更多的名额。该计划除为各州/领地提名设置 24968 个名额外，还为边远地区预留 25000 个专用名额。[③]2019 年 4 月，澳大利亚内政部宣布，持有边远地区教育机构所颁发高等教育毕业证书的毕业生，或居住在边远地区的毕业生临时工作签证（485 类）持有者可以申请将其 485 类签证有效期延长 1 年，但毕业生在延长期内仍须在边远地区内工作、生活。2019 年 11 月，澳大利亚针对边远地区移民签证（即前述 25000 个专用名额）实施改革，推出新的边远地区技术移民签证（491 类）和边远地区雇主担保技术移民签证（494 类），分别取代原有的 489 类和 187 类签证。与原有签证相比，新签证有效期延长至 5 年，且将“边远地区”的认定范围扩大至除悉尼、墨尔本和布里斯班都会区以外的澳大利亚全境。相应地，新签证也提高了此类签证转换为永久居民身份的标准（如将“在边远地区居住、工作时长”下限从 2 年增加至 3 年），旨在使移民劳动力为边远地区带来的经济效益

① Immigration, Refugees and Citizenship Canada. Speaking Notes for the Honourable Sean Fraser, Minister of Immigration, Refugees and Citizenship: Announcement of the Permanent Atlantic Immigration Program. [EB/OL].(2021-12-17) [2022-10-08]. https://www.canada.ca/en/immigration-refugees-citizenship/news/2021/12/speaking-notes-for-the-honourable-sean-fraser-minister-of-immigration-refugees-and-citizenship.html.

② “澳大利亚边远地区”（Regional Australia）指澳大利亚境内除堪培拉、悉尼、纽卡斯尔、中央海岸、伍伦贡、布里斯班、黄金海岸、墨尔本和珀斯都会区以外的全部区域。来源：Australian Department of Home Affairs: Working Holiday Maker (WHM) program. https://immi.homeaffairs.gov.au/visas/getting-a-visa/visa-listing/work-holiday-417/specified-work. Accessed March 31, 2020.

③ Australian Department of Home Affairs: Planning Australia’s 2020-21 Migration Program. https://www.homeaffairs.gov.au/reports-and-pubs/files/discussion-paper-planning-australias-migration-program-2020-21.pdf. Accessed March 31, 2020.

最大化。

（五）新西兰：为特定行业扩张劳务移民接收渠道

2022 年 8 月，新西兰移民部长宣布成立专门工作小组，以加快工作签证以及旅游签证的办理速度。同时，引入一系列移民新政策以引入移民工人，主要包括：（1）豁免老年护理、建筑和基础设施、肉类加工、海鲜、季节性滑雪行业和探险旅游行业等领域中位数工资要求，方便行业引入更多移民工人。[①]（2）将 2022/2023 年打工度假签计划配额翻倍，将额外准许 12000 名打工度假者进入新西兰。[②]（3）对 2022 年 8 月 26 日至 2023 年 5 月 31 日到期的、人在新西兰的打工度假签有效期延长 6 个月，以留住已经在新西兰的移民工人，并让在海外的工人有更多时间来到新西兰。[③]

① New Zealand Immigration. Details of Sector Agreements for specific AEWV occupations announced, [EB/OL].(2022-08-21) [2022-10-08]. https://www.immigration.govt.nz/about-us/media-centre/news-notifications/details-of-sector-agreements-for-specific-aewv-occupations-announced.
② New Zealand Immigration. Changes to Working Holiday Scheme visas announced. [EB/OL].(2022-08-21) [2022-10-08]. https://www.immigration.govt.nz/about-us/media-centre/news-notifications/changes-to-working-holiday-scheme-visas-announced.
③ New Zealand Immigration. Visa extensions and visa conditions. [EB/OL].(2022-08-26) [2022-10-08]. https://www.immigration.govt.nz/about-us/covid-19/in-new-zealand/visa-information/visa-extensions-and-visa-conditions.

第四章 全球人才流动治理及相关建议

一、全球人才流动中的国际组织

（一）国际组织的全球人才流动治理实践

新冠肺炎疫情、气候变化、乌克兰危机等因素导致人员流动也即国际移民问题在全球治理体系下的重要性凸显。解决国际移民问题需要持续开展国际对话，寻求恰当的国际合作模式来保障移民来源国、目的国以及移民群体三方的权益，需要全球层面的协调与合作，国际组织在其中的作用不言而喻。首先，国际组织为全球人才流动治理提供了知识性与物质性的公共物品；其次，国际组织推动国家与非国家行为体、私营部门等利益相关方的合作，促进全球人才流动治理伙伴关系的建立；再次，国际组织以其平台的开放性与组织的专业性更能解决全球人才流动的实际性问题。当前的全球人才流动治理相关组织基本上是国际移民治理相关组织。与国际移民相关的国际组织除了联合国、世界银行、国际劳工组织这类传统的政府间国际组织以外，也有国际移民组织、国际移民与发展中心等专业处理移民问题的组织。

1. 联合国

联合国成立于 1945 年，在国际移民方面主要有两方面贡献：一是建立一些由国际公约组成的国际移民规范性框架，从人权、就业、形式等方面保障国际移民的权利。二是联合国相关机构以及联合国专门机构，包括国际劳工组织、联合国难民事务高级专员办事处、人权理事会、世界银行、世界贸易组织、世界卫生组织等，都在各自的职权范围内对国际移民投入关注，形成了联合国系统应对国际移民问题的机制性框架。[①]

① United Nations. About the UN. Available at: https://www.un.org/en/about-us.

2. 国际劳工组织

国际劳工组织（International Labour Organization，ILO）是以国际劳工标准处理有关劳工问题的联合国专门机构，总部在日内瓦。1919 年，根据《凡尔赛和约》，国际劳工组织以国际联盟附属机构的身份成立，并在 1946 年成为联合国旗下最早的特定领域专业机构。其宗旨是促进充分就业和提高生活水平；促进劳资合作；改善劳动条件；扩大社会保障；保证劳动者的职业安全与卫生；获得世界持久和平，建立和维护社会正义。[①]在人才流动方面，国际劳工组织主要有三方面贡献：一是通过协议和公约，制定保护移民劳工权益的最低标准；二是开展劳务移民领域的研究和实践，向成员国提供信息咨询、培训、技术援助；三是搭建平台，促进国际移民治理的对话合作。国际劳工组织（ILO）于 2014 年推出公平招聘倡议（Fair Recruitment Initiative），并在 2021 年开始了第二阶段，通过加强、交流和传播有关国家和国际招聘流程，改善法律、政策和执法以促进公平招聘，促进公平的商业行为以及赋权和保护工人权利等方式，确保跨境招聘能够得到有限监管，防止人口贩运与强迫劳动。[②]除了搭建对话平台以外，国际劳工组织还深入实施具体项目，加强成员国与成员国之间国际劳务移民治理的能力。例如，为帮助南亚与东南亚国际劳务走廊的劳务移民，国际劳工组织在巴基斯坦实施了为期三年（2020-2023）的“南亚与东南亚劳务移民治理（Governance of Labour Migration in South and South-East Asia，GOALS）”项目。通过改善双边劳动协议（BLA），支持政府制定南亚资格参考框架，推动巴基斯坦引入国家技能护照的方式，在南亚与东南亚此区域和国家层面改善劳务移民的整体治理。[③]

3. 国际移民组织

国际移民组织（International Organization for Migration，IOM）前身是欧洲移民问题政府间委员会（ICEM），1989 年改用现名，总部设于瑞士日内瓦。[④]国际移民组织定期出版《世界移民报告》，针对国际移民现状以及重点、热点问题展

① 根据国际劳工组织官网（http://www.ilo.org/global/about-the-ilo/lang--en/index.htm）整理。
② International labour Organization. Fair Recruitment Initiative. [2022-9-30]. https://www.ilo.org/global/topics/fair-recruitment/fri/lang--en/index.htm
③ International labour Organization. Governance of Labour Migration in South and South-East Asia (GOALS). [2022-9-30].https://www.ilo.org/islamabad/whatwedo/projects/WCMS_839320/lang--en/index.htm.
④ 根据国际移民组织官网（http://www.iom.int/）整理。

开研究，成为目前国际移民分析方面最全面和最权威的报告。国际移民组织主要在“移民与发展、促进移民、规范移民、被迫移民”四大领域进行移民治理，具有一定的移民治理特色：一是实施移民运输计划；二是提供移民健康与医疗服务；三是开展针对国家的移民治理能力建设；四是关注女性移民者；五是实施高技能移民的返回和融入计划方案，支持发展中国家经济社会发展。

国际移民组织作为解决国际移民问题的重要国际机构之一，近年来不断在全球人才流动的具体事务领域开展了大量的活动，彰显其全球治理行为体的角色。

一是推动联合国大会于 2018 年通过了《安全、有序和正常移民全球契约》。该契约旨在支持国际移民治理方面的国际合作，使得联合国与其他利益相关方能够推出正常移民融入当地社会的相关政策，减少移民群体与当地社会的分裂。

二是帮助移民应对新冠肺炎疫情的大流行。2020 年国际移民组织就在全球范围内提供了超过 109000 人次的新冠肺炎测试，超过 200 万人在类似营地的环境中受益于与新冠肺炎相关的站点升级。[①]2021 年，国际移民组织通过了新的新冠肺炎疫情战略应对和恢复计划，针对服务持续性、公共卫生措施、新冠肺炎影响以及信息便利性四个战略目标进行恢复，以降低新冠肺炎疫情对移民工作、生活的冲击。

三是构建全球政策网络。2020 年 12 月，推出全球政策网络，为移民工人提供明确的使用指导。[②]减少移民工人在跨境招聘方面面临的风险，鼓励司法管辖区域之间形成合作机制，推动各国构建安全有序的劳务移民秩序。

四是联合政府、民间社会和私营部门，创建移民工人道德招聘旗舰项目。该项目通过提高移民工人的认识和能力、为移民工人发声和赋权、构建符合国际标准的监管机制、私营招聘机构自愿认证且利益相关者加强对话等方式建立符合道德标准的招聘规范。2021 年 7 月 30 日，国际移民组织与可持续酒店联盟启动合作伙伴关系，通过打击对移民工人的压榨行为、禁止强迫移民工人劳动等方式来解决不道德的招聘问题。[③]

① International Organization for Migration. Annual Reports 2022. 326.
② International Organization for Migration. IOM Launches Global Policy Network to Promote Ethical Recruitment. （2020-12-3)[2022-9-28].https://www.iom.int/news/iom-launches-global-policy-network-promote-ethical-recruitment
③ International Organization for Migration. IOM and Sustainable Hospitality Alliance Launch Multi-Year Partnership to Promote Ethical Recruitment, Protect Migrant Workers in Tourism. (2021-7-30)[2022-9-

4. 其他国际组织

其他国际组织亦广泛参与了全球移民治理。世界银行（World Bank）自 2006 年起每年发布 2-3 期《移民和发展报告》，对国际移民汇款、高技术工人移民、移民的决定性因素、人口的短期迁移、社会保护与管理、贸易、外国直接投资与移民的关系等问题进行深入分析。[①]并从全球经济学视角剖析国际移民在宏、微观层面的效应与影响，揭示了国际移民及汇款对全球经济的积极贡献。经济合作与发展组织（Organization for Economic Co-operation and Development），简称经合组织（OECD），提供较为完备的移民数据库和有深度的移民研究报告，为移民问题研究者和移民政策制定者提供了研究材料和政策制定依据。[②]

此外，世界贸易组织、国际红十字协会在移民治理上也有一定的贡献。在 2001 年世界贸易组织多哈回合谈判中，服务贸易成为了讨论的主题，而全球范围流动的人员即服务的提供者，这意味着世界贸易组织也开始参与移民问题尤其是移民工人的在治理。在移民与全球发展等国际论坛上，世界贸易组织始终是重要的参与者。国际红十字协会重点关注非法移民、难民问题。

（二）区域性合作组织的全球人才流动治理实践

联合国及其下属机构均属于全球性的国际组织，也正是由于这个原因，国际组织在全球移民治理参与过程中，更容易摆脱国家利益带来的影响，从而真正为提升国际移民的福利而努力。但是，在具体执行过程中，最终影响移民问题解决的往往是当事国家（包括移民的来源国、中转国、接收国）的态度与政策，而当事国考虑移民问题的出发点不能不考虑国家利益的得与失。相比之下，区域性的合作更能够反映出移民治理的分歧，更能在兼顾当事国家利益的同时，也有利于形成解决区域性移民问题行之有效、互利共赢的可持续方案。

28].https://www.iom.int/news/iom-and-sustainable-hospitality-alliance-launch-multi-year-partnership-promote-ethical-recruitment-protect-migrant-workers-tourism

① 根据世界银行官网（http://www.worldbank.org/）整理。

② 根据经济合作与发展组织官网（http://www.oecd.org/）整理。

1. 欧盟委员会

欧盟委员会下设迁移与内政部门（Department of Migration and Home Affairs）负责管理国际人才流动问题。迁移与内政部门负责的迁移事项是欧盟委员会当前的十大优先事项（10 Priorities）之一。[①]欧盟对于国际移民问题极为重视，保证人员的自由流动与安全也是欧盟的根本宗旨之一。欧盟通过《马斯特里赫特条约》《阿姆斯特丹条约》《尼斯条约》《里斯本条约》等，以法律的形式允许在欧盟成员国居住或持有工作签证的移民拥有在欧盟境内自由流动的权利。

2. 东南亚国家联盟

东南亚国家联盟（Association of Southeast Asian Nations，东盟）在亚太地区移民治理上起到了重要的作用。东盟在国际人才流动的实践主要集中于对移民劳工的治理。2007 年东盟第 12 届领导人会议上通过了《东盟关于保护和促进劳工移民权利的宣言》，即《宿务宣言》，肯定了劳工移民群体对东盟各成员国的贡献，采取措施保护移民劳工的权利，防止虐待与人口贩卖，彰显了东盟致力于劳工移民治理的决心。[②]为监督宣言的落实，2008 年东盟成立了“保护和促进劳工移民权利的宣言执行委员会”（ACMW），ACMW 制定了一系列项目和活动，涉及移民的安全迁移、打击人口贩运等方面，有效提高东盟各国政府对保护和促进劳工移民权力的相关认识和政策实行能力。自 2008 年起，ACMW 每年都举办东盟劳工移民论坛，至 2021 年已举办 14 届，通过建立开放平台的方式讨论东盟各成员国政府、工会组织、雇主以及各利益攸关方在国际劳工上所面临的问题，有效推进东盟劳工治理的相关工作进程。

（三）全球人才流动全球治理主要问题

当前的全球治理机制无法完全应对日益激烈的全球人才竞争，导致了全球人才流动领域缺乏监管，从长远来看，可能会导致恶性竞争、人才使用不足等问题，

① 关于欧盟委员会迁移与内政部门的具体信息，详见 http://ec.europa.eu/dgs/home-affairs/index_en.htm.
② ASEAN. Statement of the Establishment of the ASEAN Committee on the Implementation of the ASEAN Declaration on the Protection and Promotion of the Rights of Migrant Workers. [2022-9-30]. https://asean.org/statement-of-the-establishment-of-the-asean-committee-on-the-implementation-of-the-asean-declaration-on-the-protection-and-promotion-of-the-rights-of-migrant-workers/.

进而对可持续发展产生不利影响。概括来讲，全球人才治理存在以下空白或挑战：

一是全球范围尚未形成一个国际人才合作的共识。全球化深入发展的今天，全球范围内的分工协作越来越普遍，来自多元文化背景的人才往往更容易激发创新。而对国际人才合作的价值的关注或研究相对较少，导致人们对这一议题缺乏共识。然而，就全球人才流动而言，竞争与合作是一个硬币的两面。从人类整体发展的角度来看，合作极其重要，不应被忽视。

二是全球缺乏一个就人才流动开展对话、协调的机制和平台。在人才政策、职业资格互认等方面各个国家有着许多差异，需要通过对话协调来解决。目前在欧盟、东盟内部存在一些相关机制，中欧之间也开展了“中欧人员往来对话项目”，但这些机制仍是区域性的，不稳定的，而且往往只是局限在相关的政府部门之间，未涵盖社会其他利益相关体。

三是全球人才流动的数据信息缺乏。尽管全球人才流动的规模日趋扩大，但对于其确切的规模，人才的性别、年龄、专业等分类数据，还比较缺乏。这使得决策者难以做出精准决策，研究者也无法开展更深入的分析。近些年，随着职场社交平台的崛起，这一空白正在被填补，其数亿用户数量使得获得人才数据成为可能。但职场社交平台作为商业组织，其数据的使用面临众多限制。

毋庸置疑，人才流动对全球经济发展做出了巨大贡献。然而，与国际贸易和金融管理等其他经济部门相比，人才流动的全球治理却被大大忽视了。全球移民，尤其是高技能人才的移民，推动了科技的发展，但同时也给全球治理带来了新的挑战。

二、全球人才流动国际治理的创新应对——国际人才组织联合会

虽然全球人才流动及治理在理论和实际应用层面皆取得了重大进展，但世界上成立的有关人口流动的国际组织如国际移民组织、国际劳工组织等的侧重点并非在人才，前者侧重于难民问题，后者则侧重于劳动者权利保障。而新时期下，越来越多的跨国流动人才，成为了国际人口流动的重要群体，现有的诸多挑战仍

阻碍着全球人才流动，限制了这些人才资源对经济和社会发展的潜在贡献。这表明需要通过建设国际组织来进一步讨论和解决一系列关键问题，包括如何更好地发挥在全球范围内流动的人才的作用；如何确保和规范合理的人才流动；如何平衡原籍国和目的国的利益，从而找到解决当前和未来问题的方法。

（一）国际人才组织联合会的宗旨

国际人才组织联合会（Alliance of Global Talent Organizations, AGTO）致力于促进国际人才流动，加强人才的广泛交流与合作，为发展中国家提供基础性人才保障和智力支持，同时与发达国家等加强关键领域的人才合作，从而提高人才流动的便利化，促进人才培养。具体来说，其宗旨概括为以下几个：[①]

一是营造公平竞争的国际人才交流对话环境。推动和支持有关区域性和全球性人才的讨论和对话，提高对国际人才交流过程中出现的机遇和挑战的理解，增强对有效的政策措施的识别和发展，分辨有利于国际合作的综合性方法和措施。

二是提升世界人民福祉，促进国际人才的共享。受制于经济社会发展水平的制约，目前世界各国的人才资源差异很大，这就需要建立人才共享和交流平台，实现国际间人才资源共享。为政府、非政府组织、人才及各种利益相关方提供专业知识、技术等层面支持，提升国家提高人力资本效能的能力。

三是保障国际人才合法权益。在公平、公正、合理原则下，积极引导和规范国际人才的各方面合法权益，维护人才的基本权益和主张。

（二）国际人才组织联合会的功能[②]

国际人才组织联合会作为国际间人才交流合作平台，致力于形成一系列的合作机制，打造平台，聚集信息，为人才的发展和合作服务，并在有效引导国际人才交流、流动、就业、认证、居留方面做出应有贡献。其在功能设计上主要包括四大方面：

① Huiyao Wang, Alistair Michie Editors. Consensus or Conflict? China and Globalization in the 21st Century[M]. Springer. 2021: 201.

② 本节部分内容来自：王辉耀，苗绿，郑金连. 国际人才学概论[M].北京：中国人事出版社, 2020：208-209.

达成共识。致力于人才流动治理，促进国际社会达成扩大国际人才交流、人才开放合作、互利共赢的普遍共识。

机制建设。建设全球人才的对话、协调、合作机制。一是通过举办全球人才大会及高峰论坛，对全球人才合作发展进行各方面探讨。二是推动学历互认、职业资格认证等，服务人才全球化发展。三是通过服务机制的建设，尤其是信息的收集和共享，实现对各国以及地区的人才政策和人才发展状况进行评估和指导，推动人才的有序流动。

平台打造。一是信息平台，发挥官方网站和媒体平台作用，收集人才供需信息，发布相关重要指导意见。二是学术平台，发布世界人才年度发展报告和相关行业数据报告。三是数据平台，建立世界人才资源、统计及服务评价等数据库。四是活动平台，以人才为纽带，定期或不定期地举办年会、论坛等活动。五是合作平台，加强会员之间、城市之间、国家之间关于人才发展与流动的交流与合作。六是培训平台，开展与人才发展相关培训工作，提高人才管理水平，提高政府和机构的人才服务能力。

信息集成。通过大数据的建设，建立全球人才流动的信息资源库，基于信息分析的基础，为全球人才治理的总体思路、方式和方法提供数据支持手段。

（三）国际人才组织联合会的实践

2016 年以来，全球化智库（CCG）围绕国际人才组织联合会倡议开展了深入研究，在北京、香港、华盛顿、巴黎等地组织了多场专家论证，并在巴黎和平论坛、经济合作组织会议等平台进行展示，将这一组织从概念不断推向落地。新冠肺炎疫情发生以来，CCG 举办多场关于全球人才流动的线上研讨会，邀请了数十位世界各地的大学校长、全球劳工组织主席、联合国国际移民组织代表、国际猎头协会主席、人力资源公司代表等，多次研讨全球人才流动的治理与合作。2020 年 11 月，在第三届巴黎和平论坛上，国际人才组织联合会举行了成立仪式。

三、推动全球人才有序流动的相关建议

（一）充分认识人才流动的重要意义

不断创造更加美好的生活是各国人民的共同期待，正因为如此，人才的跨国、跨界流动从未停止。同时，人才流动为各国经济社会发展带来更多元的要素，为各国科技发展注入更多创新基因，各国对优秀移民人才和国际学生的竞争也越来越激烈。以往研究和社会各界更多强调人才流动对于经济社会、创新创业的贡献。当前，新冠肺炎疫情叠加乌克兰危机，多重国际局势不断演变，各种脱钩论调大行其道。即使国际环境如此复杂，也没有挡住人才流动的步伐。因此，在当前的国际形势下，促进人才流动，尤其是移民人才、国际学生的持续流动，多渠道多方式恢复国际人才交流合作渠道，对于减少误解、推动民心相通、扩大合作共识、促进高质量发展意义重大。

（二）推动高水平开放促进人才流动

百年未有之大变局之下，开放是时代的主题。人作为开放的重要主体，其自由全面发展，离不开更开放的世界。开放增强了综合实力，越开放，综合实力越强，经济韧性越足。开放是破除流动壁垒、减少误解的良药，是促进共同繁荣必由之路。中国一直实行积极主动的开放战略，开放的大门越开越大。全面高水平对外开放，将推动人才流动更加自由和便利。以更开放的心态，持续深化人才流动开放制度，促进更深层次的交流，推动更大范围的互信，是全球人才有序流动的根本。

（三）拓展进博会的人才交流对话平台

中国国际进口博览会（进博会）传承了中国开放之思想，激发了国际自由贸易新动能，探索了中国对外开放的新路径，也表明中国开放之大门越开越大。进博会不仅是货物、商品进出口流动的全球开放合作平台，也可成为全球人才流动合作公共平台。目前进博会的国际公共产品属性不断增强，已经逐步形成国际采

购、投资促进、人文交流、开放合作四大平台，不仅是国际展台，更是文化交融的世界平台，是拓展国际合作朋友圈、促进人才交流的开放平台。虹桥论坛设立以来，发出了多边合作声音，已成为人才思想碰撞、凝聚共识的国际高端平台。未来，可以拓展虹桥论坛功能，通过全球人才流动趋势与发展论坛，建立全球人才合作对话机制，促进国际人才交流，推动共商共建共享，促进达成人才发展与交流的全球共识，提升人才流动的公平性、协同性、包容性。

（四）人才流动治理平台多元化和数字化

从人才区域流动来看，未来全球人才流动格局可能会由主要流向发达国家转向更多元的流向，比如流向新兴国家，以及在南北国家之间流动。从领域流动来看，数字经济的发展，推动工作模式变化，人才数字化转型加速，人才跨领域流动加速。人才跨区域流动涉及多数国家，其全球治理必须反映多数国家的意愿和利益；而人才跨领域流动，也必然带动人才治理方式的变革，因此人才流动治理的方式也应随之创新。首先，全球人才流动涉及不同国家、不同领域、不同个人的方方面面，其治理平台应注重公平，参与主体应更多元化。其次，规则引领作用更突出，缺乏规则将导致无序竞争，从而加剧人才流动带来的不平等。其三，治理手段应更加数字化。例如，各国可以通过推动数字连接以及公共服务的数字化，促进国际人才融入本国环境，提高吸引国际人才的竞争力。又如，随着数字游民的增加，未来足不出户，就可以实现跨境流动，需要考虑数字签证等工具以保障其有序流动等。

附件 1 国家人才竞争力评价相关理论及评价体系构建方法

一、国家竞争力理论与评价研究综述[①]

竞争力是一个非常复杂的社会经济现象。对于竞争力，我们可以以不同的假设条件为前提，从不同层面、不同视角开展研究。经济学、管理学、人才学等学科及其分支学科都可以开展竞争力相关研究。由于前提假设和分析工具不同，所关注的竞争力要素有所区别，因而形成了竞争力研究的不同学派。

（一）国家竞争力理论

1. 国际竞争力理论

美国哈佛大学商学院迈克尔·波特（Michael E.Porter）教授在《国家竞争优势》一书中将其国内竞争优势理论应用于国际竞争，提出了著名的“国家竞争优势模型”。波特所指的国家竞争优势就是企业、行业的竞争优势。他认为，国家在国际市场中具有的竞争优势来源于该国的主导产业具有竞争优势，而主导产业的竞争优势源自企业的竞争力。企业优势取决于国内经济环境，其中最重要的因素是要素条件、需求因素、相关和辅助产业和企业战略、组织结构和企业竞争状况等。

2. 国家竞争力的比较评价

从国际角度来比较评价国家的竞争力，世界上广为接受的指标体系和核算方法是瑞士洛桑国际管理发展学院（IMD）提出的《世界竞争力年度报告》（IMD World Competitiveness Yearbook，WCY）和世界经济论坛（WEF）提出的《全球竞争力报告》（The Global Competitiveness Report)。

《世界竞争力年度报告》是瑞士洛桑国际管理发展学院（International Institute

①本部分内容部分摘自：桂昭明，王辉耀.中国区域人才竞争力报告 No.1[M]. 社会科学文献出版社，2013，pp46-49.

for Management Development，简称 IMD）发布的国家经济竞争力年度研究报告，自 1989 年起每年发表一期。报告涵盖 64 个经济体，根据可比、可用国际统计数据及其与当地合作伙伴机构的合作选择指标。《世界竞争力年度报告》认为，国家之间的竞争体现在能否为企业营造有利于不断提高竞争力的环境，包括有效的结构、体制和政策等。因此，国家竞争力和企业竞争力是两个互相依存的概念，国家（或地区）的国际竞争力就是其帮助企业保持竞争力的能力，这为进行国家竞争力评价打下理论基础。《世界竞争力年度报告》认为国际竞争力的发展主要取决于一些重要因素，如经济发展、政府效率、企业效率和基础设施等。报告基于 333 项竞争力标准对国家竞争力进行排名，这些标准是利用经济文献、国际、国家和地区资源以及商业界、政府机构和学术界的反馈进行综合研究的结果。随着新理论、研究和数据的出现以及全球经济的发展，相关标准会定期进行修订和更新。①

《全球竞争力报告》是由世界经济论坛发布的关于国家经济发展与政策评价的研究报告。自 2004 年以来，该报告依据最新理论和实证研究，根据全球竞争力指数对世界各国进行排名。该报告对 141 个国家和地区的主要竞争力指标进行了评比和分析。它由 110 多个变量组成，其中三分之二来自调查，三分之一来自联合国等公开来源。这些变量被组织成十二个支柱（机构、适当的基础设施、稳定的宏观经济框架、良好的健康和初等教育、高等教育和培训、高效的商品市场、高效的劳动力市场、发达的金融市场、利用现有技术的能力、国内国际市场规模、使用最复杂的生产工艺生产新的和不同的商品、创新），每个支柱代表一个被认为是竞争力的重要决定因素的领域。②

（二）竞争力评价研究综述

对竞争力的评价方法有多种多样。按照评价指标的多少，竞争力评价方法可以分为单项指标评价法和综合指标体系评价法。鉴于竞争力的复杂性，单个指标

① IMD. World Competitiveness Ranking. [2022-09-21]. https://www.imd.org/centers/world-competitiveness-center/rankings/world-competitiveness/.
②The World Economic Forum. Global Competitiveness Report. [2022-09-21]. https://www.weforum.org/reports/how-to-end-a-decade-of-lost-productivity-growth.

