全球新宏观背景下的养老金配置

英国保诚集团

国际金融危机后，全球经济运行呈现出低增长、低利率、高负债、高风险等特征。新冠肺炎疫情进一步强化上述特征，全球经济金融加速累积。在新宏观背景下，发达国家二三支柱养老金配置面临长期收益率走低和波动性加大的挑战，呈现出高风险资产配置比重和投资决策个人参与度上升等新动向。我国养老金资产由全国社保基金和三支柱养老金构成，理论可配置规模超过 13 万亿元，其配置呈现出投资专业性和市场化水平明显提升，投资受限较多，投资收益率差异较大等特征。面临实体经济回报率下降、资本市场适配性不足、投资决策权过于集中等挑战，进一步优化养老金配置，要不断放宽投资范围和比例限制，推动股市健康发展，提升养老金管理机构能力，增加养老金参与者选择权和决策权。

一、新冠肺炎疫情下全球经济金融运行呈现出低增长、低利率、高债务、高风险等特征

（一）全球经济增长动力不足

结构性问题拉低经济增长潜力。一是老龄化加速，劳动力供给放缓，人口抚养负担持续加重。2019 年，全球人口抚养比达到 13.9%，较 2008 年上升

2.5 个百分点；美国、欧盟人口抚养比分别超过 20%、30%，中国、印度等新兴经济体人口抚养比也在快速上升。二是受人口年龄结构、服务业比重持续提高、全球贸易和外商直接投资增长放缓抑制技术扩散等因素影响，全球劳动生产率增速出现广泛的显著下滑。根据世界银行的测算，全球劳动生产率增速从 2007 年峰值 2.8%一度下滑至 2016 年的低谷 1.4%。虽然略有恢复，2018 年仍低于 2%。发展中国家下滑更为显著。三是受资产价格快速上升，科技创新对劳动力市场不平衡影响等因素影响，全球收入和财富分配格局持续恶化，总需求受到抑制。根据世界不平等研究机构报告，1980 年至 2016 年，1%最富有阶层的收入增长占总增长的 27%，但 50%低收入阶层占比仅 12%。2016 年后该趋势继续保持。四是新兴经济体正逐步成为全球增长的重心，但国际经济治理格局调整滞后制约了其增长潜力，进而拉低全球增长。

经济增长的区域支撑动力不足。美国方面，尽管疫情前美国实现了持续时间最长的经济扩张，但受研发投入增速放缓、制造业萎缩等影响，全要素生产率（TFP）增速放缓。2010-2019 年，美国全要素生产率平均增速为 0.8%，较 1990-2007 年平均增速低 0.3 个百分点。同时，长期低利率使得货币当局有回归正常货币政策的需求，这也将在近中期影响其经济复苏进程。欧洲方面，欧元区已处“超高龄”社会，研发投入不足，劳动力市场僵化，全要素生产率迟迟未能恢复。统一货币与独立财政的矛盾又对欧洲宏观调控手段和

效率构成制约。新兴经济体方面，经济增长势头有所回落，增长前景分化、波动加剧。印度经济增长潜力与制约因素并存，结构性改革缓慢拖累潜力释放；巴西俄罗斯等资源型新兴经济体经济结构单一，受全球需求疲软和大宗商品价格波动影响大；阿根廷土耳其等脆弱型新兴经济体风险持续累积。

疫情后的新挑战拉低全球经济增长预期。新冠肺炎疫情不仅加剧业已存在的全球结构性问题，还带来全球产业链供应链加速调整等新挑战。2010 年以后，受经济复苏乏力和贸易保护主义等因素影响，全球贸易增速显著放缓。疫情冲击下，主要国家推动产业回流，强调“经济主权”，越来越倾向于构建完整、安全、稳定产业链的倾向，产业链供应链区域化、周边化成为调整方向，全球分工效率降低，技术外溢效应削弱，新兴经济体追赶进程受阻。此外，全球低碳转型可能加速，将对当前全球发展模式带来冲击，新兴经济体发展面临的挑战更大，全球不平等可能进一步加剧。

（二）全球低负利率环境短期内难以扭转

全球利率水平趋势性走低。国际金融危机前，全球利率水平已从 1990 年的 7.9%降至 2008 年的 4.3%。国际金融危机后，主要经济体纷纷采取宽松的货币政策和财政政策，全球利率水平进一步下跌至 2019 年的 2.4%。大部分国家利率水平处于历史低位，欧元区、日本已进入负利率区间，美国、英国、加拿大和澳大利亚接近利率零下限。对于已经触及或接近零下限的经济体而