无法反映区域竞争力的情况，因此通常是根据综合指标体系进行评价。比较常见的评价方法有综合指数法、聚类分析、因子分析、层次分析法等。

根据竞争力评价方法的属性，又可将竞争力评价方法分为四大类:定性评价方法、分类评价方法、排序评价方法和操作型评价方法。

1. 定性评价方法

定性评价方法有因素分析法及内涵解析法等几种。因素分析法一般采取“由表及里”的因素分析方式，从最表面、最容易感知的属性入手，逐步深入到更为内在的属性和因素展开分析。内涵解析法将定性分析和定量分析相结合，重点研究影响区域竞争力的内在因素，对于一些难以直接量化的因素，可以采取专家意见或者问卷调查的方式进行分析判断。

2. 分类评价方法

分类评价方法有模糊综合评价法、聚类分析方法、物元分析方法等几种。模糊综合评判法既有严格的定量刻画，也有对难以定量分析的模糊现象进行的定性描述，定性描述和定量分析相结合是比较适合区域竞争力评价的评价方法。聚类分析方法是研究分类的一种方法，是当代分类学与多元分析的结合。在区域竞争力评价分析中，可以对不同区域的竞争力状况进行分类，判断区域竞争力的相对强弱。物元分析方法把物理分析理论运用于系统的研究，建立系统物元、相容系统和不相容系统等概念，并提出了化不相容系统为相容系统的有关方法，通过系统物元变换，可以处理不相容系统中的问题。

3. 排序评价方法

排序评价方法有综合指数评价法、主成分分析、因子分析、集对分析法、层次分析法、功效系数法等几种。

综合指数评价法是一种综合指标体系评价法。该方法通过选取一定的定性指标以及定量指标，经过无量纲化处理，达到统一量化比较的目的，从而得出具体的综合评价指数。

主成分分析法就是找到几个彼此不相关的综合指标，并且尽可能多地反映原来指标所提供的信息量。

因子分析是假设大量观测变量背后潜藏着少数几个维度，称为“公因子”，

每个观测变量总变异中的绝大部分都能够被这几个公因子所解释，不能为公因子解释的部分称为该变量的“特殊因子”。因此，一般情况下，所有观测变量都可以表示为公因子和特殊因子的一个线性组合，称为因子分析的线性模型。

集对分析是一种全新的系统分析方法，核心思想是把确定不确定视作一个系统。在这个系统中，确定性与不确定性互相转化，互相影响，互相制约，并在一定条件下互相转化，用一个能充分体现其思想的确定不确定式子来统一地描述各种不确定性，从而把对不确定性的辩证认识转换成一个具体的数学工具。

层次分析法是用于解决多层次多准则决策问题的一种实用方法，它提供了一种客观的数学方法，来处理个人或者群组决策中难以避免的主观以及个人偏好的影响。

功效系数法是根据多目标规划原理，对每一个指标分别确定满意值和不允许值，然后以不允许值为下限，通过功效函数计算每个指标的功效系数，最后加权计算综合指数的一种评价方法。

4. 操作型评价方法

标杆测定方法不但能够评价和判断竞争力的高低，找出竞争力高低的主要原因，而且其研究结果还能指示提高竞争力的路径。标杆测定法评价竞争力的步骤为:第一，确定标杆测定的主题、对象和内容。第二，组成工作小组并确定工作计划。第三，收集资料，开展调查。第四，分析比较，找出差距，确定最佳方法，明确改进方向，制定实施方案。第五，组织实施，并将实施结果与最佳做法进行比较，在比较的基础上进行修改完善，努力达到最佳实践水平，超过标杆对象。

（三）人才竞争力的内涵及评价

人才竞争力是通过比较而得的相对概念，是一个综合性概念；同时它也是一个动态的概念，随着经济社会环境的发展变化而变化。另外，人才竞争力也是一个差别性概念，不同研究对象——不同国家、同国家不同区域、同区域不同产业（行业）、同产业（行业）不同企业（组织）的竞争力也是不同的。人才竞争力主要由三个部分组成：（1）现实的人才竞争能力；（2）潜在的并且未来可能拥有的人才竞争能力；（3）把潜在的人才竞争能力转化为现实竞争优势的能力。人才

竞争力是蕴涵于内部的、与竞争对手相比较而存在的、受外部环境影响的、融合各种能力的一种综合能力。

人才竞争力评价是人才竞争力研究中的一个重要课题，不仅要用经济学和管理学的方法来探索竞争力的性质、来源、基本因素及其相互关系等问题，而且还要用统计学的方法以数量化的指标把竞争力的状况显示出来。

人才竞争力的指标可以分为两大类：效能指标和归因指标。前者反映的是竞争的结果，也即竞争力的最终表现；后者反映的是形成竞争力的原因或者决定因素。人才竞争力评价是运用经济学、管理学和统计学的相关方法，相对地反映出国家、区域竞争力的真实状况，并做出切合实际的评价和分析。

当前知名的人才竞争力指数有全球人才竞争力指数（Global Talent Competitiveness Index，GTCI）、世界人才排行榜（World Talent Ranking）等，这些指数从不同角度对不同国家的人才竞争力进行研究。

1．全球人才竞争力指数

全球人才竞争力指数于 2013 年首次推出，是欧洲工商管理学院（INSEAD）与其合作伙伴共同发布的一份年度基准报告，通过衡量一个国家在人才培养、吸引、留存等方面的表现，对国家和城市进行测评和排名，从而评估全球各国的人才竞争力，并为各国的政府、企业提供提升人才竞争力的建议。

GTCI 是一个综合指数，采用投入——产出模型，由六类指标（投入端四个，产出端两个）组成。人才竞争力投入分项指数由四项指标组成，描述了一个国家可以用来培养人才竞争力的政策、资源和努力。人才赋能指标反映了监管、市场和商业环境为人才创造有利环境从而实现发展和繁荣的程度。人才吸引指标、人才培养指标、人才保留指标分别关注国家采取哪些措施吸引、培养和留住人才。投入分项指数是以上四大指标所获得分数的算术平均数。产出指标主要通过劳动和技术技能和全球知识技能两个指标衡量。劳动和技术技能对应的是中级技能人才，指通过职业或者专业培训和经验获得技术或专业基础的人才。劳动和技术技能人才的经济影响，主要通过劳动生产率、工资和生产力之间的关系以及依赖这种技能的中等价值出口产品进行衡量。全球知识技能对应的是高级技能人才，主要指需要创造力和解决问题能力的专业性、管理性或领导性的知识型工作者。高

级技能人才的经济影响主要通过创新和创业指标以及依赖这类素质的高价值出口产品进行评估。

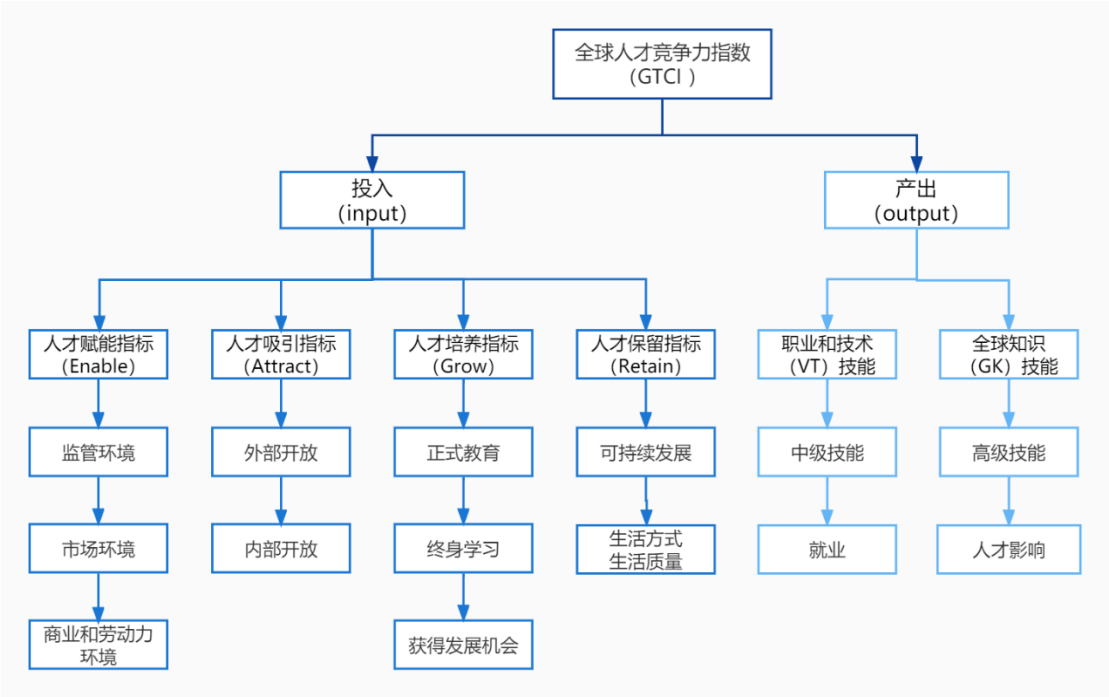

图 5.1　2021GTCI 结构模型图

资料来源：INSEAD. THE GLOBAL TALENT COMPETITIVENESS INDEX 2021. https://www.insead.edu/sites/default/files/assets/dept/fr/gtci/GTCI-2021-Report.pdf.

GTCI 的指标体系一直不断改进，如 2021 年的模型在 2020 年的模型上删减了六个指标，并新增加了劳工权利、正规与非正规学习、青年融入社会以及技能匹配四个指标，指标数量调整为 68 个，以期让指数更加稳健。[①]

2. 世界人才排行榜

瑞士洛桑国际管理发展学院发布的《世界人才排行榜》，对世界 64 个经济体在培育当地人力资源及吸引优秀人才方面进行了评估，各项统计指标数据主要由联合国教科文组织、经合组织以及参评国家和地区的合作机构等提供。

《世界人才排行榜》的评估主要由 3 大要素决定：一是对人才的投资与培养，反映政府在教育方面的投资和教育制度的完善水平；二是对人才的吸引力，即反映留住本地人才和吸引海外人才的能力；三是人才储备程度，反映现有人才满足

① INSEAD Research & Learning Hub. THE GLOBAL TALENT COMPETITIVENESS INDEX 2021. https://www.insead.edu/sites/default/files/assets/dept/fr/gtci/GTCI-2021-Report.pdf.

市场需求的能力。IMD 世界人才排行榜的数据标准统一使用《IMD 世界竞争力年度报告》中采用的 STD（标准化分值）方法进行规范，汇集各项因素最终构建整体人才排名，将各因素和总体排名分别以 0~100 的数值呈现出来。

表 5.1　世界人才排行榜评估指标构成

要素	指标
对人才的投资与培养	教育总公共支出
	教育总公共支出/学生数
	学生对教师比率（小学）
	学生对教师比率（中学）
	学徒制度
	员工培训
	女性劳动力
	卫生基础设施
对人才的吸引力	生活成本
	人才吸引及留存
	劳动者积极性
	人才外流
	生活质量
	外来技术人员
	服务业薪酬
	管理业薪酬
	实际个人所得税率
	司法公正
	接触大气颗粒污染物
人才储备程度	劳动力增长
	熟练工人
	金融技工
	国际经验
	优秀高级管理人员
	小学和中学教育
	毕业生在自然科学的比例
	大学教育
	管理教育
	语言技能
	国内学生流动性
	教育评估——国际学生评估项目（PISA）

资料来源：IMD. World Talent Ranking. https://www.imd.org/centers/world-competitiveness-center/rankings/world-talent-competitiveness/.

二、国家人才竞争力评价体系构建方法

（一）评价体系构建的指导思想

一个国家的经济和科技活动是否活跃主要取决于其是否善于引进、培育和留住人才，并充分发挥其作用。因此，如何营造出吸引人才、培养人才、留住人才、发挥人才积极性的环境，是需要优先考虑的战略问题。

对于一个国家而言，人才竞争力的基础和最根本的因素是其对人才资源的培育、吸引、争夺、拥有、使用及转化能力。

从事物发展的角度来讲，资源观和环境观的关系是对一个事物发展起作用的“内因”和“外因”之间的关系。

人才流动和人才集聚的规律显示，人才发展中的经济地位、教育平台、科技平台、社会环境、人文传统等因素对人才的流动和集聚影响很大，有时成了决定性的因素。表面上看，人才在不同的国度之间流动，实质上其实是在不同的体制、机制、制度环境和不同的经济、科技、社会、人文环境之间的流动。哪个地方适合人才充分发挥其才智、有利于人才的长足发展，人才就向那个地方集聚。因此，在设置国家人才的外在竞争力指标时，将突出考虑这类指标的重要性（用较高的权重来体现）。

（二）评价体系设计的基本原则

1. 科学性原则

本报告在构建“人才竞争力评价体系”时，运用当前人才发展研究的最新成果，充分结合已有的评价体系，设置与人才特征密切相关的指标，使得评价体系科学地、完整地反映人才竞争力的本质。

2. 可量化原则

尽管体制、机制、制度环境等因素直接影响国家人才竞争力，但此类因素的评价具有很大的主观性，受到评价人的主观意识、认知能力乃至个性、好恶的左右，难以得到客观、公正的评价。因此，本报告在评价体系设计中，一概不采用

通过问卷调查等方法得到的定性评价结果，所有指标均为世界银行等机构发布的统计数据以及根据这些数据计算得到的定量结果。

3. 可比较原则

鉴于人才竞争力是一个差别性概念，本报告将对国家人才竞争力的不同指标进行指数化处理，使得研究的对象具有可比性。

（三）评价体系的结构

根据以上原则，设计出专门用于国家人才竞争力的评价体系结构。在此评价体系中，我们将人才竞争力分为体现人才竞争力的内在要素、影响人才竞争力的外在要素以及表征人才竞争力现状的效能水平要素等。

其中，国家人才内在竞争力要素反映了国家人才创新创业、作用发挥的核心竞争力。内在竞争力要素包括人才数量指标、人才质量指标等方面，这是区域潜在的、未来可能拥有的人才竞争能力。影响国家人才内在竞争力作用发挥的“外在竞争力要素”是外部因素，反映了国家人才创新创业的外部影响（工作、生活条件、人居环境等）因素，对核心竞争力起到正向（激扬、促进）或反向（压抑、制约）作用。外在竞争力要素包括人才投入指标、人才生活工作环境指标等方面，这是国家将潜在的人才竞争能力转化为现实以获得竞争优势的能力。表征人才竞争力现状的是人才产出水平，反映了国家所拥有的人才对其国民经济和社会发展的贡献和促进作用，这是国家现实的人才竞争能力。

（四）国家人才竞争力评价模型

1. 模型的选择

根据国家人才竞争力评价体系的结构，可以构建一般意义上的国家人才竞争力评价模型，即：

$$J_i = \sum B_k * Q_k$$

其中，J_i为不同国家的人才竞争力，B_k为一、二层级等各项指标（指数），Q_k为分别对应一、二级指标（指数）的权重。k 分别为第一、二层级的指标数。

本报告第一层级指标数 k 为 5（与人才竞争力评价体系的结构对应）；而第二层级的指标数则根据不同一级指标的不同特征确定。

2. 权重的确定

利用构建的评价指标体系对国家人才竞争力进行评价时，各指标的作用各不相同。为了体现不同指标在评价指标体系中的重要程度，要给每个指标赋予不同的权重系数。指标的权重是各指标相对重要程度的一种主观与客观度量的反映，合理的权重系数对国家人才竞争力评价具有重要的意义。

目前，评价指标权重的确定方法主要采用主客观相结合的专家集体决策方法，如德尔菲法、层次分析法、灰色关联分析法等。

层次分析法（AHP）是美国学者 T.L.Satty 等人在 20 世纪 70 年代提出的一种定性分析与定量分析相结合的多准则决策方法。该方法对各指标的重要程度的分析逻辑严密，且进行周密的数学处理，可信度较大，体现了主观分析与客观计算相结合的特点，因而被广泛应用到指标权重的确定上。

本研究报告在明确指标体系层级结构后，即采用层次分析法对区域人才竞争力评价指标体系中的指数权重加以确定。本研究组共邀请 9 位专家分别对一、二层次的指标（指数）进行两两比较与判断，并采用 1-9 的比例标度，将专家的定性判断定量化，由此构造出若干个两两比较判断矩阵。再对这些比较判断矩阵进行层次单排序，计算各自的权重系数（精确到小数点后两位数），并对之进行一致性检验。由于计算过程繁琐，占用篇幅过多，本研究报告计算权重的过程均不一一列出。

3. 数据处理的原则、方法

由于人才竞争力各项指标数据的量纲不同，因此，需要对这些指标进行综合集成，并且对指标数据进行无量纲处理。本研究报告主要采取指数化方法。

指数法的计算公式为：

$$X_i = \frac{x_i}{x_{0i}}$$

X_i 为指数，x_i 为原始值，x_{0i} 为最大值。

附件 2 关于全球化智库（CCG）及课题组

全球化智库介绍

全球化智库（Center for China and Globalization，CCG）是中国领先的国际化社会智库，成立于 2008 年，是唯一获得联合国特别咨商地位的中国智库，也是首个进入世界百强的中国社会智库，在国内外多个权威智库排行榜单均被评为中国社会智库第一。

CCG 被人社部授予博士后科研工作站，并拥有独立招收博士后资质，是中联部“一带一路”智库联盟理事单位，中央人才工作协调小组全国人才理论研究基地，人社部中国人才研究会国际人才专业委员会所在地，财政部“美国研究智库联盟”创始理事单位，中国公共关系协会副会长单位，是“国际青年领袖对话（GYLD）”项目的秘书处所在地。2021 年，CCG 发起的“国际青年领袖对话（GYLD）”项目获得了习近平主席回信。

CCG 总部位于北京，在国内外有多个分支机构和海外代表，拥有全职智库研究和专业人员百余人。CCG 秉承“国际化、影响力、建设性”的专业定位，坚持“以全球视野为中国建言，以中国智慧为全球献策”，致力于全球化、全球治理、国际关系、国际经贸与投资、国际人才与企业全球化、一带一路、华人华侨及智库发展等领域的深入研究。

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本报告得到虹桥国际经济论坛秘书处及相关领域专家学者的支持，在此特别感谢。由于撰写和编辑匆促，报告中难免出现纰漏。欢迎社会各界批评指正，以便我们在未来的研究工作中获得进益。

2022 GLOBAL TALENT FLOW: TRENDS AND PROSPECTS

ENGLISH VERSION

November 2022

CCG 全球化智库
CENTER FOR CHINA & GLOBALIZATION

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Introduction

As highlighted in the work report presented at the 20th National Congress of the Communist Party of China, China be more proactive in opening up to achieve a larger-scale, wider-ranging, and deeper form of opening to the outside world; efforts should be made to create products and gather outstanding and innovative talent from all over the world, improve the strategic distribution of talent, and focus on creating a comparative advantage in the international competition for talent. The importance China attaches to openness and international competitiveness of talent has reached an unprecedented level, and the global flow of talent is closely related to this.

The world is undergoing profound changes unseen in a century. The interactions between great powers and the international order are in flux with uncertainties in the world's economic, scientific, technological, social, cultural, political, and security landscape. Although affected by multiple situations, such as the COVID-19 pandemic and the Ukraine crisis, the global flow of talent continues. According to the data and predictions released by the United Nations Educational, Scientific and Cultural Organization (UNESCO), The number of internationally mobile students in higher education has grown dramatically from 0.3 million in 1963 to 2 million in 2000 and up to 6 million in 2019.[①] And nearly a quarter (23.5%) of all scientific publications have international co-authors, up from 18.6% in 2011.[②] Talent mobility and collaboration have become the most resilient aspects of globalization and are significant promoters of the globalization process.

Talent flow is driven by various factors, including economic development, personal development, national policies, and the growth of multinational corporations. The constant pursuit of a better life, the introduction of measures to attract international talent by major economies in response to aging populations and declining birth rates, and global expansion, as well as consolidation of human capital in multinational companies, have all contributed to the flow of talent across regions. Big data and

① UNESCO. "Future of international mobility will combine physical and digital experiences to reach a wider range of students". (2022-02-25) [2022-10-25]. https://www.iesalc.unesco.org/en/2022/02/25/future-of-international-mobility-will-combine-physical-and-digital-experiences-to-reach-a-wider-range-of-students/.
② UNESCO. UNESCO SCIENCE REPORT. https://unesdoc.unesco.org/ark:/48223/pf0000377250/PDF/377250eng.pdf.multi.

artificial intelligence have become the front runners in the age of Industry 4.0. Increasing demand for high-tech talent in the global labor market has also intensified talent flow in related fields.

The COVID-19 pandemic has limited offline talent flows while facilitating online talent exchange. In the short term, the cross-border flow of talent has been restricted to prevent the spread of the pandemic. In the long term, online talent exchange will continue to grow rapidly with the development of digital technologies and the rise of online learning, shared laboratories, webinars, and online conferences, which have increased the share of knowledge online, making remote learning, research, and exchange possible and gradually developing into normalcy, has made it easier for international talent to communicate and collaborate without the limits of geographical borders.

Talent flow can improve both the quantity and quality of the population, alleviate local labor market shortages, promote urbanization, raise social diversity, boost the development of science, technology, and innovative industries, and enhance economic growth potential. Breakthroughs and innovation often come from teams of talented individuals from multicultural backgrounds. Venkatraman Ramakrishnan, Nobel Laureate and President of the United Kingdom's Royal Society, once suggested that, from the perspective of scientific research, scientific progress generally benefits from global talent migration. The response to this trend should not limit people's flow but foster a research environment in which people are willing to work in different places.[①]

The primacy of talent in a country's development and the considerable benefit from talent inflow motivate countries to introduce targeted policies to attain talent worldwide. For instance, the US reformed its H-1B visa lottery system and increased its attractiveness to highly skilled and high-income STEM labor forces; China is striving to form a comparative advantage in international competition for talent; Japan added the Highly Skilled Professionals visa and adjusted its point-based system, achieving its goal of introducing 20,000 highly skilled professionals by the end of 2022 as proposed in its 2017 Growth Strategies ahead of time; the UK has reformed its immigration policy to attract those holding exceptional skills and higher degrees; while the EU eased restrictions on its migration policies on non-EU researchers and students and introduced residence permit for those seeking jobs and entrepreneurship in the

① Tian, Tian. "The President of United Kingdom Royal Society: Scientific Progress Benefits from Global Talent Migration," Science & Technology Review. http://blog.sciencenet.cn/blog-336909-1027272.html.

region in a hope to attract more highly skilled and innovative professionals.

Despite the fierce competition in attracting talent and the widespread sensation of decoupling, opening up will remain a central theme of this era, breaking down walls in communication and decreasing misunderstandings. Globalization is inevitable in the areas of goods, capital, and talent. Admittedly, talent flows face short-term challenges caused by global events and minor policy tweaks. However, the fields in which communication and cooperation in talent will only increase. As data on global migration shows, the total number of international migrants reached nearly 281 million, accounting for about 3.6% of the world's population, up from 173 million in 2000 and 222 million in 2010, of which about two-thirds were immigrant workers. China and the US have the largest scale of talent cooperation, mainly through bilateral research programs, through which two countries produced over 300,000 co-authored works and publications from 2017 to 2021.[①] From 2015 to 2020, the number of top-tier journal articles co-authored by researchers in China and the US exceeded that of other countries.[②] This exemplifies how scientists created a global collaborative network and set an example for more effective and broader cooperation of international talent against the pandemic as well as geopolitical conflicts.

Facing a complicated international environment, talent mobility is essential in rebuilding trust in the international community. It lubricates and facilitates cultural communication, deepens opening up, promotes the orderly flow of talent, cultivates empathy, and helps alleviate misunderstandings between countries.

China has maintained its open and welcoming attitude toward talent. Since 2012, the country has been highlighting policies for talent development. It has continued to build a more open system for the flow of talent, transitioning from talent output to a bidirectional flow model. At the Party Central Committee conference on talent-related work in September 2021, it stressed the importance of developing a quality workforce in the coming years and accelerating the work to make China a major global center for talent and innovation. In recent years, many Chinese students and workers with experience abroad have returned to seek job opportunities, leading to an increased trend of talent return (bilateral) and talent circulation (multilateral). At present, the total number of Chinese citizens working abroad has reached 220 million, and its global

① APRU. For the Global Common Good: APRU and the China-US Research Landscape. https://www.apru.org/wp-content/uploads/2022/07/For-the-Global-Common-Good-June-2022-Final-1.pdf.
② Crow, James Mitchell. "US-China partnerships bring strength in numbers to big science projects." Nature 603.7900 (2022): 6-8.

ranking in the Innovation Index has risen from 34th in 2012 to 12th in 2021. In 2021, the number of overseas students returning to China exceeded 1 million for the first time. Meanwhile, a total of 1.18 million foreigners were issued work permits to work in China and the number of international patent applications from China reached 69,500 in 2021, ranking first in the list of applications for the third consecutive year.[①] The China International Import Expo (CIIE), known for its openness, fully demonstrates the role of the four major platforms of international procurement, investment promotion, cultural exchanges, and open cooperation, allowing the world to see an increasingly open China.

This report is committed to promoting openness and the free flow of human resources while striving to build a straightforward, objective evaluation system to analyze the competitiveness of each country in terms of talent, providing an overview of the current status of global talent flows and predicting future trends. It also hopes to guide those involved in policymaking on talent development and migration. More broadly, we hope to leverage this report to foster a global dialogue on international talent exchange and serve as a global public good to serve international talent governance. Enabling global talent flows can effectively create a fairer, more cooperative, and inclusive international environment where we can reach a consensus on talent development and exchange and promote a shared future with win-win results.

① CCTV. “China ranks first in PCT international patent applications for three consecutive years”. (2022-02-11) [2022-10-22]. http://www.gov.cn/shuju/2022-02/11/content_5673183.htm.

Chapter 1: The Talent Competitiveness Index for Major Countries

This part attempts to create a Talent Competitiveness Evaluation Index for Major Countries that is simple, predictable, and internationally transferrable in order to evaluate the level of talent competitiveness in major countries and further analyze the strengths and weaknesses of China's talent competitiveness.

Building a Talent Competitiveness Evaluation Index for Major Countries

What Talent Competitiveness Means

Talent competitiveness evaluates a country's ability in attracting, cultivating, sustaining, and utilizing talent in the context of global socio-economic development and the subsequent talent flows that follow this phenomenon.

38 countries are covered by this evaluation, including China, 8 major industrialized countries (G8), and 19 countries in economic cooperation organizations (mainly G20 countries, but the EU is excluded from this selection as its member countries partly overlap with countries in the G8 and G20), countries with a population of more than 10 million and a GDP per capita of more than $10,000 (some G20 countries have a GDP per capita of less than $10,000 are also included), and developed countries with a population of 5 million to 10 million and with a GDP per capita of $490,000 (high-income countries). As the countries covered by this evaluation account for 63.1% of the world's population and 88.9% of the world's total GDP, we claim that the evaluation gives a realistic overview of global talent competitiveness.

Talent Competitiveness Evaluation Index for Major Countries

The Talent Competitiveness Evaluation Index for Major Countries uses data from World Bank's WDI database (2021), the World Intellectual Property Organization WIPO database (2021), the ILO database of the United Nations International Labor Organization (2021), the Fortune Magazine 2020 list of the top 500 companies in the world, and the 2020 QS World University Rankings Top 1000 list. As the index measures the talent competitiveness of countries in 2020, we only crop data that reflect the year 2020 regardless of when the data is published. This explains why we only use data from 2020 in the last two sources (Fortune Magazine and QS World University Rankings) and 2021 data for all others. Some data reflecting situations in individual countries are missing from these databases and will be supplemented by data from the statistical agencies of each government.

The Talent Competitiveness Evaluation Index for Major Countries covers five primary indicators of talent (scale, quality, environment, input, and performance) and 14 secondary indicators.

Scale indicators measure the absolute gap in the number of high-level talent resources in different countries, reflecting the absolute number of different types of high-level talent resources and reflecting the scale effect of talent. Talent scale indicators include two secondary indicators, namely, "Number of the working-age people with tertiary education" and "Number of researchers in R&D".

Quality indicators measure the relative quantity difference of high-level talent resources in different countries. Talent quality features two secondary indicators, namely, "Number of people with tertiary education per 10,000 working-age people " and "Number of researchers in R&D per 10,000 positions".

Environment indicators measure the strengths and weaknesses of talent resources in different countries in terms of living, working, and learning environments, and serve as the main indicator of environmental gaps. Talent environment indicators include four secondary indicators, namely, "PM2.5 mean annual exposure (μg/m3)", "Fortune Global 500 (rate)", "QS 100 (rate)" and "CO2 emissions per capita (t/person)".

Input indicators measure the strengths and weaknesses of different countries in terms of talent security and talent potential and are the main indicators of the

momentum of talent competitiveness. Talent investment indicators include three secondary indicators, namely, “Public spending on education as a percentage of GDP”, “Expenditure on R&D as a percentage of GDP” and “Expenditure on current health as a percentage of GDP”. Among them, “Public spending on education as a percentage of GDP” reflects and measures the strength and level of financial expenditure on education in different countries to improve the overall quality of the nation and cultivate potential human resources, indicating the strategic level and policy support of the country in the development of human resources. “Expenditure on R&D as a percentage of GDP” reflects and measures the strength and level of financial R&D expenditure of different countries in encouraging innovation and creativity, demonstrated in the country’s policy support and strategic emphasis in attracting and keeping talent working in science and technology. “Expenditure on current health as a percentage of GDP” reflects the country's total investment in healthcare with the goal of enhancing the physical health of the population and providing good healthcare services and social security for the talent pool.

Performance indicators measure the strengths and weaknesses of different countries in terms of talent use and talent output and are the main indicators of the effectiveness of talent development. Talent performance indicators include three secondary indicators, namely, “Labor productivity (GDP ($)/ Employment)”, “Number of active patents per capita in the labor force (patent/10,000 working-age people)”, “Medium and high-tech manufacturing value added (%manufacturing value added)”. “Labor productivity (GDP ($)/Employment)” reflects the contribution talent made to economic growth in different countries, while “Number of active patents per capita in the labor force (patent/10,000 working-age people)” reflects the contribution made by the talent pool in science and technology innovation as well as the strength and quality of talent innovation in different countries. “Value added of medium and high-tech manufacturing as a percentage of value added of manufacturing (%)" reflects the use of talent resources and the extent of their role. The three secondary indicators directly measure the efficiency in applying talent in different countries, and indirectly measure a country’s policy and environmental effects on talent.

The Talent Competitiveness Evaluation Index for Major Countries uses the Analytic Hierarchy Process (AHP) to determine the weighing of each secondary indicator.

Table 1.1 Design of the talent competitiveness evaluation index for major countries

Primary indicators	Primary indicator weighting	Secondary indicators	Code	Secondary indicator weighting	Data source
Talent Scale	0.16	Number of the working-age people with tertiary education (10,000 people)	GM1	0.07	ILO/WDI
		Number of researchers in R&D (10,000 people)	GM2	0.09	WDI
Talent Quality	0.20	Number of people with tertiary education per 10,000 working-age people (people/10,000 working-age people)	ZL1	0.10	ILO/WDI
		Number of researchers in R&D per 10,000 positions (people/10,000 positions)	ZL2	0.10	WDI
Talent Environment	0.20	PM2.5 mean annual exposure (μg/m3)	HJ1	0.03	WDI
		Fortune Global 500 (rate)	HJ2	0.07	Fortune
		QS 100 (rate)	HJ3	0.06	QS
		CO2 emissions per capita (t/person)	HJ4	0.04	WDI
Talent Input	0.21	Public spending on education as a percentage of GDP (%)	TR1	0.10	WDI
		Expenditure on R&D as a percentage of GDP (%)	TR2	0.06	WDI
		Expenditure on current health as a percentage of GDP (%)	TR3	0.05	WDI
Talent Performance	0.23	Labor productivity (GDP/ Employment)	XN1	0.10	WDI
		Number of active patents per capita in the labor force (patent/10,000 working-age people)	XN2	0.05	WIPO/WDI
		Medium- and high-tech manufacturing value added (% manufacturing value added)	XN3	0.08	WDI

（Continued Table 1.1） Note: “WDI” refers to the World Bank WDI database (2021), “WIPO” refers to the World Intellectual Property Organization database WIPO (2021), “LIO” refers to the United Nations ILO database (2021), “Fortune” refers to the complete list of Fortune Magazine 2020 World 500 companies, and “QS” refers to the 2020 QS World University Rankings Top 1000 list.

Evaluation of Talent Competitiveness for Major Countries

Based on relevant data, we positioned and ranked the 38 countries covered in the report according to their talent competitiveness levels in 2020. We will show results by comparing five aspects of the primary indicators, namely scale, quality, environment, input, and effectiveness.

This index is comparable and shows that the United States takes the lead, followed by South Korea in second place, Denmark in third place, Singapore in fourth place, and Japan in fifth place. The index scores of the UK, Israel, China, and Sweden-which are ranked from sixth to ninth-are all above the benchmark of 45 points. The fact that five of the countries in the top ten on the list are in Asia and the West reveals that Asia is becoming increasingly attractive to talent.

Second tier countries ranked from the 10^{th} to 17^{th} with a score between 40 and 44 include Switzerland, Germany, Finland, Belgium, Ireland, France, Norway, and the Netherlands. Third tier countries ranked from the 18^{th} to 25^{th} with a score between 31 to 39 are Austria, Australia, Canada, Spain, New Zealand, Russia, Portugal, and Italy. Fourth tier countries ranked from the 26^{th} to 33^{rd} with a score between 25 to 30 are Brazil, Saudi Arabia, Greece, Poland, Czech Republic, Malaysia, India, and Argentina. Chile, Mexico, Turkey, South Africa, and Indonesia ranked the 34^{th} to 38^{th} and in the bottom five, with competitiveness indexes between 20 and 25. The second to fourth tiers do not differ much from each other in terms of their index scores. What stands out is that the talent competitiveness index for the US, which ranks first, is 3.5 times that of last-placed Indonesia.

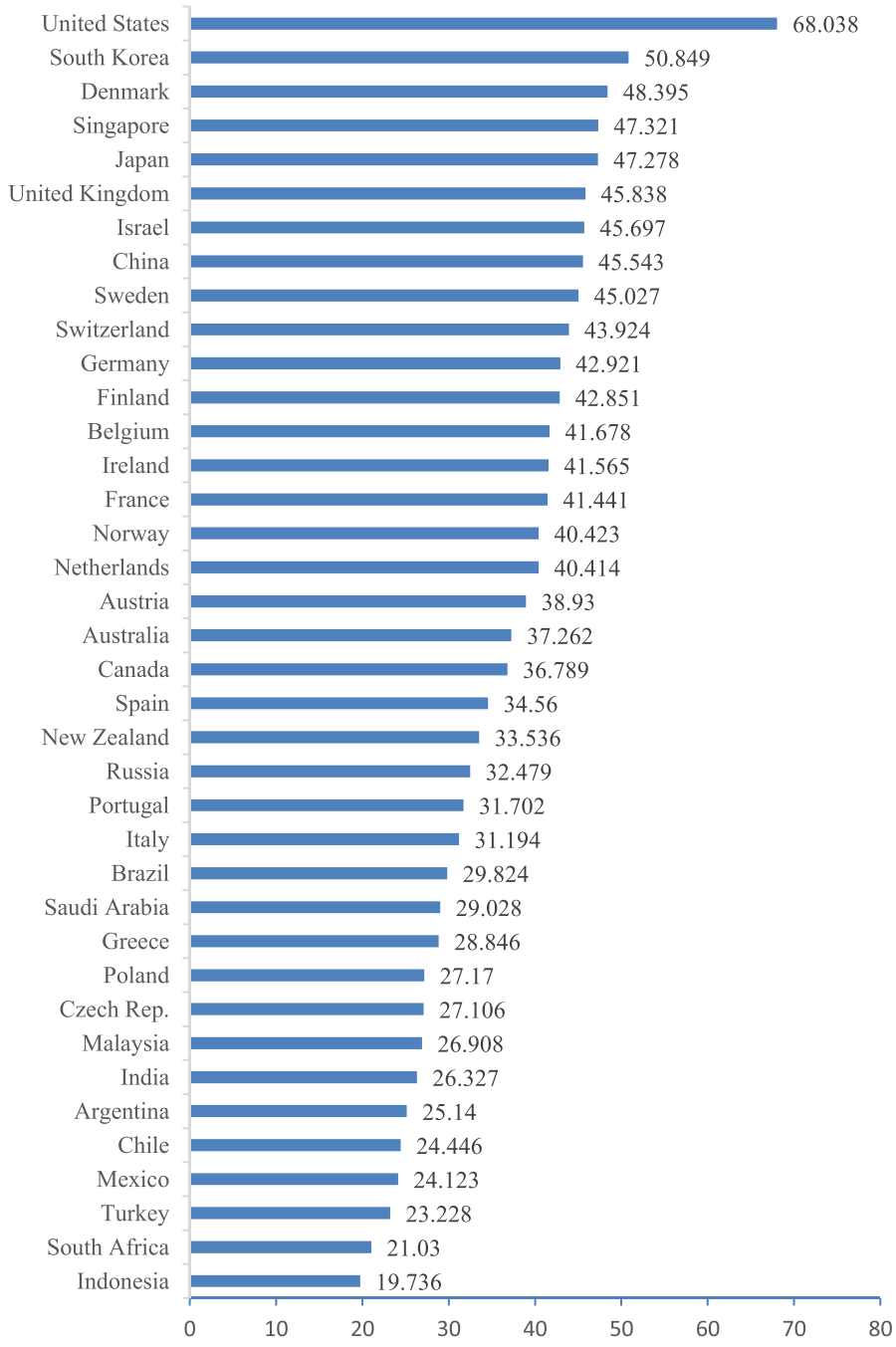

Figure 1.1 Rankings for 38 countries in terms of overall talent competitiveness

In terms of talent scale, China and the United States have a clear competitive edge. When considering the "Number of the working-age people with tertiary education (10,000 people)" and "Number of researchers in R&D (10,000 people)", China and the United States are far ahead of India, Japan, and Russia, which rank third, fourth, and fifth, respectively. In particular, China's talent scale index is more than twice that of the total for the three industrial powers (Germany, the United Kingdom, and France), which

are ranked seventh, eighth, and tenth.

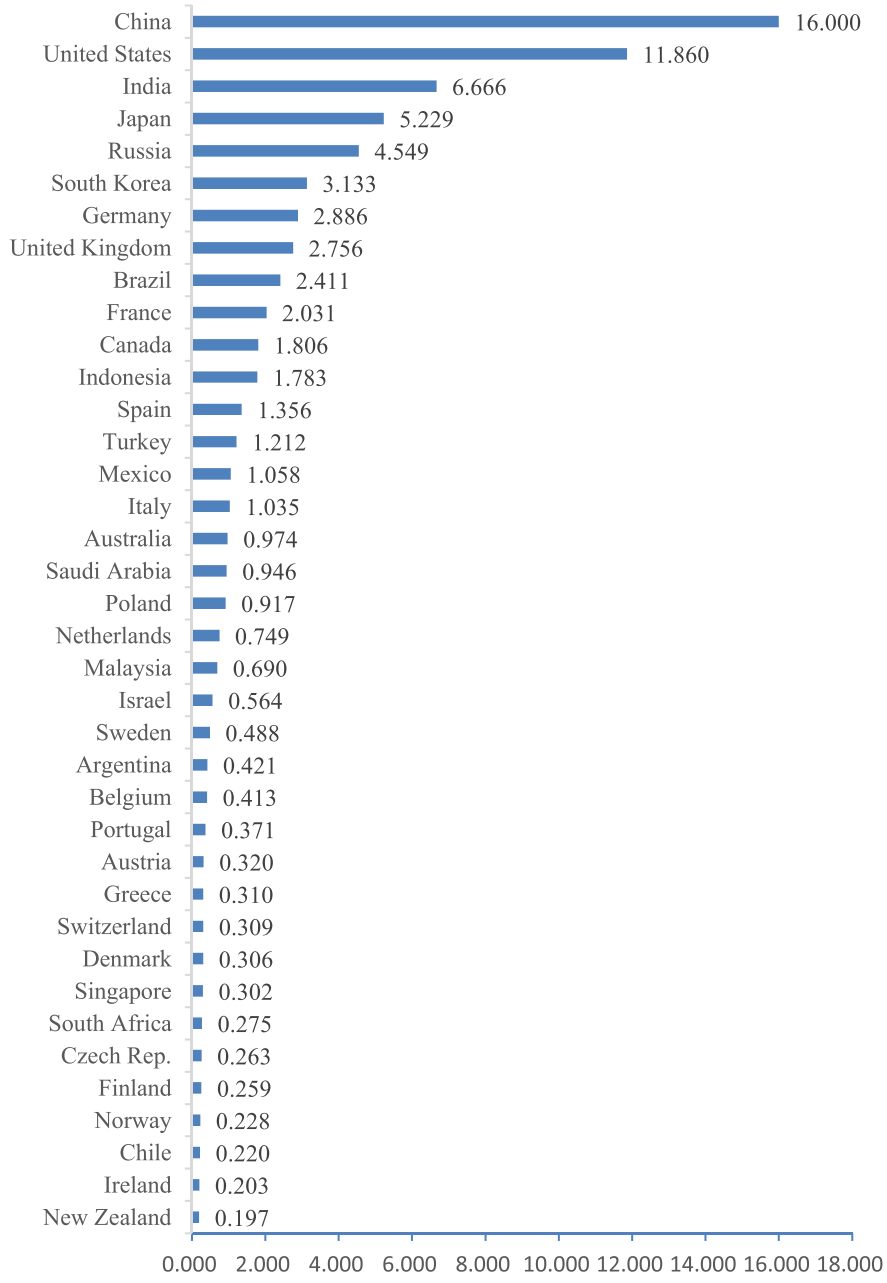

Figure 1.2 Talent scale rankings for 38 countries

Singapore, South Korea, and Israel are the top three Asian countries in terms of talent quality. Singapore ranks first in terms of "Number of people with tertiary education per 10,000 working-age people" and the "Number of researchers in R&D per 10,000 positions", followed by South Korea, and Israel, Canada, Denmark, Ireland, the UK, and Finland. Since this indicator focuses on employment per capita, developing

countries such as India, China, Indonesia, and South Africa, which have larger populations, have a temporary disadvantage in terms of talent quality.

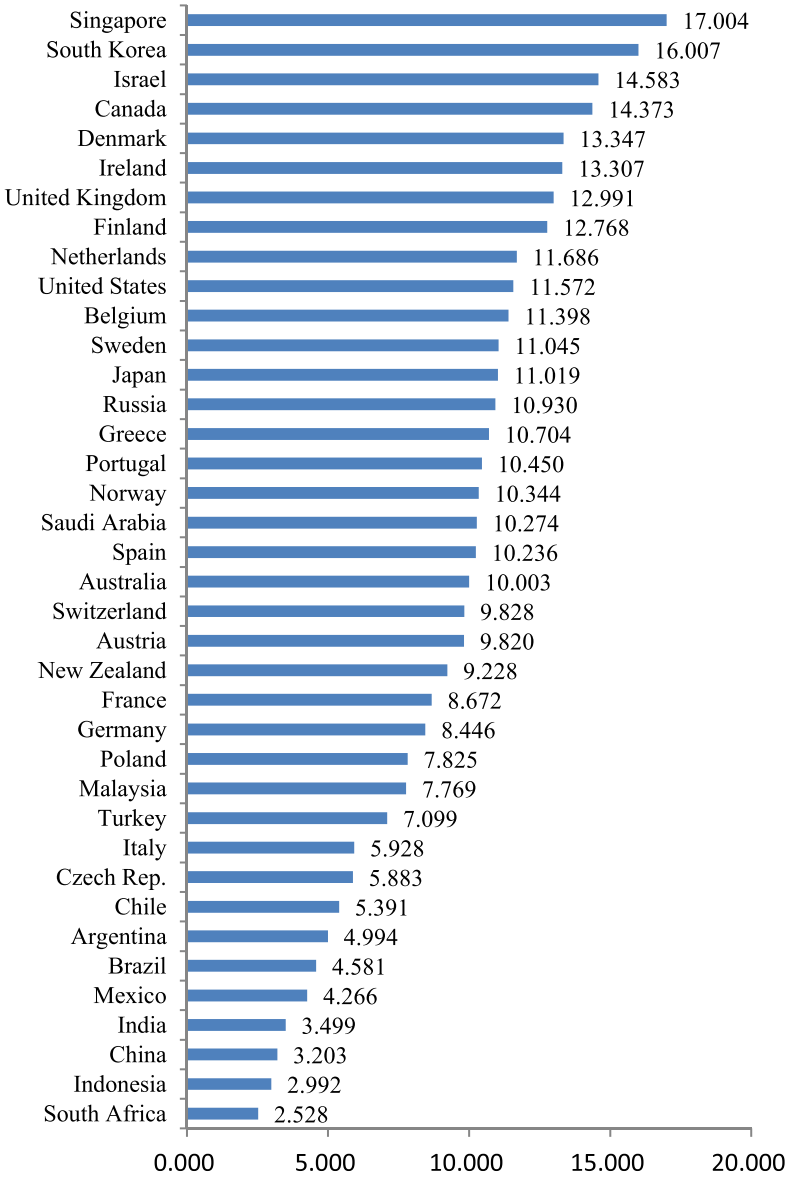

Figure 1.3 Talent quality rankings for 38 countries

In terms of the talent environment, the United States and China have a clear advantage. The US ranks first in "PM2.5 mean annual exposure (μg/m3)", "Fortune Global 500 (rate)", "QS 1,000 (rate)" and "CO2 emissions per capita (t/person)", followed by China. The UK, Japan, France, Germany, Brazil, and Switzerland along with six other countries form the second tier, Sweden, Spain, Indonesia, Italy, Argentina, Mexico, Portugal, Netherlands, Denmark, while nine countries make up the third tier, New Zealand, Chile, Norway, Ireland, Malaysia, Finland, Austria, Greece, Belgium,

Israel, India, Russia, Turkey, South Korea, and 14 other countries are in the fourth tier. Saudi Arabia has a clear disadvantage in this category.

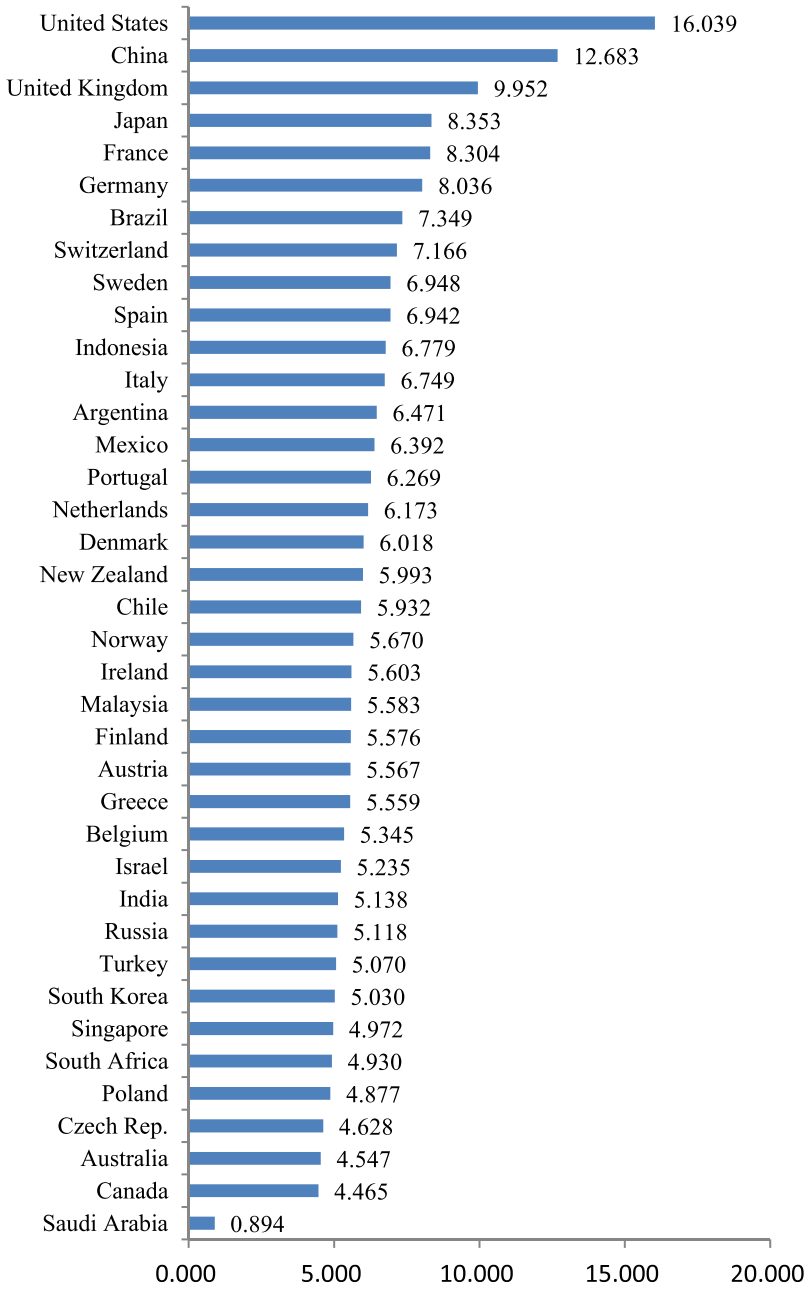

Figure 1.4 Talent environment index rankings for 38 countries

Denmark and Sweden take the top two spots in terms of talent input. The three indicators, "Public spending on education as a percentage of GDP (%)", "Expenditure on R&D as a percentage of GDP (%)" and "Expenditure on current health as a percentage of GDP (%)", represent the total investment in education, research and

development and health care relative to GDP. Denmark and Sweden have the highest scores, followed by Israel, the United States, Finland, and Belgium, with Norway, Austria, Germany, Switzerland, South Korea, Australia, and France in the second tier; the Netherlands, New Zealand, Brazil, the United Kingdom, Japan, and Saudi Arabia in the third tier. While China and Russia remain far from the top, they placed relatively well among other developed countries, indicating a latecomer advantage in the total talent input. Indonesia's competitiveness index in this category is only a quarter of that of Denmark.