言，一旦经济遭遇负面冲击或通货紧缩预期加强，零利率甚至负利率政策或将成为政策选项。

低负利率环境短期内难以改变。首先，全球储蓄过剩的结构性因素难以改变。人口老龄化、收入分配不平等和新兴市场高储蓄率等导致全球储蓄上升。与此同时，全球经济增长趋势性下降和相应的投资需求减弱也抬升储蓄率。其次，疫情后全球经济复苏存在较大不确定性，宽松货币政策可能持续较长时间。最后，对金融风险暴露的顾虑和货币政策的依赖，导致利率易降难升。从国际金融危机后美国货币政策正常化的经历看，美国联邦基金利率将利率维持在接近零下限的水平达 7 年之久。

（三）全球高负债特征进一步加剧

疫情暴发前，全球正在经历第四轮债务浪潮（世界银行，2020）。应对疫情的大规模财政救助计划，导致全球债务进一步膨胀。国际清算银行数据显示，2020 年二季度全球非金融部门债务总量为 209.8 万亿美元，较 2019 年底上升 14.1 万亿美元，接近国际金融危机前债务规模的两倍。全球宏观杠杆率达 265.6%，较 2008 年底提高 64.2 个百分点。其中，发达经济体提高 61.8 个百分点，上升至 300.9%，新兴经济体提高 102.9 个百分点，上升至 209.8%。短期内，在低负利率支撑下，发达国家发生债务危机的可能性并不高，宏观杠杆率变化将取决于经济的恢复程度，企业和政府部门债务风险将继续增加，

居民部门债务风险预计有所降低。不过，债务持续膨胀不仅会限制经济动能，还会加剧经济金融脆弱性，并限制应对经济金融风险的政策空间。

（四）全球金融风险点明显增多

美国股市回调风险、企业债务违约风险和公共债务膨胀风险突出。大规模财政货币救助计划推动美股重回并创历史新高，市盈率已超“大萧条”和国际金融危机前的峰值，仅次于 2000 年互联网泡沫时期，经济和股市背离度大幅上升。一旦复苏不及预期，美股面临回调风险，并可能引发较大规模金融动荡。低利率环境下，美国企业债务不断累积。疫情严重冲击企业偿债能力，一旦评级下调，容易导致再融资渠道关闭和债券抛售，引发债券市场风险。此外，疫情救助和经济刺激计划推动公共债务不断扩张，中长期金融风险持续累积。

欧洲主权债务风险比较突出。部分南欧国家主权债务风险居高不下，已构成欧洲重要的系统性金融风险隐患。2019 年希腊、意大利、葡萄牙等南欧国家公共债务率（政府债务/GDP）高达 177%、135%和 118%。疫情冲击下，欧洲深度衰退，多国推出巨额财政救助计划，主权债务问题呈普遍恶化态势。希腊、意大利、葡萄牙公共债务水平在 2020 年又有进一步跳升。在低负利率和疫情冲击下，欧洲银行业风险也在增加，并可能与主权债务风险相叠加。2010 年南欧个别国家爆发债务违约，逐步由外围国家向核心国家蔓延、由政

府部门向银行体系渗透，最终演变为欧债危机和欧元区银行业危机。

新兴经济体债务危机和货币危机风险不容忽视。国际金融危机后，许多新兴经济体的资源依赖特征未得到根本改观。经常账户和财政“双赤字”问题，以及高债务和高外债，加剧经济金融脆弱性。疫情冲击后，全球贸易下滑、大宗商品价格波动、国际资本外流导致新兴经济体风险态势进一步上升。同时，发达国家低负利率推动新兴经济体外债大规模增加。2019 年年底，除中国外的新兴及发展中经济体外债总额从 2009 年的 4.6 万亿美元增长至 8.5 万亿美元。2014 年以后，除中国外的新兴及发展中经济体外债占 GDP 比重超过 40%，超过 20%的国际警戒线。疫情已对新兴及发展中经济体带来严重冲击，国际货币基金组织表示约半数低收入国家和若干新兴市场经济体已经面临或处于债务危机的高风险之中。疫情后，伴随经济复苏受发达经济体货币政策溢出影响，部分脆弱型、资源依赖型国家可能爆发债务危机和货币危机。

二、发达国家养老金体系及其全球新宏观背景下的配置动向

（一）三支柱均衡发展，资产配置以第二三支柱为主

发达国家三支柱呈现均衡发展、分工协作的格局。第一支柱大都扮演管理个人长寿风险的作用，为居民提供终身领取的基本养老待遇，并通过设置不同收入层级的差异化替代率而兼具再分配和社会稳定器职能。第一支柱大都采用现收现付制+待遇确定型的方式，以确保所有居民得到足够的养老保护。