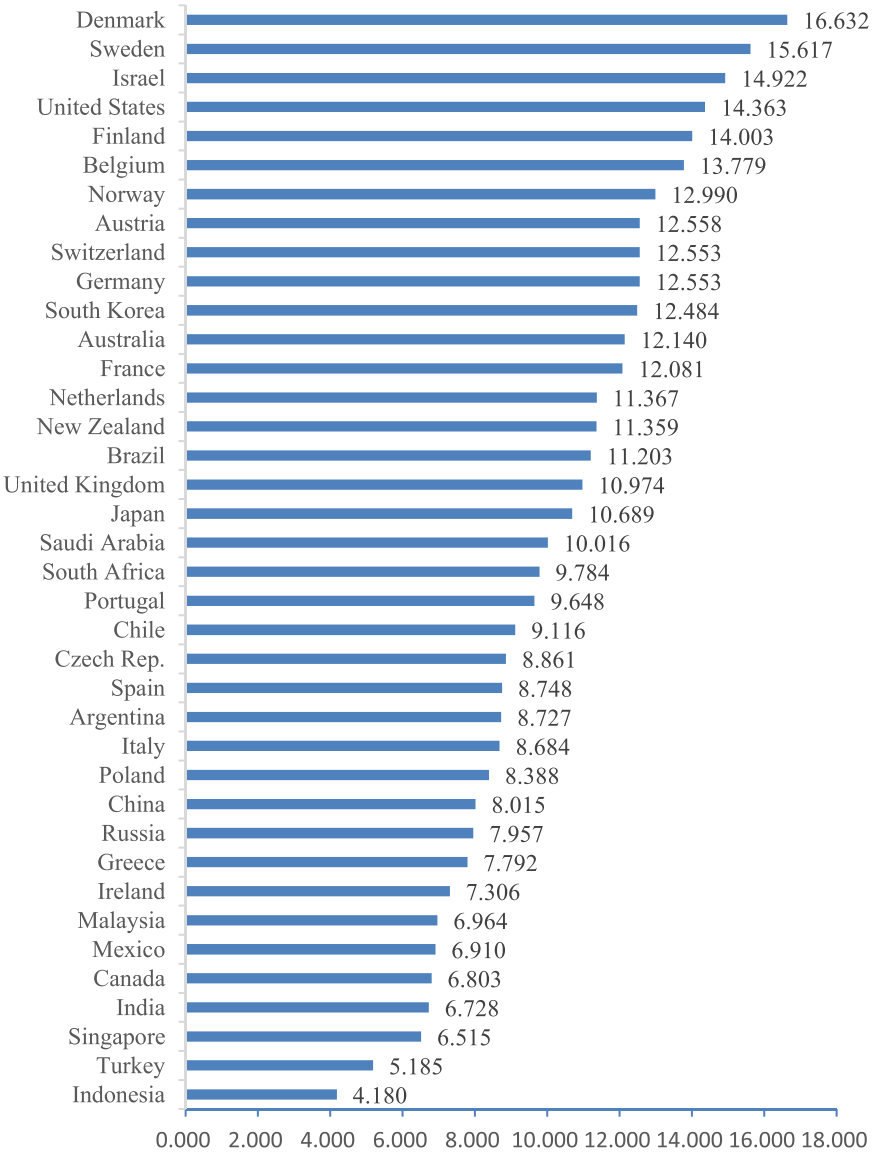

Figure 1.5 Talent input index rankings for 38 countries

In terms of talent performance, Singapore ranks far above all other countries in three indicators including "Labor productivity (GDP/ Employment)", "Number of

active patents per capita in the labor force", and "Medium and high-tech manufacturing value added (% manufacturing value added)". Following Singapore are Ireland, the United States, South Korea, Switzerland, Denmark, Japan, and Norway. Russia, Chile, South Africa, and three other countries demonstrated a relative weakness.

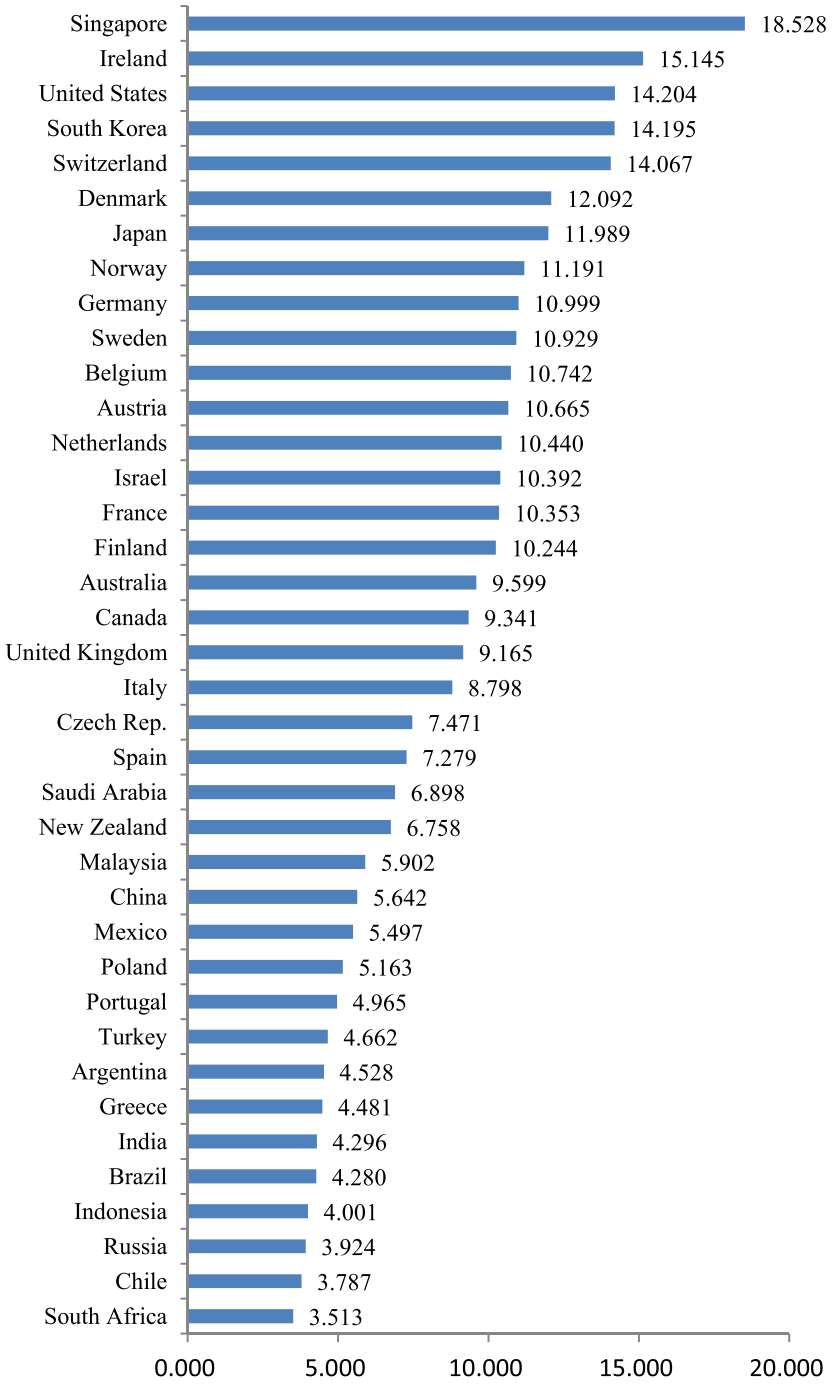

Figure 1.6 Talent performance index rankings for 38 countries

China's Strengths and Weaknesses in Talent Competitiveness

In looking at China's scores for all five indicators, we find that China has the highest score in terms of scale (100), followed by environment with 79.08 points, followed by input (48.19 points), performance (30.45 points), and quality (18.83 points).

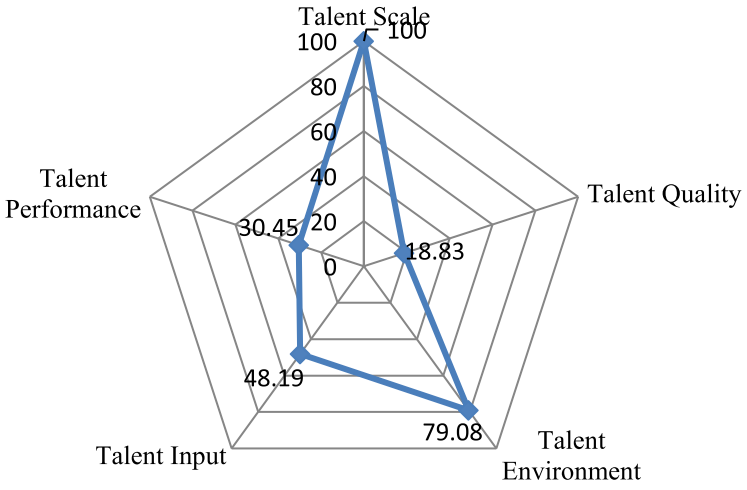

Figure 1.7 China's talent competitiveness index scores by indicators (on a 100-point scale)

In terms of the overall talent competitiveness index, we find that China lags behind the United States, South Korea, Japan, and the United Kingdom, ranking eighth. China ranks lower than it should considering its massive global economic volume.

In terms of talent scale, China has a clear competitive similar to the United States, which is far ahead of all other countries.

China shows a weakness in terms of talent quality, but this is a temporary disadvantage. This is partially to do with the country's shortage of high-quality talent, but more so because of its large population and the resulting demand for employment. In this sense, China will be at a disadvantage in this indicator whenever per capita data is used.

In terms of talent environment, China ranks second among all countries, which indicates improvements in the living and working environment and platforms for cultivating talent. As early as October 2013, President Xi Jinping emphasized this at

the 100th anniversary of the establishment of the Western Returned Scholars Association saying that "If the [talent] environment is good, the pool of talent will build and careers will flourish; otherwise, people will scatter, and careers will fail. We should improve the operations, enhance services, strengthen education and guidance, build innovative platforms, and get better at discovering, consolidating, and utilizing talent, creating a good environment for students [seeking education abroad] to return and work in their homeland.". In the recent decade, governments at both local and national levels all emphasized building the optimal environment for the individual career development.

In the talent input category, China ranks 28th among all countries. Although China is far behind countries such as Denmark and Sweden, it is not too far from other developed countries, showing a latecomer advantage in terms of total talent input. At a Party Central Committee conference on talent-related work in September 2021 the importance of increasing investment in talent development and improving the effectiveness of talent input was emphasized, laying the foundation for maximizing China's latecomer advantage.

In terms of talent performance, China ranks 26th among all countries, with a competitiveness index score only half that of Singapore's. This indicates that there are still barriers keeping talent from realizing their full potential in China. It also indicates that China still has a long way to go in changing how it cultivates talent.

Chapter 2: The Present Status and Trends in Global Talent Flow

Concepts of Global Talent Flow

Talent

China's National Program for Medium- and Long-term Talent Development (2010-2020) defines *talent* as "a person who has certain professional knowledge or skills, who performs creative work and contributes to the society, creating value for the society, and those who are relatively high quality in the labor force considered by metrics of human resources." In the Contemporary Chinese Dictionary, *talent* is defined as "a person who possesses both integrity and ability; a person who has certain specialties."

In other countries, concepts closer to the meaning of what talent means in China are *human capital* and *human resources*. In the 19th century, some scholars categorized *human capital* as a crucial component of national competitiveness. German economist Friedrich List emphasized the importance of incentive mechanisms and tapping intellectual resources i.e., human capital in his interpretation of the mental power level within the three levels of national productivity. In 1954, Peter F. Drucker first coined the term "human resources" in his book *The Practice of Management,* arguing that the first sign of decline in an industry is the loss of appeal to qualified, able, and ambitious people.[①]

This report defines *talent* as a person who possesses specific knowledge and capabilities and who can contribute to society.

Talent Flow

Talent flow can mean the movement of talent in physical spaces or among industries and occupations. In this report, *talent flow* focuses on the movement of talent

① Huiyao, Wang. International Talent Competition Strategy [M]. Beijing: Party Building Readers Publishing House, 2014:5.

across countries and regions. In the chapter “A Cross-Disciplinary Perspective on Trends in Global Talent Flows”, it also covers talent moving between industries and occupations. Many factors contribute to the flowing of talent, mostly the knowledge economy, globalization, differences in demographic structures, and policy on human resources by different governments. Talent flow in physical spaces, as defined by this report, includes three patterns: talent outflow or inflow (unilateral), talent return (bilateral), and talent circulation (multilateral).

Talent outflow is a moving pattern defined from the perspective of talent-exporting countries, i.e., the movement of talent from one country to another. For talent-importing countries, this can be interpreted as *talent inflow,* but whether it is "outflow" or "inflow", talent flow indicates unilaterality.

The process of talent flowing from country A to country B and back to country A is called *talent return*. In the case of *talent return*, talent flowing out from country A may have acquired knowledge in frontier technologies or management skills after studying or working in country B. When these individuals return to country A, they bring back knowledge obtained in country B such as cutting-edge technologies, different thought processes, management skills, etc.

Talent circulation is the circular flow of talent between an outflow country, an inflow country and a third country. In the process of talent circulation, talent circulates between countries A, B, and C, so that the three countries are no longer simply exporting or importing talent unilaterally but are able to do both. In terms of physical space in this context, talent circulation covers two or more countries; as for the frequency an individual changes location, they are no longer limited to moving permanently and may move multiple times during their career. In terms of the utility of the flow, talent circulation is not a zero-sum game, but a win-win situation in which all sides can benefit.[①] Talent circulation promotes the exchange of resources, capital, and technology for mutual benefit, boosting the socio-economic development of all countries involved.

① Hongliang, Du. Qiqige, Wuyun. Making China an Important Pole in the Global Talent Circulation [EB/OL]. (2012-04-27) [2022-10-07]. http://www.kjw.cc/2012/04/27/29930.html.

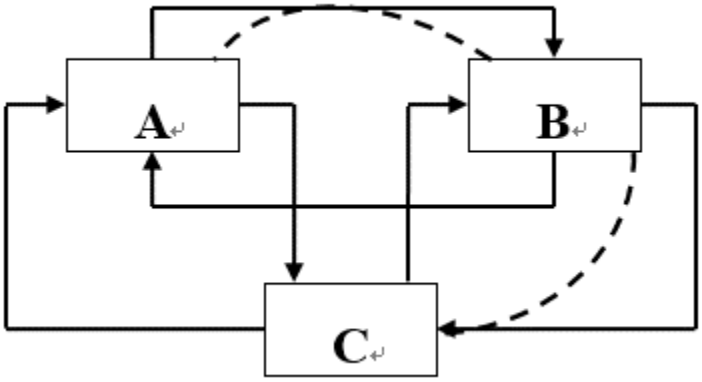

Figure 2.1 Talent circulation

Source: Yi, Wang. Towards A Global Talent Hub: Its Concept and Development Strategy [J]. Scientific Development. 2013 (02): 89-99.

The Current Status of Global Talent Flows across Regions

Any analysis of the current state of global talent flows across regions should be based on a large amount of data. The definition of "talent" varies from country to country, and there is no universally accepted standard for monitoring the flow of talent around the world. This report carries out a preliminary analysis of the current state of inter-regional talent flows by tracking the flow trends among international migrants,[①] especially work-based international migrants and international students.

① The "Recommendations on Statistics of International Migration" officially published by the United Nations Bureau of Economic and Social Affairs in 1998 defines an 'international migrant' as anyone who changes their Country of Usual Residence (excluding those who leave for short periods for recreation, vacation, business, medical or religious reasons). It divides "international migrants" into "Short-term Migrants" and "Long-term Migrants". "Short-term Migration" refers to moving to another country other than the country of origin for at least 3 months and less than one year (12 months); "Long-term Migration" refers to moving to a country other than the country of origin for at least one year (12 months), with the country of destination becoming the de facto new country of permanent residence. In terms of the emigration country, a "Long-term Migrant" is equivalent to a "Long-term Emigrant". In terms of the countries of immigration, a "Long-term Migrant" is equivalent to a "Long-term Immigrant ".

The International Organization for Migration (IOM) defines an "international migrant" as a person who leaves his or her country of origin or previous country of residence, crosses national borders, and lives permanently or for a certain period of time in another country for the purpose of settlement. At the same time, special emphasis is placed on the relationship between "international migration" and "social development". "When talking about migration and development, the 'migrants' are those who are not forced by any external factors and make their own choices to migrate, excluding refugees, exiles or diasporas." In this report, the definitions and data of international migration provided by the United Nations Economic and Social Affairs Statistics Bureau and the International Organization for Migration are basically the same.

The form and purpose of transnational migration of international migrants can be divided into work-based international migrants, investment-based international migrants, reunion-based international migrants, learning-based international immigrants, crisis migrants, illegal migrants, and other categories. This report mainly involves work-based international migrant and learning-based migrant (i.e., international students).

Status of International Migration Flows ①

1. Continued Growth in the Number of International Migrants and as a Share of the World's Population

According to the United Nations Department of Economic and Social Affairs, in 2020, nearly 281 million people lived in countries other than their country of birth, an increase of 62.4% over 2000 (173 million and an 83.7% increase over the 1990 total of 153 million), which is 3.35 times that of 1970 (84 million). Meanwhile, the share of international migrants as a part of the global population has increased slowly, from 2.8% in 2000 to 3.6% in 2020.

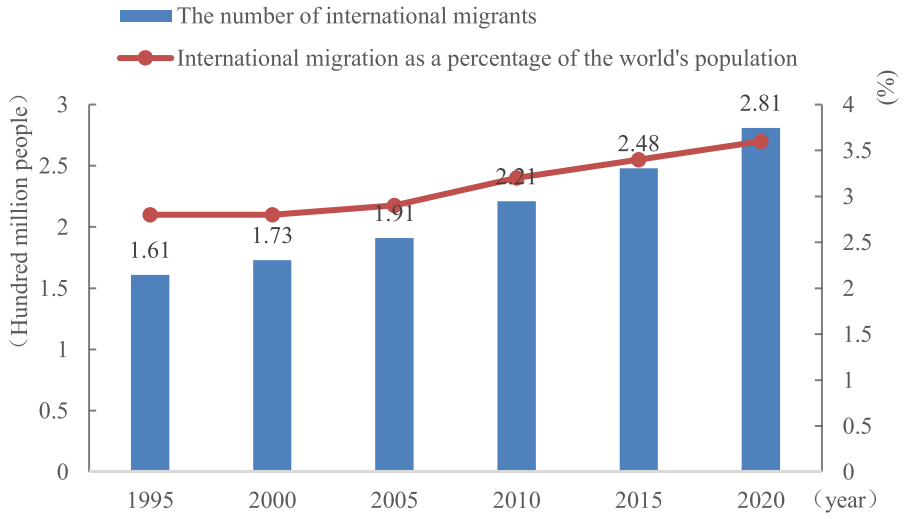

Figure 2.2 Number and percentage of international migrants, 1995-2020

2. Increased Numbers and Proportions of International Migrants in UN Regions

From 1995 to 2020, the stock of international migration increased by the hundreds of thousands and even tens of millions, in most United Nations regions, with the exception of Africa, where the share of international migration as a part of the region's population increased. The share of international migration increased slightly in Asia and Latin America and the Caribbean, while Europe, North America, and Oceania all saw increases of about 4 percentage points or more.

① Unless otherwise stated, the source of data in this part are all from IOM's World Migration Report (2022).

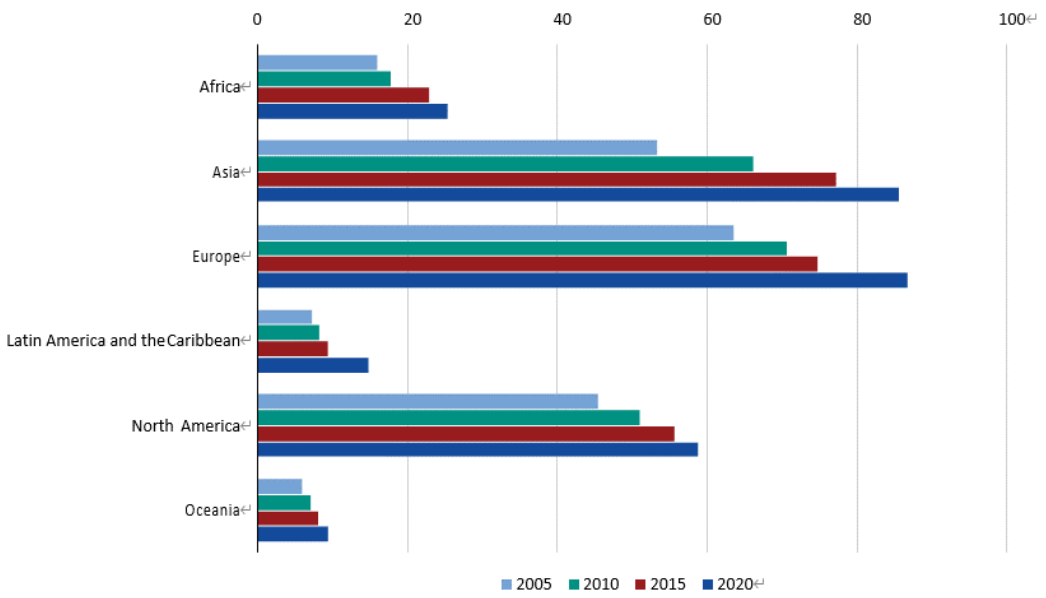

Figure 2.3 International migrants, by major region of residence, 2005-2020 (millions)

Europe is currently the largest destination for international migrants, with 87 million migrants (30.9% of all international migrants), followed closely by 86 million international migrants living in Asia (30.5%). North America is the chosen destination for 59 million international migrants (20.9%), followed by Africa with 25 million migrants (9%). Over the past 15 years, the number of international migrants in Latin America and the Caribbean has more than doubled from around 7 million to 15 million, making it the region with the highest growth rate of international migrants and the destination for 5.3 percent of all international migrants. Around 9 million international migrants, or about 3.3 percent of all migrants, live in Oceania.

Europe's international migrants mainly come from Europe, Asia, and North Africa. Asia is the world's largest source of international migrants, accounting for more than 40% (115 million) of total global migration in 2020. The majority of international migration in Africa is intra-regional, with about 21 million Africans living in an African country other than their country of birth in 2020.

3. International Migration Flows Mostly from Developing to Developed Countries Led by the United States

In 2020, the United States was still the primary destination for international migrants, with more than 51 million international migrants. Of these, about 10.85 million were from Mexico, followed by about 2.72 million from India and 2.18 million

from China.[①] Germany has become the second most prominent destination, with nearly 16 million international migrants, mainly from Poland (2.14 million) and Turkey (1.84 million). Saudi Arabia is the third largest destination country for international migrants, with 13 million international migrants. The Russian Federation and the United Kingdom round out the top five destination countries, with about 12 million and 9 million international migrants respectively.

With nearly 18 million people living abroad, India has the largest emigrant population in the world, with the United Arab Emirates, the United States, and Saudi Arabia being the top three destinations for Indian immigrants. Mexico is the second largest source of international migrants, producing about 11 million migrants, of which about 10.85 million go to the United States. The Russian Federation is the third largest origin country, followed closely by China (around 10.8 million and 10 million respectively). In 2022, more than 2 million Chinese immigrated to the US, followed by South Korea (about 800,000) and Japan (about 770,000).

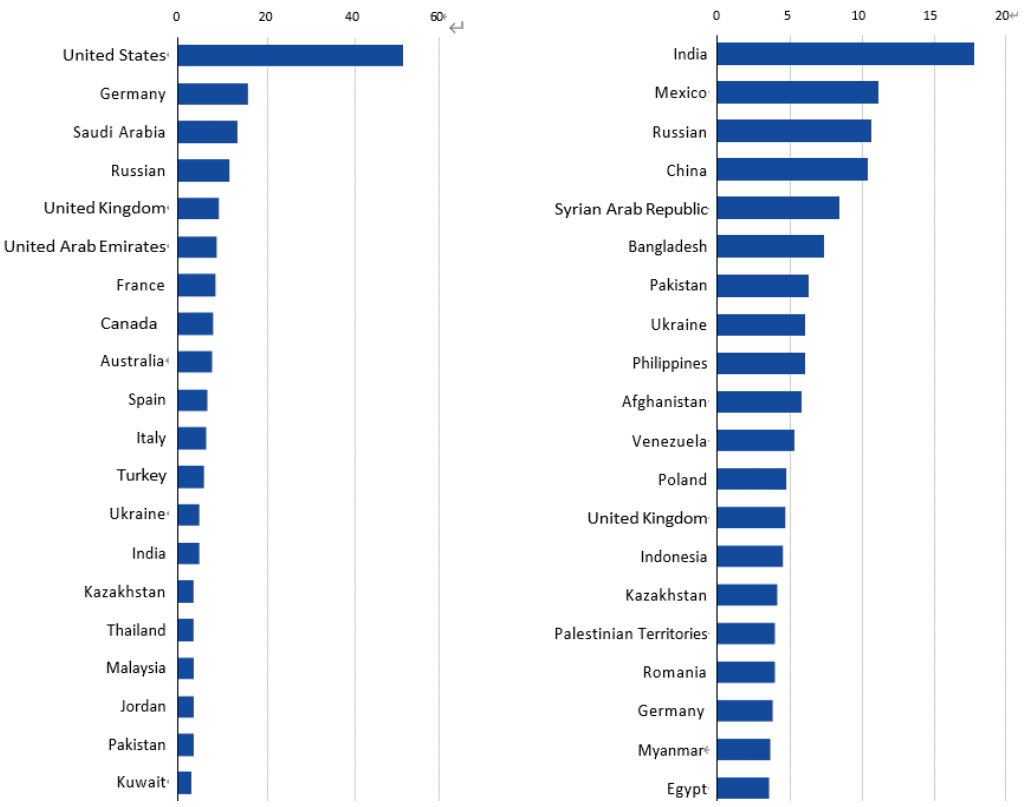

Figure 2.4 Top 20 destinations (left) and origins (right) of international migrants in 2020 (millions)

① IMO. World Migration Report 2022. https://worldmigrationreport.iom.int/wmr-2022-interactive/.

The most significant corridor for international migration flows is currently that from Mexico to the United States, with nearly 11 million people passing across the border in 2020. The next largest corridor is from the Syrian Arab Republic to Turkey. The third place belongs to the channel from India to the United Arab Emirates (over 3 million), which is dominated by labor migrants. India to U.S. and China to U.S. migration corridors rank as the sixth and twelfth largest corridors.