第二支柱主要是为居民提供与收入水平相称的养老收入，帮助居民做好养老的财务安排。企业通常为员工建立养老金账户，和员工一起分摊缴费责任，并用长期积累的资金及投资收益来支持居民的养老支出。与第一支柱不同，第二支柱往往都采用基金积累制+缴费确定型的方式，但也有相当部分国家允许企业出于吸引员工等原因提供基金积累制+待遇确定型的方式。第三支柱主要是与投资者年龄有关的具有养老特征的年金、基金或生存保险等更具个性化的产品，完全由投资者自行购置。第三支柱与其他金融投资品差异不太大，规避个人所得税的制度设计是其第备受欢迎的重要原因。发达国家的养老金投资主要由第二支柱和第三支柱进行，第一支柱主要是结余资金的管理利用，第二和第三支柱通过个性化投资实现生命周期资产管理和个性化资产配置。

（二）投资决策权分散，投资限制较少

在发达国家，第二支柱往往是由企业分别建立的雇主资助的养老基金，养老基金可以依托企业建立但独立于企业财务和运营，也可以依托金融机构建立。这些养老金通常会根据参与者的年龄或退休日期及风险偏好提供不同的投资方案，更容易满足参与者的风险偏好。参与者选定投资方案之后，这些养老基金构建出满足各种不同收益水平和风险偏好的投资基金，采用不同的投资策略和资产组合，从而降低了投资决策集中可能导致的各种风险。由于每位参与者都能根据自身风险偏好和风险承担能力自主选择已知风险的投

资方案，并由养老金管理机构进行专业管理，养老保险基金的风险能够较好地处于预定风险区间，参与者能够较好地在已知预期收益与风险的条件下自负盈亏。这是发达国家很少对第二支柱投资范围进行限定的重要原因。参与者自负盈亏和投资范围限定少，使养老金管理机构更好开展各种金融创新，从而形成资本市场不断成熟和养老金发展的良性循环。

（三）为应对低利率高负债环境而不断进行创新

2008 年国际金融危机以来，发达国家阶段性调整了养老保险的投资策略，加大了对债券、另类投资和新兴市场国家的投资力度，以进一步分散风险和实现高收益。随着利率持续下降，各国不断采取各种措施应对低利率环境下的市场变化，以管理风险和提高收益率。比如，随着股票及衍生证券风险不断加大，各国降低了股票市场的投资份额。比如，随着债券回报率下降，一些债券投资比重较高的国家逐渐降低了比重，但一些债券投资比重较低国家增持了债券以降低风险敞口，从而确保在保持整体风险不变的条件下配置更多较高风险、较高收益资产。比如，提高收益更高发达国家和新兴市场国家证券的投资比重，增加对非上市股权或另类资产的投资。

（四）提高投资决策的个人参与度，降低养老金管理机构的决策风险

在低负利率加大资产风险和分化资产回报的背景下，各国养老金纷纷提升了养老金参与者的参与程度。有的国家引入了更多类型的投资组合，构建

出了目标日期基金和目标风险基金等形式的投资选择，从而更加丰富了参与者的选择。有的国家从开始的以机构投资为主逐渐转向引入更多参与者决策，甚至在一定程度上允许参与者参与投资决策，更好地满足参与者的风险偏好和多元化的投资需求，在提升养老金投资透明度和参与者风险感知度的同时，将决策风险部分由养老金管理机构转移到参与者自身。

三、中国养老金配置现状及当前面临的挑战

（一）中国养老金配置基本特征

中国养老金体系为“1+3”的结构。“1”为社保基金，由中央财政预算拨款、国有资本划转、基金投资收益和以国务院批准的其他方式筹集的资金构成，是国家社会保障储备基金。“3”是对应于三支柱的养老金，分别是作为第一支柱的基本养老保险基金，作为第二支柱的企业年金和职业年金，作为第三支柱的商业养老保险（含个人税延型）、养老目标基金及银行养老理财产品。中国养老金配置呈现出五大特征。

一是可配置养老金资产的规模快速增长。2019 年底，中国养老金理论可配置规模增长至 13-15 万亿元左右。其中，全国社保基金资产规模（含做实个人账户中央补助资金和山东省企业职工基本养老保险资金委托资金）为 2.6 万亿元，基本养老保险基金累计结余为 6.3 万亿元，企业年金实际运作资产为 1.8 万亿元，分别较 2018 年年底增长 17.6%、8.1%和 22.0%，增速高

于这三类资产的投资收益和同期名义 GDP 增速。职业年金超过 7000 亿元，第三支柱养老资产并无官方统计数据，多数研究机构的估算规模在 2-4 万亿元之间。

二是普遍存在投资范围和固定投资比例的限制。全国社保基金和商业性养老保险的投资限制相对较少，两者均可投资境外资产，投资比例上限分别为 20%和 15%；全国社保基金权益类资产的比例上限为 40%，商业性养老保险权益类资产的比例上限在 2020 年 7 月后由 30%最高调整到 45%。企业年金和职业年金的投资限制相对较严。2020 年及之前，企业年金和职业年金不能投资境外资产，权益类资产比例上限为 30%。从 2021 年起，境外投资放宽至可以通过股票型养老金产品或公募基金投资港股通标的股票，比例上限为 20%；权益类资产的比例上限放宽至 40%。基本养老保险基金投资限制最严，尚不能投资境外资产，权益类资产比例上限为 30%。与美国和英国相比，中国二三支柱养老金投资限制更多，但第一支柱养老金限制却更少。对于二三支柱养老金，美国和英国除部分私人养老金对投资自身有约束外，几乎没有投资范围和比例的限制。不过，其第一支柱养老金仅能银行存款、高信用等级债务类证券，禁止投资股市及其他风险较高、流动性较低资产，而中国的基本养老保险基金却可以投资股票、基金、国家重大项目和重点企业股权等。这与美国和英国采用现收现付制/待遇确定型模式，第一支柱养老金的资金结余

少，对流动性要求更高而对增值要求不高相关。

三是投资的专业性和市场化水平明显提升。2019 年年底，基金公司管理的一二支柱和全国社保基金的养老金规模达到 2.4 万亿元，占比约为 21.2%，较 2018 年年底提高 4.6 个百分点。全国社保基金的委托投资已占据主导地位，2019 年年底委托投资资产规模为 1.59 万亿元，占社保基金资产总额的 60.40%，连续 5 年超过 50%，较 2018 年年底水平上升 4.8 个百分点。基本养老保险基金的委托投资比例也明显上升，2019 年年底委托全国社保基金管理的基本养老保险基金权益为 9886 亿元，为同期基本养老保险基金累计结余的 15.7%，分别较 2018 年年底和 2017 年年底提高 5.0 个和 10.1 个百分点。

四是对股市的总体参与度相对较低。与发达国家相比，中国养老金对股市的参与存在“两个明显低于”的特征。中国养老金投资股市比例明显低于发达国家。2017 年，美国、英国、日本、澳大利亚和加拿大等全球五大养老金国家投资股市比例的平均值在 40%以上（陈向京，2018），超过中国绝大部分养老金的投资比例上限，更是明显超过养老基金投资股票的实际比例。中国养老金所持股票市值占股市总规模比重明显低于发达国家。根据郑秉文（2020）的估算，2019 年养老金入市资金仅占股市市值的 1.37%，大幅低于经合组织国家 24.51%的平均水平。总体上看，中国养老金配置结构是间接融资金融结构的反映，尚未发挥推动金融结构调整的明显作用。

五是投资收益率差异较大。全国社保基金收益率最高，2019 年投资收益率为 14.06%，成立以来平均收益率为 8.14%。企业年金收益率次之，2019 年投资收益率为 8.30%，成立以来平均收益率为 7.07%。基本养老保险基金收益率最低。尽管 2017-2019 年委托全国社保基金管理的基本养老保险基金年均收益率达到 5.6%，但由于各省自行管理的基本养老保险基金主要投资于银行存款，基本养老保险基金的总收益率低。初步估算，2017-2019 年基本养老保险基金收益率分别为 2.0%，低于同期居民消费价格指数 2.2%的年均涨幅。职业年金尚处于试点阶段，养老目标基金和税延型商业养老保险规模小，其收益率尚不具可比性。

（二）中国养老金配置当前面临的挑战

一是实体经济回报率下降，投资风险不断上升。实体经济回报率是养老金收益率的基础。虽然与西方国家相比，中国仍有较高的名义利率与实际利率，但经济增长阶段转换背景下实体经济投资回报率出现了趋势性下降。同时，实体经济回报率还受到全球供应链重构、成本上涨压力的挑战。实体经济回报率的下降，将对养老金投资的长期收益率产生下拉效应。

二是养老金入市的需求与资本市场的不完善之间的矛盾凸显。长期看，权益类资产收益率明显高于非权益类资产。为提升养老金的长期投资收益率和增强养老金体系的自我平衡能力，必须提高养老金投资股市比例，从健康

发展的股市中需求资本红利。不过，中国股市发展仍相对滞后，基础制度仍需进一步完善，上市公司整体质量有待提升，机构投资者比重较低，股市波动性较大，距离居民部门、政府和保险公司的长寿风险管理需求仍有一定差距。

三是养老金投资决策与选择权过于集中。中国的第一支柱养老金带有非常浓厚的收益确定和终身给付特征，在人口老龄化和利率不断下行的环境下，给兜底的政府带来巨大的压力。当第一支柱通过资本市场进行长期投资以便为养老保险体系提供稳定的高回报，作为兜底的社保机构又将承担起投资的责任。由于第一支柱的投资是由政府授权有关机构进行统一投资，资本市场先天所具有的分散化的风险又被统一进行的投资活动集中到全国社保基金，从而将产生较为突出的集中风险。类似的，第二支柱的企业年金/职业年金也并未开放个人选择权，而是由年金建立单位统一决策、统一进行组合管理。不同居民本身所具有的各种异质性风险偏好和风险承受能力，被统一的投资方案所消除，这意味着养老金的投资风险未能实现有效分散，养老基金管理难以满足居民应对生命周期和个性化养老理财的需求。