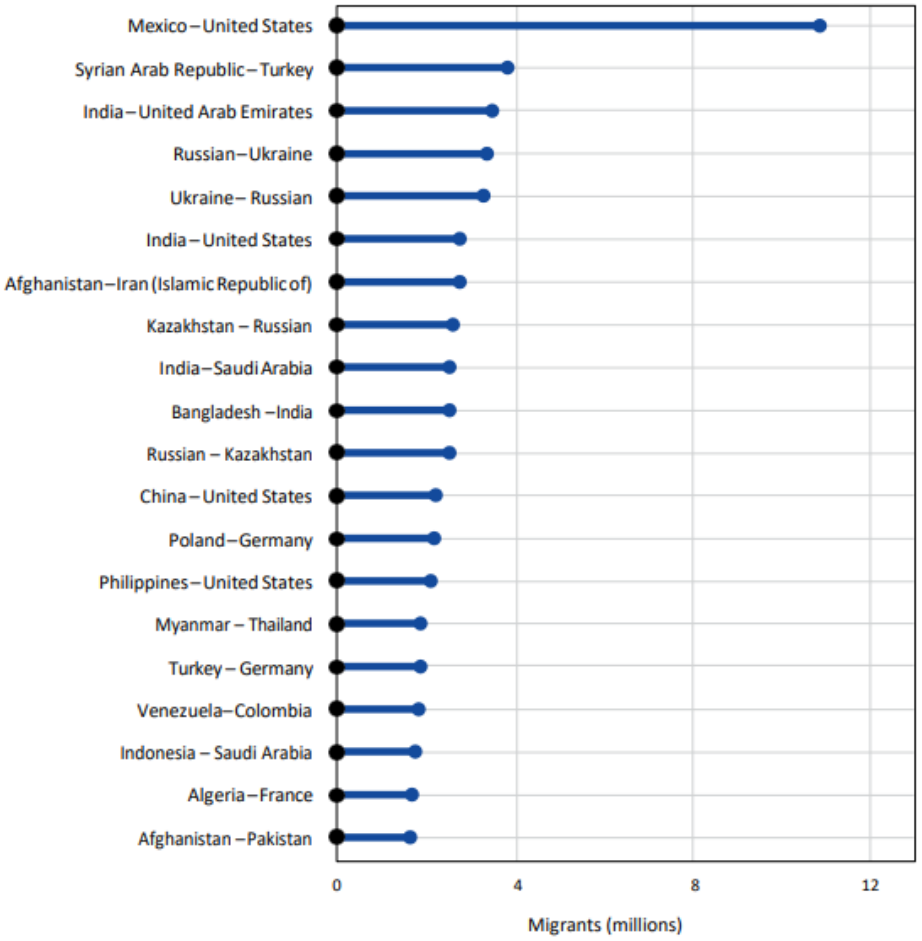

Figure 2.5 Top 20 international migration country-to-country corridors, 2020

4. International Migrant Workers are Mainstream, Mostly in Service Sectors in High-income Countries and Emerging Markets

The latest ILO statistics on the global stock of International migrant workers show[①] that in 2019, approximately 169 million international migrants were employed or seeking employment in their countries of destination, representing approximately 62%

① International migrant workers, namely transnational migrant workers, refer to international migrants who are employed or seeking employment opportunities in their current country of residence.

of the total number of international migrants (272 million) that year. This includes about 69% of the international migrant population (245 million people) of working age (typically 15 years and older).[①] The current flows of international migrant workers are mainly characterized by the following traits:

Firstly, international migrant workers are mostly in developed countries in Northern Europe, Southern Europe, Western Europe, and North America. International migrant workers in these regions account for 46.3% of the global total. By contrast, only 2.8% of all international migrant workers are in East Asia. In terms of the number of international migrant workers as a percentage of all workers in a region, statistics show that Arab countries are the highest percentage of international migrant workers, accounting for 27%, while in East Asia was the lowest of nearly all regions at 0.5%.

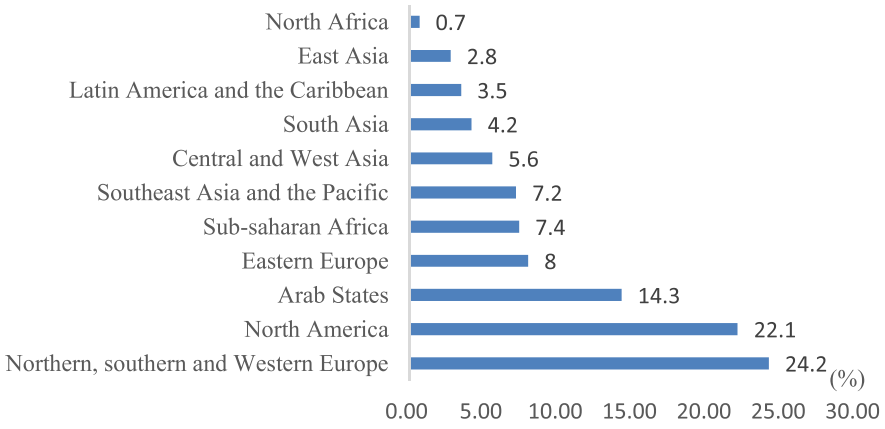

Figure 2.6 Proportion of international migrant workers by region

Source: International Labor Organization. ILO Global Estimates on International Migrant Workers Results and Methodology (2021).

Second, most international migrant workers are concentrated in high-income countries, while emerging markets also show strong attractiveness. About 67% (113.9 million people) of international migrant workers are in high-income countries and 19.5% are in upper-middle-income countries, most of which are emerging markets, while only 3.6% are in low-income countries. The proportion of female international migrant workers in high-income or upper-middle-income countries (88.6%) is relatively high.

① The ILO considers the 2019 figures to be incomparable with earlier figures (36-42 million in 1995, 86.2 million in 2000 and 105.5 million in 2010, 150.3 million in 2013 and 164 million in 2017) due to differences in definitions, methods and data sources.

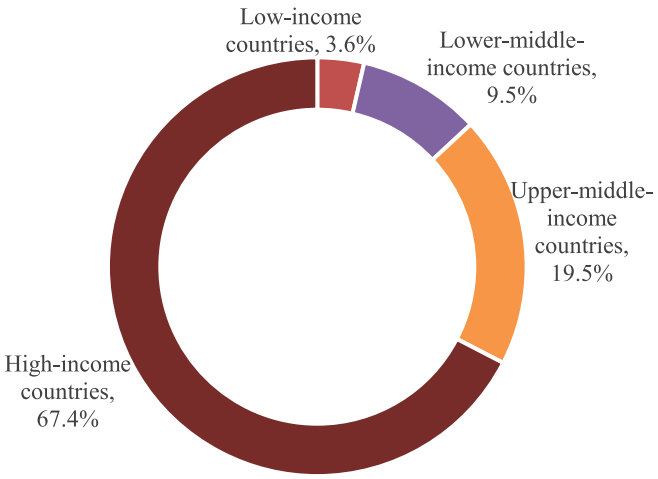

Figure 2.7 International migrant workers by income level of country

Source: International Labor Organization. ILO Global Estimates on International Migrant Workers Results and Methodology (2021).

Thirdly, most of the international migrant workers are engaged in the service sector. About 66.2% of international migrant workers work in the service sector, 26.7% in industry and 7.1% in agriculture. Of these, 79.9% of female migrant workers are in the service sector. This higher proportion of female migrant workers in the service sector may be partly due to the growing labour demand in the care economy, which relies heavily on female migrant workers.

Figure 2.8 Distribution of international migrant workers by industry

Source: International Labor Organization. ILO Global Estimates on International Migrant Workers Results and Methodology (2021)

Current State of International Student Flows

Tripling of International Student Numbers in 20 Years from Developing to Developed Countries with Robust Two-way Flows across Regions

Although the number of international students is far less than the number of international migrant workers, they are often regarded as "quasi-international talent pools", which attract the attention of and spur competition between various countries. According to UNESCO's statistics and projections, the number of students moving across borders tripled from 2.09 million in 2000 to 6.36 million in 2020.①

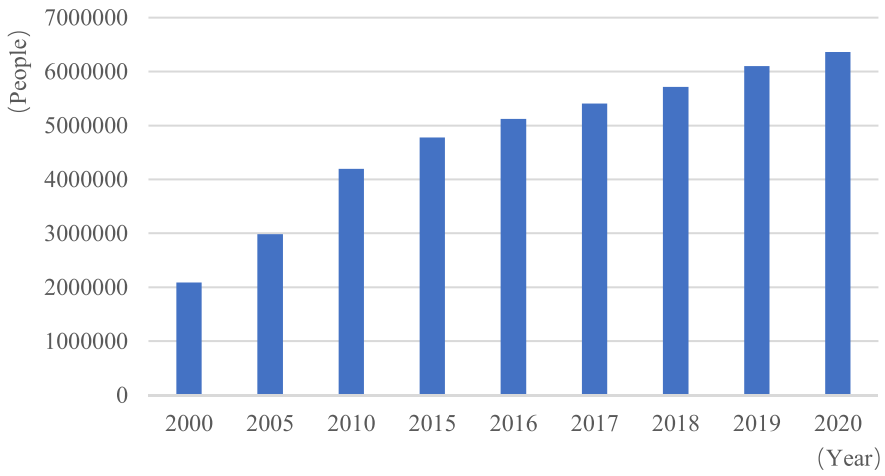

Figure 2.9 Change in the number of international students, 2000-2020.

Source: UNESCO. Number and rates of international mobile students. [DS/OL]. [2022-10-08]. http://data.uis.unesco.org/#.

Destination Countries for International Students: Mostly Developed Countries in North America and Europe

The United States is the top destination country for international students, followed by the United Kingdom, Australia, and Germany. 23.7% of international students study in the United States and the United Kingdom and more than a quarter of these are from China and India. The United States, China, Germany, and France are not only the top 10 destinations but also among the top 10 source countries for overseas students.

① UNESCO. Number and rates of international mobile students. [DS/OL]. [2022-10-08]. http://data.uis.unesco.org/#.

Table 2.1 Number of international students in the higher education system of main destination countries, 2019-2020

Country	2020 (People)	2019 (People)	Year-on-year growth (%)
United States	914,095	1,075,496	-15.01
United Kingdom	550,877	489,019	12.65
Australia	458,279	509,160	-9.99
Germany	368,717	333,233	10.65
Canada	323,157	279,168	15.76
Russia	-	282,922	-
France	252,444	246,378	2.46
China	225,100	201,177	11.89
Japan	279,597	312,214	-10.45
Turkey	185,047	154,505	19.77

Source: UNESCO. Number and rates of international mobile students. [DS/OL]. [2022-10-08]. http://data.uis.unesco.org/#. Data of the United States are from the Open Doors Report (2020); Data of Japan are from the Annual Survey of International Students in Japan (2020) by the Japan Student Services Organization.

Table 2.2 Number and growth rate of international students in the top 10 source countries of oversea students, 2019-2020

Rank	Country	2020 (People)	2019 (People)	Growth Rate (%)
1	China	1,088,466	1,060,042	2.68
2	India	516,238	460,741	12.05
3	Vietnam	132,559	125,504	5.62
4	Germany	123,512	122,666	0.69
5	United States	109,827	102,340	7.32
6	France	108,654	103,010	5.48
7	South Korea	100,610	101,577	-0.95
8	Nepal	95,268	93,360	2.04
9	Kazakhstan	90,333	89,345	1.11
10	Brazil	89,151	81,719	9.09

Source: UNESCO. Number and rates of international mobile students. [DS/OL]. [2022-10-08]. http://data.uis.unesco.org/#.

International Student Flow in Asia

In terms of inbound study, Japan, China, Turkey, and South Korea attract a large number of international students (more than 100,000 in 2020) and show rapid growth. Among these, Turkey saw a 1.1-fold increase from 2016 to 2020, while India and

Singapore saw limited increases in the number of international students arriving at 49,348 and 54,982 respectively in 2020. Malaysia's inbound internationally mobile students population dropped by nearly 40,000 from 2016 to 2020. Overall, inbound internationally mobile students in Asia mainly come from other Asian countries. For example, in the 2019-20 academic year, about 264,000 international students studying in Japan were from Asia, accounting for 94.6 percent of its total international student population.[①]

In terms of the number of students studying abroad, China ranks first not only in Asia but also globally. Since 2019, more than 1 million Chinese students have studied abroad, while in 2020, the number of Indian students studying abroad exceeded 500,000. From 2016 to 2020, India saw the fastest growth in its study abroad sector with an increase of 69.02% in five years. The number of Malaysians and Singaporeans studying abroad decreased by 15.02% and 14.34% respectively. Saudi Arabia saw the biggest decline, down to 58,936 students in 2020, with a decline of nearly 40,000 people.

Table 2.3 Internationally mobile students from major countries in Asia, 2020 (Total students, %)

	Inbound students		Outbound students	
	Number of inbound students	Growth rate in 2020 relative to 2016	Number of outbound students	Growth rate in 2020 relative to 2016
China	225,100	63.68	1,088,466	25.57
South Korea	111,568	80.27	100,610	-4.61
Japan	279,597	-	32,913	3.97
India	49,348	10.24	516,238	69.02
Singapore	54,982	3.50	21,666	-14.34
Indonesia	-	-	55,961	17.18
Malaysia	89,193	-28.15	55,311	-15.02
Israel	-	-	18,300	29.19
Turkey	185,047	110.51	51,146	12.29
Saudi Arabia	69,005	-13.59	58,936	-34.69

Source: Data of inbound internationally mobile students in Japan is from the Japan Student Services Organization; other data are from UNESCO Institute for Statistics.

① Huiyao, Wang. Lv, Miao. Jinlian Zheng. Annual Report on the Development of Chinese Students Studying Abroad (2022). Beijing: Social Sciences Academic Press.

International Student Flow in Europe

In terms of inbound study, with the exception of Belgium, Denmark, Italy, and Greece, the number of inbound internationally mobile students from major European countries continued to grow from 2016 to 2020 with Portugal, Spain, and Germany seeing the highest growth rates with increases of more than 50%. The UK, Germany, France, and the Netherlands, which received the largest number of international students in Europe, hosted a total of more than 100,000 international students with the majority coming from within Europe and Asia.

Table 2.4 Internationally mobile students from major countries in Europe, 2020 (Total students, %)

	Inbound students		Outbound students	
	Number of inbound students	Growth rate in 2020 relative to 2016	Number of outbound students	Growth rate in 2020 relative to 2016
United Kingdom	55,0877	27.52	40,074	16.18
Germany	368,717	50.76	123,512	4.58
France	252,444	2.89	108,654	19.61
Switzerland	57,972	11.68	18,627	38.84
Ireland	24,141	34.99	15,183	3.16
Netherlands	124,876	38.87	19,285	13.22
Finland	23,591	1.70	10,946	7.52
Belgium	54,080	-11.49	17,168	21.31
Sweden	31,935	13.94	15,092	-12.87
Norway	12,887	18.45	15,964	-15.36
Denmark	31,478	-7.51	6,041	18.99
Austria	75,870	7.64	23,998	32.76
Spain	82,269	65.08	46,994	23.10
Russia	-	16.07	57,591	0.50
Italy	58,508	-36.85	84,449	25.53
Czech Republic	47,768	11.58	12,195	-2.68
Poland	62,091	13.44	26,495	9.33
Greece	22,429	-5.50	40,395	13.11
Portugal	44,005	98.27	22,807	76.81

Source: UNESCO Institute for Statistics. Note: Russia's growth rate is from 2016 to 2019; Portugal's growth rate is from 2017 to 2020.

In terms of the number of students studying abroad, France and Germany produced the most international students in Europe, each sending more than 100,000 students abroad in 2020. From 2016 to 2020, with the exception of Sweden, Norway, and the Czech Republic, the number of students studying abroad in other major European countries increased to a greater or lesser extent. It is worth noting that Germany and France not only have a large number of inbound internationally mobile students, but they also have a large number of students going overseas, demonstrating a pattern of large inflow and outflow of international students.

International Student Flow in North America

North America is the world's leading destination for overseas students, with 957,475 students enrolled in the US higher education system in 2020 and 323,157 in Canada. While the number of international students in the United States has decreased slightly over the past five years, the number of international students in Canada has increased by 70.55 percent compared with 2016. According to the Institute of International Education's 2021 Open Doors Report, international students from Asia account for 70.6 percent of all international students in the U.S. higher education system. The top three source countries are China, India, and South Korea, which in total make up more than half of all international students in the United States.①

Meanwhile, the number of Americans studying abroad has grown steadily from 84,026 in 2016 to 109,827 in 2020, an increase of 30.71 percent. However, the number of Canadians studying abroad declined first and then increased, maintaining an average of around 50,000 from 2016 to 2020.

Table 2.5 Internationally mobile students from major countries in North America in 2020 (Total students, %)

	Inbound students		Outbound students	
	Number of inbound students	Growth rate in 2020 relative to 2016	Number of outbound students	Growth rate in 2020 relative to 2016
United States	957,475	-1.44	109,827	30.71
Canada	323,157	70.55	51,156	1.14

Source: UNESCO Institute for Statistics.

① Institute of International Education: https://opendoorsdata.org/data/international-students/all-places-of-origin/.

International Student Flow in Latin America

In terms of inbound study, the number of inbound internationally mobile students in Latin American countries showed a rapid rise from 2016 to 2020, especially Mexico and Chile where the number of inbound internationally mobile students in 2020 respectively increased 2.4 times and 1.8 times compared with 2016. Argentina enjoyed the largest number of inbound internationally mobile students, with 121,577 in 2020, followed by Mexico with 43,458.

In terms of studying abroad, Brazil had the largest number of students studying overseas among the major Latin American countries with 89,151 in 2020, followed by Mexico with 34,781. Argentina had the lowest number of students studying abroad at only 9,998. Steady growth from 2016 to 2020 saw the number of students from Brazil, Chile, and Argentina studying abroad increase significantly.

Table 2.6 Internationally mobile students from major countries in Latin America in 2020 (Total students, %)

	Inbound students		Outbound students	
	Number of inbound students	Growth rate in 2020 relative to 2016	Number of outbound students	Growth rate in 2020 relative to 2016
Mexico	43,458	243.43	34,781	4.83
Brazil	22,364	11.84	89,151	71.42
Argentina	121,577	60.63	9,998	31.67
Chile	12,832	180.91	18,309	33.12

Source: UNESCO Institute for Statistics

International Student Flow in Oceania

From 2016 to 2019, the number of inbound internationally mobile students in Australia increased rapidly. Due to the impact of the COVID-19 pandemic, the number of international students entering Australia in 2020 decreased significantly compared to 2019, but still increased by 36.59% compared with 2016. From 2016 to 2019, the number of inbound internationally mobile students in New Zealand remained at about 53,000. In 2020, due to the impact of the global COVID-19 pandemic, the number of inbound internationally mobile students in New Zealand showed a significant decrease with a drop of 18.86% compared with 2016. International students in Australia and New Zealand mainly come from China.

In terms of outbound students, both Australia and New Zealand have very few

students studying abroad relative to their inbound students. The number of students from Australia remained studying abroad at about 13,000, or around 3% of the number of inbound students, while the number of New Zealand students studying abroad totaled about 5,000 or around 10% of the number of incoming students.

Table 2.7 Internationally mobile students from major countries in Oceania in 2020 (Total Students, %)

	Inbound students		Outbound students	
	Number of inbound students	Growth rate in 2020 relative to 2016	Number of outbound students	Growth rate in 2020 relative to 2016
Australia	458,279	36.59	13,742	6.94
New Zealand	43,699	-18.86	5,038	-10.02

Source: UNESCO Institute for Statistics.

International Student Flow in Africa

South Africa has the highest number of inbound internationally mobile students in Africa. The number of international students coming to South Africa in 2020 was 36,050, which was 20.14% lower than in 2016. Morocco boasts the largest number of students studying abroad, totaling 63,001 in 2020, more than half of which went to France. The number of South Africans studying abroad gradually increased from 2016 to 2019, with a slight drop in 2020 (12,295) compared to 2019, but an increase of 21.14 percent compared with 2016.

A Cross-Sector Perspective on Trends in Global Talent Flows

Global Talent Flows in Digital Economy

In recent years, digital technologies such as big data, cloud computing, and artificial intelligence have more substantially integrated with the real economy. They have become a major catalyst in driving the global digital economy, transforming traditional modes of production and industrial structures, and supercharging digital and emerging industries. All these suggest that the digital economy has become a

powerhouse for economic growth. Statistics show that in 2021, the total economic value added (EVA) of the digital economy in 47 countries reached $38.1 trillion, with a nominal growth rate of 15.6% year-on-year and making up 45.0% of GDP.

The scale of the digital economy in developed countries reached $27.6 trillion in 2021, accounting for 55.7% of GDP, while the growth rate in the digital economy in developing countries sped up, reaching 22.3% in 2021.[①] The Internet Data Center (IDC) predicted that by 2023, the digital economy would account for 62% of global GDP, and the world will enter an era of the digital economy.[②]

With the rapid development of the digital economy, industrialization has been redefined, which can be defined as a dual trend that is expressed in the industrialization of digitization and the digitalizing of current industries. The digital economy has challenged the disciplinary boundaries of the traditional industrial economy, pushing global talent in all disciplines to flow to this sector. According to the *Future of Jobs 2020 Report* conducted by the World Economic Forum (WEF), the vast majority of the fastest-growing 20 jobs are related to the digital economy, see table 2.8 for details.

An increasing number of countries have attached importance to cultivating high-quality and innovative human resources in STEM fields that are closely related to the digital economy. The US House of Representatives passed the America COMPETES Act in February 2022, introducing a series of groundbreaking policies to attract global talent in STEM fields. With the "Society 5.0" agenda, the government of Japan is promoting STEM education and AI knowledge education in junior and senior high schools.[③] China also launched the "China STEM Education 2029 Innovation Action Plan" in 2018 to further establish nationwide STEM education bases.[④] To promote the digitization of traditional industries, OECD countries have vigorously facilitated upskilling or retraining programs, such as improving digital capabilities (Slovenia), building digital capability centers (Germany), strengthening Information and Communications Technology (ICT) training for SMEs (Israel), supporting ICT industry employee training (Latvia), introducing upskilling and retraining programs to workers

① China Academy of Information and Communications Technology (CAICT). "Report on the Development of China's Digital Economy (2022)". The digital economy includes four sectors: the information communication industry, the digitization of industries, digital governance, and the monetization of data. http://www.caict.ac.cn/kxyj/qwfb/bps/202207/P020220729609949023295.pdf.
② China Academy of Information and Communications Technology (CAICT). "White Paper on Global Digital Economy (2022)". [R/OL]. (2022-7-29) [2022-10-8].
③ China Academy of Information and Communications Technology (CAICT). "Report on the Development of China's Digital Economy (2022)". [R/OL]. (2022-7-29) [2022-10-8].
④ Xiaopeng, Wu. STEM education from a policy perspective. Forum on Contemporary Education. 2020(02):55-64.

(Portugal), and providing free online courses (UK).[①] Clearly, countries around the world are prioritizing the cultivation of talent related to the digital economy and the upskilling of the digital capabilities in the existing labor force, propelling both an increase in the size of the digital labor force and cross-sector talent flows.

Table 2.8 20 most in-demand jobs across industries

Data Analysts and Scientists	Project Managers
AI and Machine Learning Specialists	Business Services and Administration Managers
Big Data Specialists	Database and Network Professionals
Digital Marketing and Strategy Specialists	Robotics Engineers
Process Automation Specialists	Strategic Advisors
Business Development Professionals	Management and Organization Analysts
Digital Transformation Specialists	FinTech Engineers
Information Security Analysts	Mechanics and Machinery Repairers
Software and Applications Developers	Organizational Development Specialists
Internet of Things Specialists	Risk Management Specialists

Source: World Economic Forum. Future of Jobs Report 2020.

The rapid growth of online education platforms has made possible an influx of talent into the digital economy. Online learning platforms based on the core technology of "Cloud Computing+AI+Big Data" combines technology and education, making high-quality learning resources based on digital technologies that would otherwise be unavailable for global talent due to the limits of space and time. These resources provide a smooth transition to new career paths and further contribute to cross-sector talent flows.[②]

Emerging fields in the digital economy such as artificial intelligence continue to attract global talent. By mid-2020, over 60 countries proposed policies and strategies

① Organization for Economic Co-operation and Development (OECD). "Digital Economy Outlook 2020". [R/OL]. (2020-11-30) [2022-9-28] https://www.oecd.org/digital/oecd-digital-economy-outlook-2020-bb167041-en.htm.
② Finance_01. "Report on Global Online Learning Platforms". [R/OL]. (2020-3-23) [2022-9-28]. https://www.01caijing.com/finds/details/259430.htm.

focusing on AI, specifically in areas such as AI-related R&D (Canada, US, EU), AI applications (Finland, Germany, Korea), and AI skills (Australia, Finland, UK, US).[①] With such incentives, the rapidly developing AI industry is facing an alarming talent shortage. For example, China's AI talent shortage exceeded 5 million in 2020 as estimated by China's Ministry of Human Resources and Social Security, with a domestic supply-demand ratio of 1:10 that suggests a severe imbalance in supply and demand.[②] According to data released by China's Ministry of Industry and Information Technology, ratios of talent supply to demand for different technical positions in the AI industry are all below 0.4, indicating a serious shortage of talent supply in this field.[③] In the context of a serious AI talent crunch and countries catching up in cultivating talent in the AI industry with policy incentives, a large portion of the talent pool will cluster in emerging fields in the digital economy such as AI in the future.

There is also substantial demand for talent in the field of industrial digitization. Since 2020, digital labor forces have increasingly transferred into non-ICT industries (22 traditional industries such as manufacturing, finance, consumer goods, etc.). According to statistics, in 2022, 65.6% of enterprises surveyed have shown increased demand to provide training in digital technologies for their existing labor forces. Technicians and those able to apply and manage digital technologies at work are particularly short in supply. In the financial industry, market demand shows that 96.8% of financial institutions have a talent gap in fintech, and 54.8% of institutions believe that new employees are lacking in fintech skills and experience.[④] This reflects a trend of digitalization in traditional industries and the demand for digital talents in the field of fintech.