四、适应形势要求，优化中国养老金配置

优化养老金配置对于提升养老金保值增值能力，增强养老金体系可持续性具有十分重要的作用，也能在促进资本市场发展、优化金融结构、更好服

务实体经济方面发挥作用。

优化第一支柱的投资方案，提高居民的个性化选择。根据居民的年龄和风险偏好，细分出多种不同策略和资金配置方案的投资计划供参与者选择。参考养老目标基金的方式，在保证基本投资收益的基础上，向参与者提供具有一定的目标日期基金特征或目标风险特征的投资选项，从而在一定程度上分散风险。继续推动基本养老保险基金委托全国社保基金投资的比例。

大力发展第二、三支柱，提供风险多元、个性化的养老方案。试点探索企业提供 DB 型企业年金、雇员持股与企业年金协同发展，提升第二支柱吸引力。放宽投资范围和投资比例的限制，让投资更灵活、更具有生命周期管理的特征。在现代服务业龙头企业中推广建立第二支柱，鼓励企业将企业年金和职业年金作为企业对员工的长期雇佣承诺的信号，提升劳动者对企业的归属感，从而鼓励更多企业建立企业年金。大力发展个人年金产品，特别是提升税延型养老保险的税收优惠力度。提升企业年金和个人年金产品的生命周期风险匹配，满足参与者多元化的投资需求。

有序放松另类投资和境外投资，提升长期投资的活力。有序放松养老金资产对权益性资产、基础设施、房地产、重大战略工程等的投资比例限制。积极支持养老资金进入养老护理、健康医疗、生命科技等相关领域进行投资。探索建立适用于发展中国家的风险管控与估值体系，在此基础上探索对一带

一路国家回报较高风险较低的优质项目进行投资。

推动股市规范健康发展。着力推动提升上市公司质量，加强和改善资本市场监管和执法工作，依法严厉打击证券违法犯罪活动。完善长期资金入市机制，提高股市机构投资者比重，降低股市的短期化行为和波动性。

加强养老金资产机构建设与管理，提升资产管理绩效。以企业年金、职业年金发展为契机，加快推进养老金资产管理机构建设与发展。加快建立养老资产外部管理人的甄别制度，建立更加开放的管理人甄选流程，进一步降低养老金资产管理市场的集中度，在确保效益的基础上进一步分散风险。对外资开放养老资产管理，在加强监管的基础上充分发挥外资机构在养老资产管理与投资等方面的经验优势，提升养老资产管理行业发展水平。以强化对养老金管理机构的长期考核为重点完善激励约束机制，推动其投资行为的长期化和持续提升权益类投资比例。建立健全与养老金相适应的市场化薪酬机制。

Pension Allocation under the New Global Marco-economic Background

Prudential

After the Global Financial Crisis, the global economy has shown the features of low growth, low interest rates, high debt, and high risks. The COVID-19 epidemic makes matters worse, and the accumulation of global economic and financial risks has accelerated. Under the new macroeconomic background, the allocation of the second and the third pillars of pensions in developed countries faces the challenges of lower long-term yields and increased volatility, showing new trends such as increased proportion of high-risk asset allocation and increased personal participation in investment decision-making. China's pension assets are composed of the national social security funds and the three-pillar pensions, with the theoretical assets exceeding 13 trillion yuan. The allocation of the pension assets is featured with significant increase in investment professionalism and marketization, high-degree investment restrictions, and relatively large difference in investment return. Faced with the challenges of declining returns in the real economy, insufficient adaptability of the capital market, and over-concentration of investment decision-making, it is necessary to continuously relax the restrictions on investment fields and proportion, promote the healthy development of the stock market, improve the capacity of pension management institutions, and increase the choice and decision-making powers of pension participants in order to further optimize the allocation of pensions.