Global Talent Flowing to Emerging New Jobs

The further development of the digital economy has changed traditional demand in the labor force, creating new positions, and re-orienting the industry towards service, technology, and intelligence. As data shows, in 2020, the demand for AI specialists has grown 74% annually over the past four years, ranking first among the top 15 fastest-

① Organization for Economic Co-operation and Development (OECD). "Digital Economy Outlook 2022". (2020-11-3) [2022-9-26]. https://www.oecd.org/digital/oecd-digital-economy-outlook-2020-bb167041-en.htm
② Ministry of Human Resources and Social Security. Emerging Jobs: Report on Job Perspectives of Employees in AI Engineering. [R/OL]. (2020-4-30) [2022-10-08].
③ Talent exchange center of Ministry of industry and information technology. "Report on AI Industry Talent Development (2019-2020)".[R/OL]. (2020-6) [2022-10-8].
④ iResearch. White Book on the Development of Corporate Digital Talent. https://www.iresearch.com.cn/Detail/report?id=4018&isfree=0.

growing emerging roles.[①] The other 14 emerging roles include robotics engineers, data scientists, full-stack engineers, site reliability engineers, customer success specialists, sales development representatives, data engineers, behavioral health technicians, cybersecurity specialists, back-end developers, chief revenue officers, cloud engineers, JavaScript developers, and product owners. Emerging roles cluster in the digital economy emphasizes specific digital skill sets. According to the World Economic Forum (WEF), based on data from 15 industries in 26 economies, by 2030, 210 million people worldwide will be forced to shift jobs due to the new wave of digitalization, industrialization, automation, and globalization. By 2025, "85 million jobs may be displaced by a shift in the division of labor between humans and machines, while 97 million new roles may emerge that are more adapted to the new division of labor between humans, machines, and algorithms, across the 15 industries and 26 economies covered by the report."[②] In addition, according to the *Youth Development of New Occupations in New Employment Patterns Report*, the labor shortage of 20 new occupations such as internet marketers, digital managers, and AI specialists is close to 120 million. In particular, there is a shortage of internet marketers totaling 40 million, while the shortage for corporate compliance officers is 10 million, AI trainers 5 million, agricultural managers 1.5 million, and elderly ability assessors 3 million. These emerging roles will greatly expand the career paths open to global talent.[③]

COVID-19 and the global pandemic have accelerated and amplified existing trends toward remote and flexible work. This has allowed talent to explore other career options and become digital nomads. According to WEF's *The Future of Jobs Report 2020*, "Eighty-four percent of employers are set to rapidly digitalize working processes, including a significant expansion of remote work—with the potential to move 44% of their workforce to operate remotely."[④] According to a relevant study on the topic, 78% of companies have allowed remote work, and 47% plan to hire more flexible workers in the next two years, reaching about 600 million remote workers worldwide by 2024.[⑤]

On the other hand, emerging roles have also made flexible work possible and allowed employees to become digital nomads. The MBO Partners 2021 State of

① LinkedIn. Report on Emerging Jobs (2020). [R/OL]. (2021-1-7) [2022-10-09].
② World Economic Forum. The Future of Jobs Report 2020. [R/OL]. (2020-10-20) [2022-10-10]. https://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf.
③ Tencent Youth Development Committee and CCG. Youth Development of New Occupations in New Employment Patterns Report.
④ World Economic Forum. The Future of Jobs Report 2020 [R/OL]. (2020-10-20) [2022-10-10]. https://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf.
⑤ Gartner Research. Invest Implications: Forecast Analysis: Remote Workers Forecast, Worldwide. https://www.gartner.com/en/documents/3989492.

Independence research study found that “15.5 million American workers currently describe themselves as digital nomads, an increase of 42% from 2020 and 112% from the pre-pandemic year of 2019.” It also found that “the number of digital nomads with a traditional job increased by 42% in 2021, growing from 6.3 million in 2020 to 10.2 million in 2021.”[①] The prevalence of flexible work and digital nomads will inevitably change the structure of the labor force, diversifying and expanding the career paths open to talent and also allowing them to “side hustle”.

From the perspective of employees, Gen Z and millennials, who grew up with the Internet and information technology, will occupy most of the emerging roles. For them, having a career means more than just a reliable source of income and is an essential channel for establishing personal values. In this sense, they place more value on the freedom granted by a job than previous generations. A survey of Chinese employees in emerging roles shows high job satisfaction among employees, with 61% of the respondents saying that they were "relatively satisfied" or "very satisfied" with their new careers, and 70% saying they were "more optimistic" or "very optimistic" about their careers.[②] It is expected that more young global professionals will become more interested in the intangible elements of companies, such as corporate values, work-life balance, and so on, and more will be inclined to choose new career paths that are conducive to personal growth.

① Digital nomads defy a single definition, yet all choose to combine working remotely and traveling for various reasons and lengths of time. MBO Partners. Digital Nomads: Advancing the Next Way of Working. [R/OL]. (2021-9-25) [2022-10-9]. https://www.mbopartners.com/state-of-independence/2021-digital-nomads-research-brief/.
② Zhongqi, Deng. Xiang, Cheng. Yu, Zhang. “The Development and Job Satisfaction from New Occupations in China—Based on a Micro Survey Data of Enterprises and Workers ”. Economic Perspectives, 2021(12):52-71.

Chapter 3: Policy Trends and Global Talent Flows

Today, talent flows across borders are a normal part of globalization, and talent inflows have become increasingly significant in the economic growth and industrial development of a number of countries. Therefore, many countries have introduced policies to attract talent and encourage them to settle, work, and create businesses that drive local socio-economic development. COVID-19 has resulted in a more multi-polar, regionalized, and digitalized world, and the competition for talent has further intensified in the course of economic recovery. Thus, many countries have adopted targeted policies and measures to seek increased and improved inflows of talent in this new global context.

Increasingly Intense Competition for High-level Talent

The United States: Reforming H-1B Visas to Attract Highly Skilled and High-income Talent in STEM Fields

In July 2019, the U.S. House of Representatives voted overwhelmingly to pass the Fairness for High-Skilled Immigrants Act of 2019, which aimed to eliminate the original occupational immigration country quotas, was meant to benefit U.S. technology companies by absorbing large amounts of talent from China and India and accelerate the process for international workers on temporary occupational visas (H-1B) to obtain U.S. permanent resident status. In 2020, there were 128,508 applications for U.S. H-1B visas, and 124,983 were issued, marking a significant decrease compared to 2019 numbers (191,987 applications and 188,123 visas issued), a decrease of 33.56% in the number of visas issued.[①②] In January 2021, the U.S. Department of Homeland

① U.S. Department of State-Bureau of Consular Affairs. NIV Workload by Visa Category (FY 2019, 2020) [R/OL]. (2022-01-26) [2021-12-01] https://travel.state.gov/content/dam/visas/Statistics/Non-Immigrant-Statistics/NIVWorkload/FY2020NIVWorkloadbyVisaCategory.pdf. p.1.
② Scott Meeks. U.S. Nonimmigrant Admissions Annual Flow Report (FY 2020). [R/OL]. (2022-01-26) [2021-10-24] https://www.dhs.gov/sites/default/files/publications/immigration-statistics/yearbook/2020/21_1004_plcy_nonimmigrant_fy2020.pdf.

Security (DHS) made significant changes to the H-1B visa, replacing the original draw method with a visa selection method that gives preference to highly skilled and high-earning individuals. This corresponds to an increase in visa issuance rates,[①] as shown in data released by the U.S. Citizenship and Immigration Services (USCIS) in October 2021 that indicated the H-1B visa approval rate reached a peak of 97.3% over the past decade, far exceeding the H-1B visa approval rate under the Trump administration. In 2021, USCIS received 308,613 H-1B petitions for the year ahead, and ultimately approved 87,500 petitions based on the cap. In July 2021 and November 2021, USCIS added 27,717 and 16,753 petitions respectively. Final FY2022 total approvals reached 131,970, an approval rate of nearly 42%.[②]

The U.S. supplements its welcome of STEM talent with preferential immigration policies. In January 2022, the Department of Homeland Security revised the U.S. Citizenship and Immigration Services (USCIS) Policy Manual Guidance to ensure that professionals were able to apply for permanent residency.[③] This guidance states that the National Interest Waiver (NIW) applies to a significant number of STEM professionals and entrepreneurs. In other words, their employers or proxy applicants do not have to prove that other Americans are unable to perform the work performed by the applicant. And the Immigration and Nationality Act (INA) claims that an employer can file an immigration petition for an employee with exceptional abilities or an advanced degree. USCIS can also waive the relative requirement of job opportunities and allow immigrants who work in the national interest to apply for themselves without an employer. Obtaining a National Interest Waiver (NIW) means easier application and approval of green cards and shorter waiting periods.

As for international students with professional skills, the U.S. government allows a much longer period for them to find a position, which ensures a smooth transition into the U.S. labor market for talented international students. In January 2022, the Biden Administration announced 22 new programs of study classified as STEM to attract a large number of people in professional fields to stay and work in the United States. These include data science, data analytics, financial analysis, business analytics, data

① Priyanka Sangani, ET Bureau. "H-1B visa approvals surge to 97% in fiscal 2021". [EB/OL]. (2022-01-26) [2021-12-23] https://economictimes.indiatimes.com/nri/work/h-1b-visa-approvals-surge-to-97-in-fiscal-2021/articleshow/88436088.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst.
② Ogletree Deakins. "USCIS Publishes FY 2023 H-1B Cap Registration Statistics". [EB/OL]. (2022-08-25) [2022-04-26] https://ogletree.com/insights/uscis-publishes-fy-2023-h-1b-cap-registration-statistics/#:~:text=For%20the%20FY%202022%20H,selection%2C%E2%80%9D%20the%20agency%20reported.
③ U.S. Citizenship and Immigration Services. "USCIS Updates Guidance on National Interest Waivers". [EB/OL]. (2022-01-21) [2022-10-08]. https://www.uscis.gov/newsroom/alerts/uscis-updates-guidance-on-national-interest-waivers.

visualization, industrial and organizational psychology, social sciences, and other non-traditional STEM disciplines, which shows the demand for high-end talent in these programs for U.S. socio-economic development. Students studying in these programs will also be granted an OPT period of three years.[①]

Table 3.1 2022 designated STEM programs by USCIS

Bioenergy	Geography and Environmental Studies
Forestry	Mathematical Economics
Forest Resources Production and Management	Mathematics and Atmospheric/Oceanic Science
Human-Centered Technology Design	Data Science
Cloud Computing	Data Analytics
Anthrozoology	Business Analytics
Climate Science	Data Visualization
Earth Systems Science	Financial Analytics
Economics and Computer Science	Data Analytics
Environmental Geosciences	Industrial and Organizational Psychology
Geobiology	Social Sciences

Source: U.S. Department of Homeland Security.

China: Creating a Comparative Advantage in International Competition for Talent

Over the past decade, China has been striving to opening up to talent with a strategy of "attracting regional talent first, followed by those farther afield" has been established. China has gradually transitioned from the world's largest talent outflow country to a major talent return country and has become a global talent center that integrates talent, innovation, and creative enterprises.

In March 2015, the "CPC Central Committee and the State Council Notice on Deepening the Reform of Institutional Mechanisms to Accelerate the Implementation

① U.S. Department of Homeland Security. "DHS Expands Opportunities in U.S. for STEM Professionals". [EB/OL]. (2022-01-26) [2022-1-21] https://www.dhs.gov/news/2022/01/21/dhs-expands-opportunities-us-stem-professionals.

of the Innovation-driven Development Strategy" proposed to implement a more competitive system to attract talent, speed up the passage of legislation on managing permanent residence of foreigners, standardize and liberalize requirements for permanent residence permits for skilled personnel, and explore the establishment of a permanent residence permit for skilled personnel. In February 2016, the General Office of the Central Government and the General Office of the State Council issued "Opinions on Strengthening the Management of Permanent Residence Services for Foreigners" and introduced more than 140 supporting policies. Reform of institutional mechanism shows an intensive innovation and breakthrough, accompanied by the optimization and upgrade of management for foreign talent.

In February 2017, the Chinese government implemented the "Reform Program for the Facilitation of Permanent Residence Permits for Foreigners", which changed the previous residence permits into a residence identity card, which would have the same functions as identity cards used by Chinese nationals. This shows the government's effort to further assimilate foreigners into the Chinese society.

On April 1, 2017, China issued the "Notice of the State Administration of Foreign Experts Affairs on Issuing the Service Guide to the Foreigner's Work Permit in China" for foreigners working in China.①

In March 2018, to strengthen the administration of migration and entry-exit procedures, the Chinese government restructured previous departments and established the National Immigration Administration, which also serves as the Exit-Entry Administration, and is under the Ministry of Public Security, to strengthen the management and services for international migrants.②

From July 2015 to May 2017, China's Ministry of Public Security introduced immigration policies to support foreign innovative entrepreneurship by global talents in Shanghai, Beijing, Fujian, and other provinces. In July 2019, the National Immigration Administration implemented 12 immigration and entry/exit facilitation policies nationwide to promote the establishment of Free Trade Zones.③ This included five key policies, the first of which focused on foreign talent with significant and outstanding contributions in their fields, which were of specifically needed in China, allowing them to apply for permanent residency. Second, foreigners who have worked

① Huiyao, Wang. Lv, Miao. Jinlian, Zheng. Introduction to international talent science [M]. Beijing: China Labor Society Security Publishing House. 2020: 153.
② Jing, Lin. International Migration Authority established [N]. Beijing Evening News, 2018-04-03.
③ The State Administration of Immigration promotes the replication of 12 immigration and entry/exit facilitation policies nationwide to promote the construction of the Free Trade Zone. See http://www.gov.cn/xinwen/2019-07/17/content_5410623.htm.

consecutively in China for four years, residing within China for at least six months each year, and those whose annual wage income and annual personal income tax payments reach certain standards are allowed to apply for permanent residence in China. Third, foreigners who have a doctoral degree or have worked in China for four consecutive years in key development regions and have resided in China for at least six months each year can apply for permanent residence in China. Fourth, highly skilled foreigners, including experts and scholars, high-level management and professional technical personnel, and members of innovative entrepreneurship teams introduced into key development fields and industries can apply for multiple visas or residence permits valid for five years or less. Fifth, foreign students who have graduated from internationally renowned universities are allowed to apply for permanent residence in China within two years after graduation.

The Central Committee Conference on Talent held in September 2021 and the "Report of the 20th National Congress of the Communist Party of China" held in October 2022 both emphasized "science and technology as our primary productive force, talent as our primary resource and innovation as our primary driver of growth". China "will move faster to build world hubs for talent and innovation, promote better distribution and balanced development of talent across regions", and "strive to build up our comparative strengths in global competition for talent". China will also "increase international personnel exchanges and make the best use of talent of all types to fully harness their potential".[①]

Japan: Visas for "Highly Skilled Professionals" and the "Point-based System"

In April 2015, Japan's Immigration Control and Refugee Recognition Act was amended to create "Highly Skilled Professional" visas to better attract highly skilled professionals through a point-based system. This system divided applicants into three categories, namely "advanced academic research activities", "advanced specialized/technical activities" and "advanced business and management activities". "Depending on the nature of their activities, points are allocated according to academic background, employment background, and annual income. In order to promote the

① Xinhua. "Full text Full text of the report to the 20th National Congress of the Communist Party of China". China Daily. https://www.chinadaily.com.cn/a/202210/25/WS6357e484a310fd2b29e7e7de.html

acceptance of highly skilled foreign professionals to Japan, preferential immigration treatment will be granted if they score 70 points or higher". Those who scored above 70 points will be allowed to apply for a Highly Skilled Professional (i) visa, which is valid for 5 years, and can be made permanent after 3 years of holding the visa.[①] Since 2017, Japan has made a series of policy changes to open the door to permanent residency for highly skilled professionals around the world. It adjusted its point-based system to lower the qualification threshold for workers with specified skills and expanded the scope of specified fields. The required length of stay before applying for permanent residency in Japan was also shortened from 5 years to 3 years for applicants whose points were no less than 70, and to 1 year for those with 80 or more points. As of December 2019, Japan has approved a total of 21,347 foreign highly skilled professionals, achieving the goal of introducing 20,000 highly skilled professionals by the end of 2022 as proposed in the 2017 Growth Strategies ahead of time.[②]

The United Kingdom: Reforming Visa Applications to Attract Talent and Overseas Students

To attract more highly skilled talent and drive innovation in the UK, former Prime Minister Boris Johnson announced a visa reform policy in November 2019, which included "abolishing the cap on numbers under the Tier 1 Exceptional Talent Visas, removing the need to hold an employment offer before arriving, and ensuring dependents have full access to the labor market".[③] In January 2020, the UK Home Office launched the Global Talent Visa (GTV), replacing the original Tier 1 Exceptional Talent Visa, as a new program to attract people who have an internationally recognized record of exceptional and outstanding achievement in an eligible field. The visa allows leaders and potential leaders in the fields of academia and research, arts and culture, and digital technology to work in the UK for up to five years without the need for a sponsor or known job offer, inheriting the previous "fast-track route"[④] for visa

① Immigration Services Agency of Japan. "What is the point-based system for highly skilled professionals?". https://www.isa.go.jp/en/publications/materials/newimmiact_3_system_index.html.
② Ministry of Justice, Number of certifications (cumulative) under the advanced human resources point system, https://www.moj.go.jp/isa/content/930003771.pdf.
③ Home Office. "PM sets out vision to cement UK as a science superpower". https://www.gov.uk/government/news/pm-sets-out-vision-to-cement-uk-as-a-science-superpower. Accessed April 16, 2020.
④ "Fast Track" means that applicants for talent visas who are employed in "special positions" designated by the UK government will be given priority in the recognition process with a letter from their employer.

applications. In addition, the UK Research and Innovation Agency (UKRI) has been added to the list of designated bodies to review applicants' qualifications to meet the UK's need for innovative research talent. The new visa holders can be divided into three categories, which are "UKRI Recognized Sponsored Projects", "Industry Leaders" and "Industry Newcomers". The first two types are eligible to apply for permanent residency after 3 years in the UK, and the latter after 5 years. At the same time, the UK has introduced a new Start-up Visa and an Innovator Visa to replace the Entrepreneur Visa for potential entrepreneurs. The new visa significantly lowers the investment threshold for immigrant investors, but sets higher requirements for applicants' English language skills, reflecting the country's expectation that entrepreneurial talent will be better integrated into the local area so that they can better implement their entrepreneurial plans and serve the UK's socio-economic development.

To further gain an advantage in the global battle for international students, the UK's new Student Visa system, which has simplified the visa application process and allows students to submit their visa applications six months before the start of the academic year, replaced the original Tier 4 visa as of October 5, 2020.[①] Meanwhile, the Post-Study-Work Visa (PSW) which allows international students to work in the UK after graduating from their undergraduate and graduate programs was officially been resumed in the summer of 2021. From July 1, 2021, international students who have successfully completed an undergraduate or master's degree will be able to apply for a PSW through a new application route to work freely and legally in the UK for two years after graduation, while those who have completed a Ph.D. will be able to apply for a three-year graduate visa.[②]

To attract more skilled professionals to work in the UK, the UK government also established the Office for Talent to recruit top scientists around the world in 2020.[③] Correspondingly, the application for High Potential Individual (HPI) visa for recent graduates from the world's top universities became open to the public on May 30, 2022. This visa gives people permission to stay in the country for at least two years and allows applicants to work in most jobs without proof of employment to retain visa eligibility.[④]

①British Council. Student Visa. [EB/OL] [2021-11-30]. https://study-uk.britishcouncil.org/zn-hans/moving-uk/student-visas.
② Home Office. "Graduate route to open to international students on 1 July 2021". [EB/OL]. (2021-03-04) [2021-11-30]. https://www.gov.uk/government/news/graduate-route-to-open-to-international-students-on-1-july-2021.
③ Department for Business, Energy & Industrial Strategy. "Government fires up R&D across the country to cement the UK as science superpower". [EB/OL]. (2020-07-01) [2021-11-30]. https://www.gov.uk/government/news/government-fires-up-rd-across-the-country-to-cement-the-uk-as-science-superpower.
④ Home Office. "High Potential Individual (HPI) visa: global universities list". (2022-05-06) [2022-10-08]. https://www.gov.uk/government/publications/high-potential-individual-visa-global-universities-list.

The UK government's introduction of new immigration policies has greatly enhanced the willingness of international students and highly skilled professionals to study and work in the UK.

The European Union: Easing Migration Restrictions and Introducing Entrepreneurial Visas to Attract Highly Skilled and Innovative Talent

The EU relaxed its migration policies on non-EU researchers and students and introduced a residence permit for those seeking jobs and entrepreneurship in the region in the hope to attract more highly skilled and innovative professionals. In 2016, the EU issued 'Directive 2016/801'(2016), requiring its member states to simplify and streamline the existing provisions for non-EU nationals entering the region "for the purposes of research, study, training, voluntary service, pupil exchange schemes or educational projects and au pairing".① Most EU member states also amended their policies from 2018 to 2019 accordingly. Spain and Portugal have simplified the application process for temporary residence permits and work visas for non-EU students pursuing higher education in their countries, while Sweden has proposed "new rules to strengthen Sweden's attractiveness and competitiveness for highly educated and sought-after foreign citizens who can contribute with their knowledge".②

The EU has also lowered the threshold when applying for the EU Blue Card which has increased its attractiveness. In December 2005, the European Commission proposed the "Policy Plan on Legal Migration", which highlighted the vitality of highly skilled professionals and introduced relevant strategies to better serve them. The Commission hoped to elevate the attractiveness of the Blue Card and make it an equivalent to the green card in the United States, making it an effective instrument in promoting higher qualified migration. The Blue Card program was officially approved by the Council of the European Union and was given two years for its implementation with 'Directive 2009/50'(2009), significantly boosting the EU's attractiveness among highly qualified immigrants and laying the foundation for EU migration policies. In September 2021,

① European Union. Directive 2016/801. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016L0801&from=FR
② Ministry of Education and Research, Government Offices of Sweden. "New rules on residence permits for research and higher education studies".

the European Parliament's legislative resolution repealed the 2009 Directive and replaced it with 'Directive 2021/1883' (2021) which identifies the need for a comprehensive labor migration policy and for better integration of migrants, implementing measures to facilitate the admission of highly qualified third-country workers.[①] The Blue Card system will hopefully increase the EU's competitiveness in attracting global talent and help resolve its labor shortage problems caused by aging populations.

Spain first introduced the Entrepreneur Visa in 2013 to attract foreigners to the country and "undertake an innovative, entrepreneurial activity of particular economic interest for Spain".[②] European countries like Italy, Denmark, and France have followed suit and introduced policies and incentives to attract third-country nationals to invest, set up, or join tech start-ups with designated visa schemes. These schemes usually don't require financing in place but focus more on the innovative potential of a tech start-up. The French Tech Visa for Founders, for example, requires minimum logistics to apply: founders only need to submit a certificate for assessing the nature of their project and have admission to an incubator or accelerator supported by one of the 13 French Tech Capitals.

Increasing the Inflow of Skilled Personnel or Labor Migrants

Pressured by aging populations, low fertility rates, and a lack of working-age residents, many developed countries have tried to meet the demand for workers in domestic labor markets by opening channels for migrant labor (including short-term labor and permanent skilled immigrants) by revising labor immigration laws and regulations and reforming labor visa systems.

① The European Union Parliament and the Council. 'Directive 2021/1883' (2021). https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021L1883&from=EN.
② Spanish Government and Ministry of Foreign Affairs, European Union and Cooperation. "Entrepreneur visa". https://www.exteriores.gob.es/Consulados/londres/en/ServiciosConsulares/Paginas/Consular/Visado-para-emprendedor.aspx.

Japan: New "Specified Skilled Worker (i) and Specified Skilled Worker (ii)" Visas to Support Labor Market

Japan has long absorbed a larger number of technical trainees from China and Southeast Asia through the "technical internship" category to fulfill the labor gap in medium to low-end industries. As of June 2019, the total number of technical trainees in Japan reached 367,700, an increase of 90.9% from 2015, making this group the second largest group of foreigners after permanent residents.① However, with an increasingly aging population and a low fertility rate that is difficult to curb, Japan's long-term demand for labor is widening, and the "technical internship" program is limited by the skill level of the workforce and the length of internship (maximum of five years, and the interns must leave Japan upon completion of the internship), which cannot meet the corresponding demand. In April 2019, Japan implemented a new version of the *Immigration Control and Refugee Recognition Law Amendment Act* to speed up the introduction of foreign labor by establishing new "Specified Skilled Worker (i) and Specified Skilled Worker (ii)" visas for 14 types of industries, including agriculture, construction, and shipbuilding, where there are labor shortages, to speed up the introduction of foreign workers.② Among them, the "Specified Skilled Worker (i)" is for foreigners who "have a certain level of industry knowledge and skills" or have completed the "Specified Skilled Worker (ii)" training, while "Specified Skilled Worker (ii)" is for foreigners who have been tested and determined to be "skilled" (currently limited to the construction and shipbuilding industries). It is expected that approximately 50,000 foreign workers will be admitted through this visa each year. The maximum period of stay for "Specified Skilled Worker (i)" is five years, and no family members are allowed to enter the country, while holders of "Specified Skilled Worker (ii)" visas are eligible for indefinite renewal (i.e. permanent residence), and their spouses and children could obtain residency status. In addition, with the aim of further enhancing the attractiveness of foreign workers coming to Japan for employment, Japan has established and revised the *Foreigner Assistance Program* and other mechanisms to improve the legal rights and interests of foreign workers in various aspects such as employee management and treatment for workers and provided necessary information

① Ministry of Justice of Japan. Number of foreign residents by the end of June 2019. http://www.moj.go.jp/nyuukokukanri/kouhou/nyuukokukanri04_00083.html. Accessed April 16, 2020.
② Ministry of Foreign Affairs of Japan. “What is the SSW?”. https://www.mofa.go.jp/mofaj/ca/fna/ssw/us/overview/. Accessed August 29, 2022.

support and translation assistance for foreigners working in Japan as well.[①]

EU: Revising Laws to Address Labor Shortages

In response to the labor market shortage within the EU, the EU Commission presented an updated legal migration program to its member states on April 27, 2022. The program was aimed at addressing several existing challenges including the recovery of the EU economy after COVID-19, labor market shortages in the EU, and the EU's transition to a green and digital economy.[②]

Germany, for its part, has responded to the labor shortage by amending relevant laws. According to the German Federal Employment Agency's (Bundesagentur für Arbeit, BA) Institute for Employment Research, there were approximately 1.414 million job vacancies in the German labor market as of the fourth quarter of 2019. While a survey conducted by the Association of German Chambers of Commerce and Industry (Deutscher Industrie und Handelskammertag, DIHK) in 2018 indicated that more than half of German companies were threatened by labor shortages. The *German Skilled Immigration Act*, which came into force in early 2020, is designed to ease restrictions on immigration applications for non-EU skilled workers and bring in foreigners of working age to address labor shortages in related industries, bringing an estimated 25,000 professional and skilled people to Germany each year. The Act expands the possibilities for qualified professionals to work in Germany especially skilled workers from non-EU countries with professional, non-academic training, who will be more likely to work in Germany. The conditions for qualified professionals have been relaxed to those who have completed a training course of at least two years and have a college degree or vocational training qualification, which also makes it easier for them to enter the labor market. As long as they have an employment contract or a specific job offer with a recognized German qualification, they can apply for immigration and work in the relevant occupation for which they are qualified. Anyone with a work contract or an offer of employment can apply for a residence permit valid for four years or for the same period as the employment contract, after which the applicant can apply for a permanent residence permit in Germany. The Act also provides a "fast pass" for

① OECD iLibrary. International Migration Outlook (2020). https://www.oecd-ilibrary.org/sites/b140958b-en/index.html?itemId=/content/component/b140958b-en#:~:text=In%202018%2C%20Japan%20received%20115,)%20and%200.1%25%20humanitarian%20migrants. Accessed August 29, 2022.
② European Commission. "Questions and Answers – Attracting skills and talent to the EU". (2022-4-27) [2022-10-10]. https://ec.europa.eu/commission/presscorner/detail/en/QANDA_22_2655.

personnel in special professions that are in short supply, such as doctors and certified nurses, who do not need to apply for a professional qualification in Germany, but only need to prove that they have at least 5 years of experience in a relevant field to apply for immigration to Germany. Non-EU nationals who have not yet secured employment but have basic German language skills and are economically self-sufficient are entitled to stay in Germany for six months on the grounds of seeking employment, regardless of their skill level. At the same time, Germany also sends migrant labor to specific industries through bilateral agreements with migrant-sending countries. For example, BA and the German Agency for International Cooperation (Gesellschaft für Internationale Zusammenarbeit, GIZ) jointly launched the *Triple Win Project*, a cooperation agreement with Bosnia and Herzegovina, Serbia, Philippines, Tunisia, and Vietnam to recruit nurse practitioners or nurse trainees from these five countries to meet their demand for nursing staff.

Canada: Specialized Immigration Program to Ease Labor Shortages in Specific Regions

To meet the employment needs of each province, Canada has a separate "Provincial Nominee" program in the immigration plan, and each province will revise its nomination requirements in terms of language proficiency and professional capabilities based on its own development needs. In Canada's 2019-2021 three-year million immigration plan, the provincial nominee quota amounts to 200,000 people (excluding Quebec's skilled and business immigration program), of which 67,800 and 71,300 are expected to arrive in 2020 and 2021 respectively, while 68,600 have already arrived in 2019.[①] The actual number of people admitted in 2020 was only 38,700 due to the impact of the Covid-19 pandemic.[②] In 2017, the Canadian government launched the *Atlantic Immigration Pilot Program* (AIPP) for the provinces of Nova Scotia, New Brunswick, Newfoundland and Labrador, and Prince Edward Island, attracting skilled immigrant workers and international graduates to work in these four provinces. In March 2019, Immigration Canada announced an extension of the pilot until December

① Immigration, Refugees and Citizenship Canada. Annual Report to Parliament on Immigration (2020). [EB/OL]. (2019-12-31) [2022-10-08]. https://www.canada.ca/en/immigration-refugees-citizenship/corporate/publications-manuals/annual-report-parliament-immigration-2020.html#immigration2019.
② Immigration, Refugees and Citizenship Canada. Annual Report to Parliament on Immigration (2021). [EB/OL]. (2021-12-31) [2022-10-08]. https://www.canada.ca/en/immigration-refugees-citizenship/corporate/publications-manuals/annual-report-parliament-immigration-2021.html#highlights.

2021, with a corresponding quota increase from 1,000 in 2018 to 4,000 in 2020. In 2021, Immigration Canada announced that it would make the program permanent as of January 1, 2022, raising the quota to 6,000.[①] Based on the success of the AIPP, Canada introduced the *Rural and Northern Immigrant Pilot* (RNIP) program in 2019, which focuses on directing skilled immigrant workers and international graduates to work and settle in 11 designated remote communities to alleviate local labor shortages. To accelerate the growth of immigrants in remote communities, the Canadian government has opened separate approval channels for the AIPP and RNIP, with approval times ranging from about six months to one year, which is significantly shorter than other immigration programs.

Australia: Expanding Channels for Labor Migration in Specific Regions

In recent years, Australia has integrated its migration intake program with its population planning by encouraging new migrants to take up employment and settle in "Regional Australia" in an attempt to deal with labor shortages.[②] For instance, Australia's *2019-2020 Migration Program* allocates more places for state/territory nominated and employer-sponsored visa categories while reducing the upper limit of migrants. In addition to setting aside 24,968 nominations for each state/territory, this program also reserves another 25,000 places specifically for remote areas.[③] In April 2019, the Australian Department of Home Affairs announced that graduates who held a higher education diploma issued by a remote education institution, or graduate temporary work visa (Class 485) holders residing in a remote area can apply to extend their Class 485 visa for one year, provided graduates remain working and living within the remote area during the extension period. In November 2019, Australia reformed the Regional Migrant Visa (the aforementioned 25,000 earmarked places) with the

① Immigration, Refugees and Citizenship Canada, Speaking Notes for the Honorable Sean Fraser, Minister of Immigration, Refugees and Citizenship: Announcement of the Permanent Atlantic Immigration Program. [EB/OL]. (2021-12-17) [2022-10-08]. https://www.canada.ca/en/immigration-refugees-citizenship/news/2021/12/speaking-notes-for-the-honourable-sean-fraser-minister-of-immigration-refugees-and-citizenship.html.

② Regional Australia refers to all areas of Australia except Canberra, Sydney, Newcastle, Central Coast, Wollongong, Brisbane, Gold Coast, Melbourne, and Perth metropolitan areas. Source: Australian Department of Home Affairs: Working Holiday Maker (WHM) program. https://immi.homeaffairs.gov.au/visas/getting-a-visa/visa-listing/work-holiday-417/specified-work. Accessed March 31, 2020.

③ Australian Department of Home Affairs. "Planning Australia's 2020-21 Migration Program". https://www.homeaffairs.gov.au/reports-and-pubs/files/discussion-paper-planning-australias-migration-program-2020-21.pdf. Accessed March 31, 2020.

introduction of the new Skilled Work Regional Visa (Class 491) and the Skilled Employer Sponsored Regional Visa (Class 494), which replaced the original Class 489 and 187 visas respectively. Compared to the previous visas, these new visas will be valid for five years and will extend the definition of "Regional Australia" to all of Australia except for the metropolitan areas of Sydney, Melbourne, and Brisbane. Correspondingly, the new visa also increases the criteria for transforming to permanent resident status (e.g. the lower limit of residing and working in Regional Australia is increased from 2 years to 3 years.), with the aim of maximizing the economic benefits that the migrant workforce brings to remote areas.

New Zealand: Expanding Channels for Labor Migration in Specific Industries

In August 2022, the New Zealand Immigration Minister announced the establishment of a dedicated working group to expedite the processing of work visas and tourist visas. At the same time, several new immigration policies were introduced to bring in migrant workers, notably: (1) Exemptions from median wage requirements in fields such as aged care, construction and infrastructure, meat processing, seafood, the seasonal ski industry, and the adventure tourism industry to facilitate the introduction of more migrant workers into the industry.[①] (2) Doubling the quota for the 2022/2023 Working Holiday Scheme visas, which will allow an additional 12,000 working vacation makers to enter New Zealand.[②] (3) Extending the validity of working vacation visas that expire between August 26, 2022, and May 31, 2023, by six months for people already in New Zealand to retain those migrant workers, and to give workers overseas more time to come to New Zealand.[③]

① New Zealand Immigration. “Details of Sector Agreements for specific AEWV occupations announced”. [EB/OL]. (2022-08-21) [2022-10-08]. https://www.immigration.govt.nz/about-us/media-centre/news-notifications/details-of-sector-agreements-for-specific-aewv-occupations-announced.
② New Zealand Immigration. “Changes to Working Holiday Scheme visas announced”. [EB/OL]. (2022-08-21) [2022-10-08]. https://www.immigration.govt.nz/about-us/media-centre/news-notifications/changes-to-working-holiday-scheme-visas-announced.
③ New Zealand Immigration. “Visa extensions and visa conditions”. [EB/OL]. (2022-08-26) [2022-10-08]. https://www.immigration.govt.nz/about-us/covid-19/in-new-zealand/visa-information/visa-extensions-and-visa-conditions.

Chapter 4: Global Talent Flow Governance: Suggestions for Improvement

The Role of International Organizations in Global Talent Flows

Talent Flow Governance in International Organizations

Due to the COVID-19 pandemic, climate change, the Ukraine crisis, and other factors, human mobility, also known as international migration, has become increasingly important in global governance. To solve problems that have arisen in international migration, we must foster continuous international dialogue and seek effective modes of international cooperation to protect the rights and interests of source countries, destination countries, and individual migrant groups. Because of the significant importance of coordination and cooperation at the global level, it is clear that international organizations must play a prominent role in global governance. Firstly, international organizations provide knowledge and material public goods in the process of governing global talent flows. Secondly, international organizations promote cooperation between states, non-state actors, the private sector, and other stakeholders and establish governance partnerships for global talent flows. Thirdly, international organizations can better solve practical problems because of the openness of their platforms and the professionalism of their organizations. Existing global talent flow governance-related organizations mainly focus on the governance of international migration. Furthermore, in addition to traditional intergovernmental international organizations such as the United Nations, the World Bank, and the International Labor Organization, there are also others like the International Organization for Migration, International Center for Migration and Development, and other organizations dealing with migration issues.

The United Nations

Founded in 1945, the United Nations has made two major contributions to international migration. Firstly, it established a normative framework for international migration composed of international conventions to protect the rights of international migrants in terms of human rights, employment, and social service. Secondly, United Nations agencies and the UN specialized agencies, including the International Labor Organization, the United Nations High Commissioner for Refugees, the Human Rights Council, the World Bank, the World Trade Organization, the World Health Organization, etc., all attach great importance to international immigrants within the scope of their respective functions and powers, forming the institutional framework of United Nations system to cope with the global immigration.①

International Labor Organization

The International Labor Organization (ILO), headquartered in Geneva, is a specialized United Nations agency dealing with labor issues related to international labor standards. The ILO was established as an affiliate of the League of Nations in 1919 under the *Treaty of Versailles* and in 1946 became the first specialized body under the United Nations. Its purpose is to promote full employment and higher living standards, promote industrial cooperation, improve working conditions, expand social security, ensure the occupational safety and health of workers, achieve lasting peace in the world and to uphold social justice.② In terms of the flow of human resources, the ILO has made three major contributions. First, it has established minimum standards for protecting the rights and interests of migrant workers through agreements and conventions. Second, it has carried out research and practice in the field of labor migration, and has provided information consultation, training, and technical assistance to member states; Third, it has built a platform to promote dialogue and cooperation on international migration governance. The International Labor Organization (ILO) launched the Fair Recruitment Initiative in 2014 and started its second phase in 2021 to improve fair recruitment by strengthening, communicating and disseminating relevant national and international recruitment processes, and reforming relative laws and policies, and at the same time to ensure effective supervision on cross-border recruitment and prevent human trafficking and forced labor by promoting fair business

① United Nations. About the UN. Available at: https://www.un.org/en/about-us.
② According to the International Labor Organization's website (http://www.ilo.org/global/about-the-ilo/lang - en/index. HTM)

practices, empowering and protecting workers' rights.[①] In addition to building a platform for dialogue, the ILO is also implementing concrete projects to strengthen the capacity of member states in governing international labor migration. For example, in order to help labor immigrants in the International Labor Corridor of South and Southeast Asia, the ILO implemented the Governance of Labour Migration in South and South-East Asia (GOALS) project in Pakistan for a period of three years (2020-2023). To improve the overall governance of labor migration at regional and national levels in South and South-East Asia, the ILO reformed the Bilateral Labour Agreement (BLA), supported the local government in developing the South Asian qualifications reference framework and promoted the introduction of a national skills passport in Pakistan.[②]

International Organization for Migration

The International Organization for Migration (IOM), formerly known as the Intergovernmental Committee on Migration in Europe (ICEM), changed its name in 1989 and is headquartered in Geneva, Switzerland.[③] The International Organization for Migration regularly publishes the *World Migration Report*, which studies the current situation of international migration as well as key issues, and has become the most comprehensive and authoritative report on international migration. The IOM mainly conducts migration governance in four areas: migration and development, promotion, regulation, and forced migration. Its categories of migration governance can be divided into five areas. First, implementing a plan for migration transport. Second, providing health and medical services for migrants. Third, building national immigration governance capacity. Fourth, paying attention to female immigrants. Fifth, implementing return and integration programs for highly skilled migrants to support economic and social development in developing countries.

As one of the key international organizations in solving problems in international migration, the IOM has continuously carried out many activities in the specific field of global talent flow in recent years, highlighting its role as an actor in global governance.

One step that the IOM made was to promote the *Global Compact for Safe, Orderly, and Regular Migration,* adopted by the UN General Assembly in 2018. This compact

① International Labor Organization, Fair Recruitment Initiative, https://www.ilo.org/global/topics/fair-recruitment/fri/lang--en/index.htm,[2022-9-30].
② International Labor Organization, Governance of Labour Migration in South and South-East Asia (GOALS). https://www.ilo.org/islamabad/whatwedo/projects/WCMS_839320/lang--en/index.htm,[2022-9-30].
③ International Organization for Migration. http://www.iom.int/.

aims to support international cooperation in the governance of international migration so that the United Nations and other stakeholders can introduce policies for integrating migrants into local communities and reduce the fragmentation between migrant groups and local communities.

The second step is to help migrants cope with the COVID-19 pandemic. In 2020, the IOM provided more than 109,000 COVID-19 tests worldwide, and more than 2 million people benefited from COVID-19-related site upgrades in camp-like settings.[①] In 2021, the IOM adopted a new COVID-19 Strategic Response and Recovery Plan, which targeted four strategic objectives: service continuity, public health measures, COVID-19 impact, and ease of information, in order to reduce the impact of COVID-19 on migrants' work and life.

Third, the IOM has tried to build a global policy network. In December 2020, the global policy network was launched to provide clear guidance on the use of migrant workers.[②] It can also reduce the risks faced by migrant workers in cross-border recruitment, encourage the formation of cooperation mechanisms between jurisdictions, and promote countries to build a safe and orderly labor migration order.

Fourth, the IOM unites government, civil society, and the private sector to create a flagship program, Ethical Recruitment for Migrant Workers. This project establishes ethical recruitment practices by raising awareness and capacity, giving a voice and empowerment to migrant workers, establishing regulatory mechanisms in line with international standards, voluntary certification of private recruitment agencies, and enhancing stakeholder dialogue. On July 30, 2021, the IOM launched a partnership with the Sustainable Hospitality Alliance to address unethical recruitment by combating the exploitation of migrant workers and banning forced labor.[③]

Other International Organizations

There are also other intergovernmental organizations that are widely involved in global migration governance. Since 2006, the World Bank has been issuing *Migration and Development Reports* two to three times annually, which provide in-depth analyses on international migrant remittances, migration of highly skilled workers, determinants

① International Organization for Migration. Annual Reports 2022. 326.
② International Organization for Migration. "IOM Launches Global Policy Network to Promote Ethical Recruitment". https://www.iom.int/news/iom-launches-global-policy-network-promote-ethical-recruitment,
③ International Organization for Migration. "IOM and Sustainable Hospitality Alliance launch multi-year partnership to promote ethical recruitment, protect migrant workers in tourism". https://www.iom.int/news/iom-and-sustainable-hospitality-alliance-launch-multi-year-partnership-promote-ethical-recruitment-protect-migrant-workers-tourism. (2021-7-30), [2022-9-28].

of migration, short-term migration of population, social protection and management, trade, and the relationship between foreign direct investment and migration.[①] From the perspective of global economics, it analyzes the effect and influence of international migration from both the macro and micro levels. It reveals the positive contribution of international migration and remittance to the global economy. The Organization for Economic Co-operation and Development (OECD) maintains a relatively comprehensive migration database and issues in-depth migration research reports, providing research materials and policy-making resources for immigration researchers and immigration policymakers.[②]

In addition, the World Trade Organization and International Red Cross also contribute to migration management. In the Doha Round of WTO negotiations in 2001, trade in services became a subject of discussion, and the global mobility of people is the service provider, which means that the WTO also began to participate in the governance of migration issues, especially migrant workers. The WTO has always been an important participant in international forums like the Global Forum of Migration and Development. At the same time, the International Committee of the Red Cross has focused on illegal immigration and refugees.

Governance of Global Talent Flows in Regional Cooperation Organizations

The United Nations and its subordinate organizations are all global international organizations. For this reason, international organizations are more likely to get rid of the influence brought by national interests in participating in global migration governance to make real efforts to improve the welfare of international migrants. However, in the process of implementation, it is the attitude and policy of the country concerned (including origin countries, transit countries, or destination countries) that ultimately affects any solution to an immigration issue, while individual countries first and foremost consider their national interests. In contrast, regional cooperation can significantly reflect the differences in migration governance and is more conducive to the formation of effective, mutually beneficial, and sustainable solutions to regional migration issues while considering the interests of the countries involved.

European Commission. The commission's Department of Migration and Home

① World Bank. http://www.worldbank.org/
② The Organization for Economic Cooperation and Development. http://www.oecd.org/.

Affairs is responsible for managing the international movement of talent, which is currently one of the Commission's 10 Priorities.[①] The EU attaches great importance to the issue of international migration and guarantees the free movement and security of people is also one of the fundamental purposes of the EU. Through *the Treaty on European Union*, the *Amsterdam Treaty*, the *Treaty of Nice, and the Treaty of Lisbon*, the EU legally allows migrants who live or hold work visas in EU member states to have the right of free movement within the EU.

Association of Southeast Asian Nations. The Association of Southeast Asian Nations (ASEAN) has played an important role in immigration governance in the Asia-Pacific region. The practice of the ASEAN in the international flow of human resources mainly focuses on the governance of migrant labor. In 2007, the *ASEAN Declaration on the Protection and Promotion of the Rights of Labour Migrants,* also known as the Cebu Declaration, was adopted at the 12th ASEAN Leaders' Meeting, and recognizes the contribution of migrant workers to ASEAN member states. It takes measures to protect the rights of migrant workers, prevent abuse and human trafficking and demonstrate ASEAN's commitment to the governance of migrant workers.[②] In 2008, to oversee the implementation of the Declaration, ASEAN established the ASEAN Committee on the Implementation of the ASEAN Declaration on the Protection and Promotion of the Rights of Migrant Workers Promotion of the Rights of Migrant Workers (ACMW). ACMW has developed a series of projects and activities, covering the safe migration of migrants, combating human trafficking and other aspects, so as to effectively improve the relevant understanding and policy implementation ability of ASEAN governments to protect and promote the rights of migrant workers. So far, ACMW has held the ASEAN Forum on Migrant Labour (AFML) every year since 2008 and has held 14 sessions until 2021. It successfully establishes an open platform that discusses the issues faced by governments, trade unions, employers, and stakeholders in the international labor sector and effectively promotes the work process related to labor governance in ASEAN.

① For more information about the migration of the European commission and the interior department, see http://ec.europa.eu/dgs/home-affairs/index_en.htm.
② ASEAN. “Statement of the Establishment of the ASEAN Committee on the Implementation of the ASEAN Declaration on the Protection and Promotion of the Rights of Migrant Workers”. https://asean.org/statement-of-the-establishment-of-the-asean-committee-on-the-implementation-of-the-asean-declaration-on-the-protection-and-promotion-of-the-rights-of-migrant-workers/ (2022-7-6) [2022-9-30].

Major Issues in the Governance of Global Talent Flows

Current mechanisms of global governance are not yet fully capable of dealing with the increasingly fierce global competition for talent, which has resulted in a dearth of regulation in the field of global talent migration. In the long term, it may result in problems like vicious competition and under-uses of talent and adversely affect sustainable development. Key challenges faced by global talent governance are outlined below.

First, a global consensus on international talent cooperation has yet to be formed. With the ever-expanding reach of globalization, the division of labor and cooperation worldwide is increasingly prevalent. Innovation is often more easily inspired by talented individuals from multicultural backgrounds. However, it is believed that competition and cooperation are two sides of the same coin in global talent migration. And from the overall perspective of human development, cooperation is extremely important and should not be overlooked.

Second, there is a lack of mechanisms and platforms for the promotion of dialogue and coordination on talent migration at the global level. There are many differences between the talent policies of individual countries, mutual recognition of professional qualifications and other factors that must be resolved through dialogue and coordination. That said, such coordinating mechanisms exist within the European Union and the Association of Southeast Asians Nations (ASEAN) and China and the European Union have launched the EU-China Dialogue on Migration and Mobility Support Project. But those mechanisms are restricted to the regional level, lack stability, and are often limited to relevant governmental agencies without covering other stakeholders in the whole society.

Third, there is a lack of data and information on global talent migration. Despite considerable growth in global talent migration, classified data on the precise scale, gender, age, and professions of individuals are relatively lacking, which may hinder policymakers from developing accurate policies and make it difficult for researchers to develop in-depth analyses. In recent years, this gap has been filled by the rise of global workplace social networking platforms, whose hundreds of millions of users make it possible to access talent data easily. However, it should be noted that their status as business organizations may bring many restrictions on the use of data.

There is no doubt that the flow of talent has made a significant contribution to

global economic development. However, compared to other economic factors, such as international trade and financial management, the global governance of talent flow has been greatly neglected. We must admit that although global migration, especially of highly skilled talent, has driven the development of science and technology, at the same time, it has also brought new challenges to global governance.

The Alliance of Global Talent Organizations: An Innovative Response to International Governance of Global Talent Flow

While there has been significant progress in both theoretical work and practical application regarding global talent flow and its governance, the focus of the world's established international organizations on immigration, such as the International Organization for Migration (IOM) and the International Labor Organization (ILO), has not been on talent, with the former focusing on refugee issues and the latter on the protection of workers' rights. While the new era has seen an increasing number of transnationally mobile talent, which has become an important group for immigrants. However, many existing challenges still impede global talent mobility, limiting the potential contribution that these talent resources could make toward economic and social prospects. This points to the need for an international organization to facilitate discussion and address a range of crucial issues, including how to better leverage the role of globally mobile talent, how to ensure and regulate reasonable talent mobility, and how to balance the interests of sending and receiving countries and find ways to resolve current and future problems.

The Purpose of the Alliance of Global Talent Organizations

Alliance of Global Talent Organizations is committed to promoting international talent mobility, strengthening extensive talent exchanges and cooperation, providing basic protections for talent, actionable service intelligence for developing countries, and reinforcing talent cooperation in key fields with developed countries, thereby improving the facilitation of talent mobility and promoting talent cultivation. Specifically, AGTO has the following goals: [①]

① Wang, Huiyao, and Alistair Michie, editors. Consensus or Conflict? China and Globalization in the 21st Century. Springer, 2021:201.

The first goal is to create an environment of fair competition for dialogue in international talent exchanges, which includes promoting and supporting conversations related to regional and global talent, improving understanding of the opportunities and challenges in international talent exchanges, recognizing, and developing effective policy measures, and identifying comprehensive methodologies and measures that can support international cooperation.

The second goal is to improve the welfare of people around the world and encourage the international sharing of talent. Constrained by the level of economic and social development, current international talent resources vary greatly between countries. This requires the establishment of talent sharing and exchange platforms, in which governments, non-governmental organizations, other stakeholders, and talent themselves could receive professional and technical support on improving human capital.

The third goal is to protect the legal rights and interests of international talent. Under the principles of fairness, equality, and justification, it is committed to actively guiding and regulating the legal rights and interests of international talent and defending the basic rights and claims of talent.

How the Alliance of Global Talent Organizations Works[①]

As a platform for international talent exchange and cooperation, the Alliance of Global Talent Organizations is committed to forming a series of cooperation mechanisms, building platforms, gathering information, serving the development and cooperation of talent, and making contributions to effectively guiding international talent exchange, mobility, employment, certification, and residence. There are four main aspects of how the Alliance works:

Reaching Consensus. The organization is committed to talent mobility governance and promoting the international community to reach a general consensus on expanding international talent exchange and talent cooperation for mutual benefits.

Mechanism building. The organization is committed to building a mechanism for dialogue, coordination, and cooperation of global talent. First, discuss all aspects of global talent cooperation and development by holding global talent conferences and

① Part of this section is from Huiyao, Wang. Lv, Miao. Jinlian, Zheng. Introduction to International Talent Studies. [M]. Beijing: China Labor Society Security Publishing House. 2020:24.

summits. Second, to promote mutual recognition of academic qualifications and professional qualification certification, to serve the global development of talent. Third, through the development of the service mechanism, especially the collecting and sharing of information, the organization will evaluate and guide the talent policies as well as the development of talent in each country and region, promoting the orderly flow of talent.

Platform building. Firstly, as an information platform, the organization can play the role of an official website and media platform to collect information on talent supply and demand and release crucial guidance about talent development. Secondly, as an academic platform, it releases annual reports on world talent and industries. Thirdly, as a data platform, it helps to build a database of world talent resources, statistics and service evaluation. Fourthly, as an event platform, it forms a talent community and holds annual meetings, forums, and other activities. Fifthly, as a cooperation platform, it strengthens the communication and cooperation among members, cities and countries about the development and flow of talent. Finally, as a training platform, it carries out training programs related to talent development to improve the level of talent management and the talent service capacity of governments and institutions.

Information integration. Using big data establishes an information base for global talent flows and provides data support for the overall concepts, approaches and methods of global talent governance based on the basis of information analysis.

Practical Experiences of the Alliance of Global Talent Organizations

Since 2016, the Center for China and Globalization (CCG) has conducted in-depth research on the Alliance of Global Talent Organizations (AGTO) initiative, organized several expert debates in Beijing, Hong Kong, Washington, and Paris, and presented AGTO on global platforms such as Paris Peace Forum and the Economic Cooperation Organization (ECO) Conference, to continuously push this alliance from concept to implementation. CCG has held several online seminars on global talent flow since the outbreak of the pandemic, inviting university presidents, the president of the International Labor Organization (ILO), representatives of the United Nations International Organization for Migration (IOM), the president of the Association of Executive Search Consultants (AESC), and representatives of human resource

companies to discuss the governance and cooperation of global talent mobility. At the third Paris Peace Forum, in November 2020, the Alliance of Global Talent Organizations (AGTO) was inaugurated.