1. The global economy and finance has shown the features of low growth, low interest rates, high debt, and high risks under the COVID-19 epidemic

(1) Insufficient momentum for global economic growth

Structural problems have lowered the economic growth potential. The first problem is the acceleration of population aging, causing the slowdown of labor supply and the continuous increase of population dependency. The global population dependency ratio reached 13.9% in 2019, an increase of 2.5 percentage points from 2008; the population dependency ratios of the U.S. and EU exceeded 20% and 30% respectively, and those of emerging economies such as China and India are also rising rapidly. Second, the global labor productivity growth rate has experienced a broad and significant decline due to factors such as the age structure of the population, the continuous increase in the proportion of the service industry, and the slowdown in global trade and foreign direct investment growth to suppress technology diffusion. According to the World Bank, the growth rate of global labor productivity fell from a peak of 2.8% in 2007 to a trough of 1.4% in 2016. Although there was a slight recovery in 2018, it was still below 2%. The decline in developing countries has been even more pronounced. Third, affected by factors such as the rapid rise in asset prices and the unbalanced impact of technological innovation on the labor market, the global income and wealth distribution pattern has continued to deteriorate, and the aggregate demand has been suppressed. According to the report of the World Inequality Lab, the income growth of the Top 1% accounted for 27% of the total increase from 1980 to 2016, while the Bottom 50% accounted for only 12%. This trend continues after 2016. Fourth, emerging economies are gradually becoming the center of global growth, but the lagging of the adjustment of the international economic governance structure restricts their growth potential, thereby dragging down global growth.

The regional support momentum for economic growth is insufficient. In the United States, although the US has achieved the longest lasting economic expansion before the epidemic, the growth rate of Total Factor Productivity (TFP) has slowed down due to the sluggish growth in R&D investment and the shrinking of manufacturing industry. The average growth rate of TFP of the US from 2010 to 2019 was 0.8%, 0.3 percentage points lower than the average growth rate from 1990 to 2007. Meanwhile, the long-term low interest rate requires the monetary authority a return to normal monetary policy, which will also affect the process of its economic recovery in the near and medium term. In Europe, the Euro zone is already in a hyper-aged society, with insufficient R&D investment, rigid labor market, and unrecovered TFP. The contradiction between unified monetary policy and independent fiscal policies has also restricted the macro-control measures and efficiency of the Europe. The economic growth in emerging economies has seen a decline, with diverged growth prospects and increased volatility. In India, the economic growth potential and the constraints coexist, and the slowness of structural reforms has dragged down the release of the potentials; resource-based emerging economies with single economic structure such as Brazil and Russia are greatly affected by weak global demand and commodity price fluctuations; risks in fragile emerging economies such as Argentina and Turkey continue to accumulate.

New challenges after the epidemic have lowered global economic growth expectations. The COVID-19 epidemic has not only aggravated the existing global structural problems, but also brought new challenges such as accelerated adjustment of the global industrial chain and supply chain. After 2010, affected by factors such as weak economic recovery and trade protectionism, the growth rate of global trade has slowed down significantly. Under the impact of the epidemic, major countries have promoted returning of industries to strengthen its economic sovereignty, and are increasingly inclined to build a complete, safe and stable industrial chain, with the adjustment direction of regionalization and peripheralization of industrial chain and supply chain. The efficiency of global division of labor has decreased, the technological spillover effect is weakened, and the catch-up process of emerging economies is blocked. In addition, the global low-carbon transition may accelerate, which will have an impact on the current global development model. The development of emerging economies will face greater challenges, and global inequality may further intensify.

(2) The environment of global low-negative interest rate is difficult to reverse in the short term

The global interest rate level becomes lower as a trend. Before the Global Financial Crisis, the global interest rate level had dropped from 7.9% in 1990 to 4.3% in 2008. After the Global Financial Crisis, major economies have adopted loose monetary and fiscal policies, and global interest rates have further dropped to 2.4% in 2019. Interest rates in most countries are at historically low levels. The Euro zone and Japan have entered the negative interest rate range, while the United States, the United Kingdom, Canada and Australia are close to the zero lower bound of interest rate. For economies that have reached or are close to the zero lower bound, once the economy encounters a negative impact or a strengthened deflation expectation, zero or even negative interest rate policies may become policy options.

The environment of low negative interest rate is difficult to change in the short term. Firstly, the structural factor of global savings glut is difficult to change. Population aging, unequal income distribution and high savings rate in emerging markets have led to an increase in global savings. Meanwhile, the downward trend in global economic growth and the corresponding weakening of investment demand also lifted the savings rate. Secondly, there are greater uncertainties in the global economic recovery after the epidemic, and loose monetary policies may last for a long time. Finally, concerns about financial risk exposure and reliance on monetary policy have made interest rate easy to fall but difficult to rise. Judging from the experience of the normalization of US monetary policy after the Global Financial Crisis, the US federal fund has maintained the interest rate close to the zero lower bound for 7 years.

(3) The feature of global high debt is further intensified

Before the outbreak of the epidemic, the world was experiencing a fourth wave of debt (World Bank, 2020). The large-scale financial rescue plan to deal with the epidemic has led to further inflation of global debt. According to data from the Bank for International Settlements, the total global non-financial sector debt in the second quarter of 2020 was US$209.8 trillion, an increase of US$14.1 trillion from the end of 2019, and nearly twice the size of the debt before the Global Financial Crisis. The global marcoeconomic leverage ratio reached 265.6%, an increase of 64.2 percentage points from the end of 2008, where the leverage ratio of advanced economies increased by 61.8 percentage points to 300.9%, and the leverage ratio of emerging economies increased by 102.9 percentage points to 209.8%. With the support of low negative interest rates, the possibility of a debt crisis in developed countries in the short term is not high. The macro leverage ratio will change according to the degree of economic recovery. The debt risks of non-financial corporate and government sector will continue to increase, and the debt risks of the household sector are expected to reduce. However, continued debt inflation will not only limit economic momentum, but also exacerbate economic and financial vulnerabilities and limit the policy space to deal with economic and financial risks.

(4) Significant increase in global financial risk points

The risks including the US stock market correction risk, the corporate debt default risk, and the public debt inflation risk are prominent. The large-scale fiscal and currency rescue plan has pushed the US stock market back to record highs. The price-earnings ratio has surpassed the peak before the Great Depression and the Global Financial Crisis, second only to that at Internet bubble period in 2000, and the divergence between the economy and the stock market has risen sharply. Once the recovery falls short of expectations, U.S. stocks will face the risk of a correction and may trigger a large-scale financial turmoil. US corporate debt shall continue to accumulate in a low interest rate environment. The epidemic has severely impacted the solvency of enterprises and once the rating is downgraded, it will easily lead to the closure of refinancing channels and bond sales, triggering risks in the bond market. In addition, the epidemic relief and economic stimulus plans have promoted the continuous expansion of public debt, resulting in continuous accumulation of medium and long-term financial risks.

Sovereign debt risk is more prominent in Europe. The sovereign debt risks of some southern European countries remain high, which has constituted a severe hidden danger of systemic financial risks in Europe. In 2019, the public debt ratio (government debt/GDP) of southern European countries such as Greece, Italy, and Portugal has reached as high as 177%, 135% and 118%. Under the impact of the epidemic, Europe has experienced a deep recession, and many countries have launched huge fiscal rescue plans. The sovereign debt problem has generally deteriorated. The public debt levels of Greece, Italy, and Portugal jumped higher in

2020. Under the impact of low negative interest rate and the impact of the epidemic, banking risks in Europe are also increasing, and may be superimposed with sovereign debt risks. Debt defaults broke out in some countries in southern Europe in 2010, gradually spreading from peripheral countries to core countries, and infiltrating from government sector to the banking system, which eventually evolved into the European debt crisis and the Euro zone banking crisis.

The risks of debt crises and currency crises in emerging economies cannot be ignored. The resource dependence feature of many emerging economies has not been fundamentally changed after the Global Financial Crisis. The "double deficits" of current account and public finance, as well as high debt and high foreign debt, exacerbate economic and financial vulnerabilities. After the outbreak of the epidemic, the risks in emerging economies are further increased due to global trade decline, commodity price fluctuations, and international capital outflows. At the same time, low negative interest rate in developed countries caused a large-scale increase in external debt in emerging economies. By the end of 2019, the total external debt of emerging and developing economies other than China has reached US$8.5 trillion, increased from US$4.6 trillion in 2009. After 2014, the external debt of emerging and developing economies other than China accounted for more than 40% of the GDP, exceeding the international warning line of 20%. The epidemic has severely impacted emerging and developing economies. According to International Monetary Fund, about half of low-income countries and several emerging market economies are already facing or at high risk of debt crises. After the outbreak of the epidemic, debt crisis and currency crisis may break out in some fragile and resource-dependent countries as the economic recovery of these countries is affected by the spillover of the monetary policies of developed economies.

2. Pension systems in developed countries and their allocation trends under the new global marcoeconomic background

(1) Balanced development of three pillars, with asset allocation focusing on the second and the third pillars

The three pillars of developed countries feature a balanced development based on specialization and coordination. The first pillar mostly plays the role of managing personal longevity risks, providing residents with basic pension benefits for life, and assuming redistribution and social stabilizer functions by setting differentiated replacement rates for different income levels. The first pillar of most countries adopts the pay-as-you-go system/defined benefit approach to ensure that all residents receive adequate old-age protection. The second pillar is mainly to provide residents with pension income commensurate with their income level, and to help residents make financial arrangements for pensions. Companies usually set up pension accounts for employees, share payment responsibilities with employees, and use long-term accumulated funds and investment income to cover residents' pension expenditures. Different from the first pillar, the second pillar often adopts the fund accumulation system/ defined contribution approach, but there are also a considerable number of countries that allow companies to adopt the fund accumulation system + fixed treatment method for reasons such as attracting employees. The third pillar mainly refers to more personalized products with pension features such as annuity, fund or survival insurance which are related to the investor's age and are completely purchased by the investors themselves. The third pillar is almost the same as other financial investment products. The important reason for its popularity is the design of the system to avoid personal income tax. Pension investment in developed countries is mainly on the second and the third pillars. The first pillar is for the management and utilization of surplus funds. Life-cycle asset management and personalized asset allocation are realized through personalized investment on the second and the third pillars.