Suggestions on Promoting an Orderly Flow of Global Talent

Fully Understand the Significance of Talent Flows

The desire for a better life is a common aspiration for people all over the world. That is why the transnational and cross-border flows of talent have never stopped. At the same time, the flow of talent brings more diverse factors for economic and social development among countries and injects more innovative genes into their development of science and technology. Thus, the competition for talented immigrants and international students is increasingly intense. Previous studies and experts from all walks of life have emphasized the contribution of talent flow to innovation and entrepreneurship. The pace of talent flow did not even stop when faced with extreme international situations like the COVID-19 pandemic, not to mention a constantly evolving global climate with talk of decoupling. Therefore, under the current international situation, promoting the flow of talent, especially the continuous flow of immigrant talent and international students, and restoring channels of talent exchange and cooperation in various ways and methods will have great significance in reducing misunderstandings, promoting people-to-people exchanges, expanding consensus on cooperation, and enhancing high-quality development.

Promote High-level Opening-up to Facilitate Talent Flows

Despite experiencing profound changes unseen in a century, opening up is a constant theme in today's world and comprehensive development cannot be achieved without a more open world. Opening up enhances our mutual strengths and the more open we are, the more comprehensive our strengths and the more resilient economy will be. Openness is good medicine for breaking down mobility barriers and reducing misunderstanding, and it is essential for promoting common prosperity. China has always pursued a proactive opening-up strategy that expands the scope of opening-up.

Opening to the outside world at a comprehensive and high level will make the flow of talent freer and more convenient. With a more open mind, continuing to deepen the opening-up system of talent flow, promoting deeper exchange and greater mutual trust are the fundamental elements of the orderly flow of global talent.

Expand the Talent Exchange and Dialogue through the China International Import Expo

The China International Import Expo (CIIE) is built on China's idea of openness, stimulating new dynamics in international free trade, exploring a new path for China's opening up, and showing how China is opening its door wider to the outside world. The CIIE is not only a global platform for openness and cooperation in the import and export flow of goods and commodities but also a public platform that promotes cooperation in driving global talent flows. CIIE's role as a public product is improving and the expo currently has four major platforms, which include international procurement, investment promotion, people-to-people exchange and openness and cooperation, serving as a global platform for cultural integration and an open platform for expanding the circle of friends for international cooperation and promoting talent exchange.

Similarly, the Hongqiao Forum has been a voice of multilateral cooperation, becoming an international platform for talent where people can exchange ideas and build consensus. In the future, the Hongqiao Forum will expand to promote cooperation on global talent and create a dialogue through the Forum on Global Talent Flow and Development, promoting international talent exchanges, pushing forward joint consultation and contribution for shared benefits, promoting the achievement of a global consensus on talent development and exchange, and enhancing the fairness, synergy and inclusiveness of talent mobility.

Diversification and Digitization of Talent Mobility Governance Platforms

From the perspective of regional talent mobility, the future pattern of global talent flows may shift from mainly flowing to developed countries to being more diversified, including flows to emerging economies and developing countries. In terms of domain mobility, the development of the digital economy has driven changes in work patterns,

accelerating the digital transformation of talent and, thus, the cross-domain mobility of talent. Talent migration across regions involves most countries, and its global governance must reflect the will and interests of those countries. While talent mobility across domains is bound to drive transformations in how talent is managed. Therefore, how talent mobility is governed should also be innovative. Firstly, global talent flows involve different countries, domains, and individuals. In this case, the global talent flow governance platform should focus on fairness, and the participating subjects should be more diversified. Secondly, the role of rule leadership will be more prominent, and the lack of rules will lead to disorderly competition, exacerbating inequality brought about by talent mobility. Thirdly, modes of governance will be more digitized. For example, countries can facilitate the integration of international talent into their own environment and improve the competitiveness of attracting international talent by promoting digital connectivity and digitizing public services. Another example is the increase of digital nomads in the future, who will be able to move across borders without leaving their homes, which may need the consideration of tools such as digital visas to guarantee their orderly movement, etc.

Appendix: Theories and Models Related to Global Talent Competitiveness

An Overview of Theories and Evaluations of National Competitiveness[①]

Competitiveness is a very complex socio-economic phenomenon, which can be examined at different levels and from different perspectives under various hypothetical conditions. Competitiveness-related research can be carried out in fields including economics, management, talent studies and all their sub-disciplines. However, due to different assumptions and analytical tools, the elements of competitiveness that are of interest also differ, thus forming different schools of thought in competitiveness research.

National Competitiveness Theories

Competitiveness Theories around the World

Professor Michael E. Porter of the Harvard Business School applied his theory of domestic competitive advantage to international competition in his book *The Competitive Advantage of Nations* and constructed the famous Diamond Model (also known as the Theory of National Competitive Advantage of Industries). Porter equates the competitive advantage of a nation to that of its industry and enterprises. He believes that a country's competitive advantage in the international market is driven by the competitive advantage of its leading industry, and the competitive advantage of the leading industry draws from the competitiveness of enterprises. The competitive advantage of enterprises is created and sustained with their domestic economic environment, the most essential of which are factor conditions, demand factors, related and supporting industries, strategy, structure, and rivalry of enterprise, and so on.

① This section is partly cited from Zhaoming, Gui. Huiyao, Wang. Report on China's Regional Talent Competitiveness. No.1 [M]. Social Science Literature Press, 2013: 46-49.

The Comparative Evaluation of National Competitiveness

A system globally accepted and widely used in evaluating the competitiveness of countries is the IMD World Competitiveness Yearbook (WCY) proposed by the International Institute for Management Development (IMD) in Lausanne, Switzerland and the Global Competitiveness Report conducted by the World Economic Forum (WEF).

The World Competitiveness Yearbook is an annual report on the economic competitiveness of countries published yearly since 1989 by IMD in Lausanne, Switzerland. The Yearbook provides extensive coverage of 64 economies, choosing indicators based on the availability of comparable international statistics and its collaboration with local partner institutes. The World Competitiveness Yearbook argues that competition among countries is reflected in their ability to create an environment for enterprises to continuously increase their competitiveness, including effective structures, institutions, and policies. In this sense, national competitiveness and enterprise competitiveness are two interdependent concepts, and the international competitiveness of a country (or region) is its ability to help enterprises remain competitive, which lays the theoretical foundation for conducting national competitiveness evaluations. The World Competitiveness Yearbook believes the development of international competitiveness is mainly determined by several important factors, such as economic performance, government efficiency, business efficiency, infrastructure and so on. The Yearbook ranks national competitiveness based on 333 competitiveness criteria selected on a basis of comprehensive research using economic literature, international, national, and regional sources and feedback from the business community, government agencies and academics. The criteria are revised and updated on a regular basis as new theories, research and data become available and as the global economy evolves. ①

The Global Competitiveness Report is a study report published by the World Economic Forum on the evaluation of national economic development and policies. Since 2004, the report has ranked the competitiveness of countries based on the Global Competitiveness Index, which is itself based on the latest theoretical and empirical research. The report compares and analyzes key competitiveness indicators of 141 countries and regions. It consists of more than 110 variables, two-thirds of which come

① IMD. World Competitiveness Ranking. [2022-09-21]. https://www.imd.org/centers/world-competitiveness-center/rankings/world-competitiveness/.

from surveys and one-third from publicly available sources such as the United Nations. These indicators are organized into twelve pillars,[①] each of which represents an area considered to be an important determinant of competitiveness.[②]

Article Review of the Studies on Competitiveness Evaluation

There are various methods that can be used when evaluating competitiveness, which can be divided into single indicator evaluation and indicator group evaluation methods depending on the number of indicators. Since competitiveness is a complex phenomenon, a single index method cannot fully reflect the condition of regional competitiveness, and the indicator group evaluation method is usually preferred. Standard evaluation methods include the synthetical index method, cluster analysis, factor analysis, analytic hierarchy process, etc.

Competitiveness evaluation methods can be further divided into four major categories based on attributes, which include qualitative, classifying, ranking, and operational.

Qualitative Evaluation Methods

There are several qualitative evaluation methods including factor analysis and connotation analysis among others. The factor analysis method generally approaches the subject from the outside working inward, starting from the most superficial and easily perceived attributes, and gradually going deeper into the more internal attributes and factors. The connotation analysis method combines qualitative and quantitative analyses, focusing on the internal factors affecting regional competitiveness. Expert opinions or questionnaires can supplement analysis and decision-making for some factors that are difficult to quantify.

Classifying Evaluation Methods

Classifying evaluation methods include fuzzy comprehensive evaluation, cluster analysis and matter-element among others. The fuzzy comprehensive evaluation

① These pillars are namely institutions, proper infrastructure, stable macroeconomic framework, good health and primary education, higher education and training, efficient product market, efficient labor market, developed financial market, ability to use existing technologies, domestic and international market size, production of new and different goods using the most complex production processes, innovation.
② The World Economic Forum. Global Competitiveness Report. [2022-09-21]. https://www.weforum.org/reports/how-to-end-a-decade-of-lost-productivity-growth.

method includes strict quantitative characterization and qualitative descriptions of fuzzy phenomena that are difficult to analyze quantitatively. The combination of both are usually used in regional competitiveness evaluation.

The cluster analysis method is used to study classification, combining contemporary taxonomy and multivariate analysis. When evaluating regional competitiveness, the competitiveness status of different regions can be classified, and the relative strength of regional competitiveness can be determined.

The matter-element method applies theories from physics to the study of systems, establishes concepts of system matter-elements, compatible systems, and incompatible systems, and proposes relevant methods to transform incompatible systems into compatible systems, which can be used to deal with problems in incompatible systems through system matter-element transformation.

Ranking Evaluation Methods

Ranking evaluation methods include comprehensive index analysis, principal component analysis, factor analysis, set pair analysis, the analytic hierarchy process, and efficacy coefficient method.

Comprehensive index analysis is a comprehensive index evaluation method. The method chooses certain qualitative and quantitative indicators to achieve unified quantitative comparison after dimensionless processing, to ultimately achieve a specific comprehensive evaluation index.

The principal component analysis method defines several composite indicators that are unrelated to each other and reflects as much as possible the amount of information provided by the original indicators.

Factor analysis assumes that a large number of observed variables have a few hidden dimensions called “common factors” and that most of the total variation of each observation variable can be explained by these common factors. The part that common factors cannot explain is called the “special factor” of the variable. Therefore, all observed variables can generally be expressed as a linear combination of common and special factors, which is called the linear model of factor analysis.

Set pair analysis is a new approach to system analysis, the core idea of which is to consider certainty and uncertainty as one system. In this system, certainty and uncertainty influence, restrict and transform each other under certain conditions, using a definite uncertainty formula that can fully embody its ideas to describe various

uncertainties uniformly, so as to transform the dialectical understanding of uncertainty into a specific mathematical tool.

The analytic hierarchy process (AHP) is a practical method for solving multi-level and multi-criteria decision-making problems, which provides an objective mathematical method to deal with the inevitable subjective and personal preference effects of individual or group decision-making.

The efficacy coefficient method is an evaluation method that determines the satisfaction value and the null value for each indicator according to the principle of multi-objective programming. It then uses the null value as the lower limit to calculate the power coefficient of each index through the power function, and finally weights the comprehensive index.

Operational Evaluation Methods

The benchmarking method not only evaluates and judges the level of competitiveness, identifying the main reasons for competitiveness, it also provides pathways for improving competitiveness. The benchmarking method follows specific steps: First, determine the subject, object, and content of benchmarking. Second, form a working group and determine the work plan. Third, collect information and conduct surveys. Fourth, analyze and compare, find out the gaps, determine the best method, clarify the direction of improvement, and formulate an implementation plan. Fifth, organize the implementation, compare the implementation results with best practices, then revise and improve these based on the comparison in order to achieve the best outcome in terms of practical application and exceed the benchmark level.

Content and Evaluation of Talent Competitiveness

Talent competitiveness is a relative concept obtained through comparison, which is a comprehensive concept. At the same time, it is also a dynamic concept that changes along with the economic and social environment. Talent competitiveness is also a differential concept that adapts to changes in subjects - different countries, different regions in the same country, different industries (sectors) in the same region, and different enterprises (organizations) in the same industry (sector). Talent competitiveness is mainly composed of three parts: (1) practical talent competitiveness; (2) potential and expected talent competitiveness; (3) the ability to transform the

potential talent competitiveness into actual competitive advantage. Talent competitiveness is a comprehensive internal capability, existing in contrast to competitors and influenced by the external environment, while also incorporating various other capabilities.

The evaluation of talent competitiveness is an important topic in the study of talent competitiveness. It not only explores the nature, origins, basic factors, and interrelationships of competitiveness in economics and management, but also to shows the status of competitiveness statistically through the use of quantitative indicators.

Talent competitiveness indicators can be divided into two main categories: effectiveness indicators and attribution indicators. The former reflects the results of the competition as with the final performance of competitiveness, while the latter reflects the causes or determinants of competitiveness. Talent competitiveness evaluation applies the methods based in economics, management, and statistics to reflect the true state of national and regional competitiveness in relative terms and make realistic evaluations and analyses.

Current well-known talent competitiveness indices include the Global Talent Competitiveness Index and the World Talent Ranking among others. These indices study the talent competitiveness of different countries from varied perspectives.

Global Talent Competitiveness Index, GTCI

The Global Talent Competitiveness Index (GTCI), first launched in 2013, is an annual benchmark report published by the European Institute of Business Administration (INSEAD) and its partners. It measures and ranks countries and cities by their performance in talent development, attraction, and retention, in order to assess the talent competitiveness of countries around the world and advice governments and enterprises on how to enhance talent competitiveness.

The GTCI is a comprehensive index that uses the Input-Output Model, which consists of six categories of indicators (four on the input side and two on the output side). The Talent Competitiveness Input sub-index is composed of four pillars describing the policies, resources, and efforts that a particular country can harness to foster its talent competitiveness. The Talent Empowerment pillar reflects the extent to which the regulatory and business environment creates a favorable climate for talent to develop and thrive. Talent Attraction, Talent Development, and Talent Retainment pillars focus respectively on what countries are doing to attract, grow, and retain talent.

The Input sub-index is the simple arithmetic average of the scores registered on these four pillars. The Output sub-index is mainly measured through two pillars—Vocational and Technical Skills and Global Knowledge Skills. Mid-level skills, labeled Vocational and Technical Skills, describe skills that have a technical or professional base acquired through vocational or professional training and experience. The economic impact of Vocational and Technical Skills is mainly measured by labor productivity, the relationship of pay to productivity, and mid-value export products dependent on these skills. High-level skills, labeled Global Knowledge Skills, deal with knowledge workers in professional, managerial, or leadership roles that require creativity and problem-solving. Their economic impact is mainly evaluated by indicators of innovation, entrepreneurship, and high-value export products dependent on these skills.

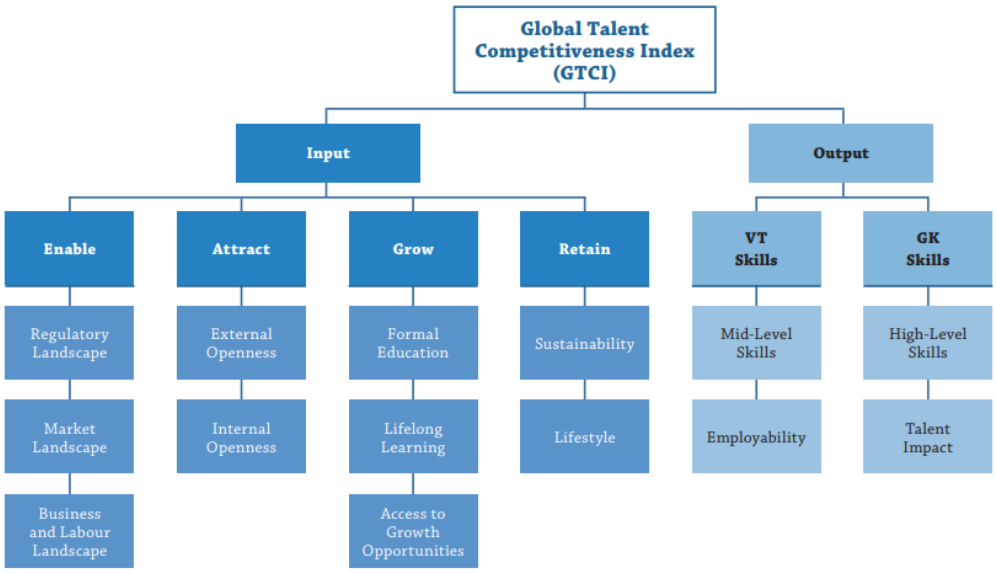

Figure 5.1 2021 GTCI structural model

Source: INSEAD. The Global Talent Competitiveness Index 2021. https://www.insead.edu/sites/default/files/assets/dept/fr/gtci/GTCI-2021-Report.pdf.

The GTCI model is continually refined. For example, six indicators were dropped in the 2021 edition from the 2020 model, while four new indicators were added including labor rights, formal and non-formal studies, youth inclusion, and skills matching. The number of indicators was increased to 68, resulting in a more robust index.[①]

① INSEAD Research & Learning Hub. The Global Talent Competitiveness Index (2021). https://www.insead.edu/sites/default/files/assets/dept/fr/gtci/GTCI-2021-Report.pdf.

World Talent Ranking

The World Talent Ranking, published by the International Institute for Management Development (IMD) in Lausanne, Switzerland, evaluates 64 economies around the world in terms of their ability to nurture local human resources and attract outstanding talent, with statistics provided by UNESCO, OECD and partner institutions in the participating countries and regions.

The IMD World Talent Ranking is based on three main factors: the Investment and Development Factor, which reflects the size of public investment in education and the quality of the education system; the Appeal Factor, which reflects the ability to retain local talent and attract foreign talent; and the Readiness Factor, which reflects the ability to exist talent to meet the demand of the market. The criteria data of the IMD World Talent Ranking is normalized using the same STD (Standardized Score) methodology adopted in the IMD World Competitiveness Yearbook. The overall talent ranking is constructed by aggregating all factors and presenting each factor and overall ranking from a score of 0-100.

Table 5.1 Composition of evaluation indicators of the World Talent Rankings

Factor	Criteria
Investment & Development	Total public expenditure on education
	Total public expenditure on education per student
	Pupil-teacher ratio (primary education)
	Pupil-teacher ratio (secondary education)
	Apprenticeships
	Employee training
	Female labor force
	Health infrastructure
Appeal	Cost-of-living index
	Attracting and retaining talents
	Worker motivation
	Brain drains
	Quality of life
	Foreign highly skilled personnel
	Remuneration in services professions
	Remuneration of management
	Collected personal income tax rate
	Justice
	Exposure to particle pollution

Continued table 5.1

Readiness	Labor force growth
	Skilled labor
	Finance skills
	International experience
	Competent senior managers
	Primary and secondary education
	Graduates in Sciences
	University education
	Management education
	Language skills
	Student mobility inbound
	Educational assessment - PISA

Source: IMD. World Talent Ranking.

Building a National Talent Competitiveness Evaluation System

Guiding Theories in the Evaluation System

As a country relies on talent to drive its economy and technology, the question of how to attract, cultivate, sustain talent, and foster an environment to develop the enthusiasm of talent is of strategic importance for all countries. Similarly, the basis and most fundamental factor affecting a country's talent competitiveness is its ability to cultivate, attract, compete, possess, apply, and transform talent.

From a developmental perspective, the relationship between resources and environment is based on the relationship between the internal and external factors that play a role in the development.

Factors such as economic status, education platform, science and technology platform, social environments, and cultural traditions in talent development have a considerable and sometimes decisive impact on the flow and aggregation of talent. Talent flows between countries are essentially movement between different systems, mechanisms, and policy environments and between economic, scientific, social, and humanistic environments. Talent tends to gather in places where all these factors are beneficial to the full use of their intelligence and long-term development. Therefore, when establishing external competitiveness indicators for a country’s talent

competitiveness, these indicators will be weighted significantly higher.

Basic Principles in Building an Evaluation System

Scientific

In creating a system for talent competitiveness evaluation system, this report has utilized the latest talent development research, fully integrating the existing evaluation system and setting indicators closely related to talent characteristics, so that the evaluation system scientifically and holistically reflects the essence of talent competitiveness.

Quantifiable

Although systems, mechanisms, and policy environment directly affect national talent competitiveness, evaluating such factors is highly subjective, being affected by the subjective consciousness, cognitive ability and even personality, likes and dislikes of the evaluator, thus making it difficult to obtain objective and fair evaluations. Therefore, when building the evaluation system used in this report, we did not use qualitative evaluation results obtained through questionnaires and other similar methods. All indicators are based on data released by the World Bank and other institutions as well as quantitative results calculated based on the data collected.

Comparable

Given that "talent competitiveness" is highly dependent on context, this report also indexes different indicators of national talent competitiveness, making the subjects comparable.

Structure of the Evaluation System

Based on the principles mentioned above, we designed the structure for a system dedicated to evaluating talent competitiveness for individual countries. We divided talent competitiveness in terms an internal factor that reflects talent competitiveness, an external factor that influences talent competitiveness, and efficiency level factors that characterize the current status of talent competitiveness.

The internal factor of talent competitiveness reflects the core competitiveness of a

country's talent pool in terms of entrepreneurship and innovation. Internal competitiveness factors include talent quantity and talent quality, which indicate the potential and expected talent competitiveness of a region. The external competitiveness factor affects the role of a country's internal talent competitiveness. It reflects external influences (work, living conditions, living environment, etc.) on innovation and entrepreneurship in a country, which can have a positive (stimulating, promoting) or negative (depressing, restricting) impact on a country's core competitiveness. External competitiveness factors include talent input indicators, living and working environment indicators, among others. This reflects a country's ability to transform potential talent competitiveness into real-life scenarios and gain a competitive edge. A realistic expression of a country's talent competitiveness is reflected by its talent output, which indicates the extent to which a country's talent contributes to its socioeconomic development.

Evaluation Model of Talent Competitiveness

Developing a Model

Based on the structure of this talent competitiveness evaluation system, we have developed the following competitiveness evaluation model:

$$J_i = \sum B_k * Q_k$$

Where J_i is the talent competitiveness of different countries, B_k represents the indicators (indices) for the first and second tiers, etc., and Q_k is the weight of the indicators (indices) respectively corresponding to the first and second tiers. *k* is the number of indicators of the first and second tiers respectively. In this report, the number of indicators of the first-tier *k* is fixed at 5 (corresponding to the structure of the talent competitiveness evaluation system); while the number of indicators of the second tier is determined according to the different characteristics of the indicators at different levels.

Determining Weight

Different indicators have varying effects when using the evaluation index system we constructed before. In order to truly reflect the importance of different indicators in the evaluation index system, different weight coefficients are assigned to each indicator. The weight of indicators subjectively and objectively reflects the relative importance of each indicator, and reasonable weight coefficients are crucial in maintaining

accuracy in the evaluation of national talent competitiveness.

For now, we are using collective advice from authoritative sources to decide the weighing of each indicator, such as the Delphi Method, the Analytic Hierarchy Process and Grey Relational Analysis.

The Analytic Hierarchy Process (AHP) is a multi-criteria decision-making method combining qualitative and quantitative analysis, which was proposed by American scholars led by T. L. Satty in the 1970s. The method is widely deployed when deciding the weighing of indicators because it provides vigorous analysis of the importance of each indicator and performs thorough mathematical processing with a high degree of credibility, and organically combines subjective analysis and objective calculation.

After determining the structure of the indicator system, the report established indicator weighting in the regional talent competitiveness evaluation index system using the Analytic Hierarchy Process (AHP). Our research group gathered nine experts to compare primary and secondary indicators side by side, using a scale of 1-9 to quantify the qualitative judgments of the experts, and constructed several pairwise comparative judgment matrices. In the single hierarchical ranking of these comparative matrices, we calculated the respective weight coefficients (accurate to two decimal places) and performed consistency tests. As the calculation process is relatively tedious and would take up too much space, it has not been included in this report.

Principles and Methods of Data Processing

We use indexing for all data processing in this report. There are different dimensions to the data for each talent competitiveness indicator, so it is necessary to integrate these indicators and conduct dimensionless processing of the index.

The following is the formula used for indexing:

$$X_i = \frac{x_i}{x_{0i}}$$

X_i is the index, x_i is the original value, and x_{0i} is the maximum value.

About CCG and Our Team

About CCG

The Center for China and Globalization (CCG) is China's leading non-governmental think tank, the only Chinese think tank to be granted Special Consultative Status by the United Nations, and the first Chinese non-governmental think tank to become one of the world's top 100 think tanks in the University of Pennsylvania's Global Think Tank Index. CCG strives to connect China and the world through research and communication in areas such as global governance, trade and economy, migration, and globalization.

In 2020, CCG launched the Global Young Leaders Dialogue (GYLD). The program is widely acclaimed by the international youth community and has significantly increased youth engagement in achieving the Sustainable Development Goals (SDGs) with multiple detailed schemes. In 2021, Chinese President Xi Jinping responded to a letter written by GYLD participants, recognizing the success of the program, and encouraging young people to take a lead in shaping the future of China.

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We are also indebted to the support from Secretariat of Hongqiao International Economic Forum and several scholars and experts working on global migration. Due to a hectic timeline, minor mistakes in this report might be inevitable. Please feel free to reach out with feedbacks and suggestions—they will be of immense help for our future projects.

全球人才流动趋势与发展报告（2022）

GLOBAL TALENT FLOW: TRENDS AND PROSPECTS

本报告汇聚了全球化智库（CCG）研究人员及人才领域专家学者近年来的最新研究成果，通过综合研究、数据分析、政策分析，多方位展现全球人才流动的最新情况。本报告旨在推动开放，促进流动。第一章分析世界主要国家的人才竞争力指数，第二章分析全球人才流动的现状与趋势，第三章分析全球人才流动政策动向，第四章分析全球人才流动治理情况，并提出相关建议。本报告希望建立全球人才合作对话机制，促进国际人才交流，为全球人才流动提供治理方案与国际公共产品，推动共商共建共享共赢，促进达成人才发展与交流的全球共识，提升人才流动的公平性、协同性、包容性。

This report brings together the latest research results from researchers and experts of the Center for China and Globalization (CCG) in the field of talent development, examining the current state of global talent mobility through comprehensive research, data analysis, policy analysis, and other analytical perspectives, based in principles of openness and the free flow of human resources. The first chapter looks at the talent competitiveness index of major countries. The second chapter looks into the current state of and trends in global talent mobility. The third chapter dives into the migration policies of major countries and their potential effects on global talent flows. The fourth chapter closes the report by providing concrete advice for managing global talent flows. We hope to leverage this report to foster a global dialogue on international talent exchange and that it will serve as a global public good and as an aid to international talent governance. We are confident that facilitating the international flow of talent can effectively create a fairer, more cooperative, and inclusive international environment where we can reach a consensus on talent development and exchange and promote a shared future with win-win results.

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