(2) Decentralized investment decision-making power with fewer investment restrictions

In developed countries, the second pillar is often an employer-funded pension fund established by the enterprise separately. The pension fund can be established by the enterprise but independent of the financial and operation of the enterprise, or it can be established by the financial institutions. These pensions usually provide different investment plans according to the participants' age or retirement date and risk preference, which makes it easier to meet the participants' risk preference. After the participants select the investment plan, these pension funds construct investment funds that meet various income levels and risk preferences, and adopt different investment strategies and asset portfolios, thereby reducing various risks that may be caused by the concentration of investment decisions. Since each participant can independently choose an investment plan with known risks according to his/her own risk preference and risk bearing ability, and it is professionally managed by the pension fund management institution, the risk of the pension insurance fund can be controlled within the predetermined risk range, and the participants can be responsible for their own profits and losses under the conditions of known expected returns and risks. That's one primary reason why developed countries rarely limit the scope of investment in the second pillar. Participants are responsible for their own profits and losses and there are fewer limits on the scope of investment, so that pension management institutions can better carry out various financial innovations, thereby forming a virtuous circle of continuous maturity of capital market and development of pension funds.

(3) Continuous innovation in response to the environment of low interest rate and high debt

Since the Global Financial Crisis in 2008, developed countries have adjusted their pension insurance investment strategies in stages and increased their investment in bonds, alternative investments and emerging market countries to further diversify risks and achieve high returns. As interest rates continue to fall, various countries continue to take measures to respond to market changes in a low interest rate environment to manage risks and increase yields. For example, as the risks of stocks and derivative securities continue to increase, countries have reduced their investment shares in the stock market. For another example, with the decline in bond returns, some countries with higher bond investment proportions have gradually reduced the proportions, while some countries with lower bond investment proportions have increased their bond holdings to reduce risk exposure and to ensure that more higher-risk and higher-yield assets are allocated while keeping the overall risk unchanged. Other measures include increasing the proportion of securities investment in higher-yielding developed countries and emerging market countries, and increasing investment in unlisted equity or alternative assets.

(4) Improvement of personal participation in investment decision-making to reduce the decision-making risk of pension management institutions

In the context of low negative interest rates increasing asset risks and differentiating asset returns, various countries have increased the participation of pension participants. Some countries have introduced more types of investment portfolios to construct various kinds of investment options such as target date funds and target risk funds to enrich the choices of participants. Some countries have gradually shifted from focusing on institutional investment in the beginning to introducing more participants in decision-making, and even allowing them to participate in investment decision-making to a certain extent, to better meet the risk appetite and diversified investment needs of the participants. While improving the transparency of pension investment and the risk perception of the participants, the decision-making risk is transferred from the pension management institutions to the participants themselves.

3. Current situation of pension allocation in China and current challenges

(1) Basic features of the pension allocation in China

The pension system of China adopts a "1+3" structure. "1" is the social security fund, which is the national social security reserve fund composed of central fiscal budget appropriations, state-owned capital transfers, fund investment income and funds raised by other methods approved by the State Council. "3" is the pensions corresponding to the three pillars, with the basic pension insurance fund as the first pillar, the enterprise annuity and occupational annuity as the second pillar, and the commercial pension insurance (including the personal tax deferred type), pension target fund and the wealth management products of the bank on pension as the third pillar. Pension allocation of China presents the following five features.

First, the scale of configurable pension assets is growing rapidly. By the end of 2019, the theoretical configurable scale of China's pension funds has grown to around 13-15 trillion yuan. Among them, the asset scale of the national social security fund (including the central subsidy funds to make up for the empty personal accounts and the entrusted funds of basic pension insurance funds for enterprise employees in Shandong Province) was 2.6 trillion yuan, the accumulated balance of the basic pension insurance fund was 6.3 trillion yuan, and the actual operating asset of the enterprise annuity was 1.8 trillion yuan, an increase of 17.6%, 8.1%, and 22.0% respectively from the end of 2018. The growth rate was higher than that of the investment income of these three types of assets and the nominal GDP over the same period. The amount of occupational annuities has exceeded 700 billion yuan. There are no official statistics on the third-pillar pension assets and the estimated scale is between 2-4 trillion yuan according to most of the research institutions.

Second, there are widespread restrictions on the scope of investment and the fixed investment proportion. There are relatively few investment restrictions on the national social security fund and commercial pension insurance, both of which can be invested in overseas assets, with the upper limit of the investment ratio of 20% and 15% respectively; the upper limit of the proportion of equity assets of the national social security fund is 40%, and the upper limit of the proportion of equity assets of commercial pension insurance was adjusted from 30% to 45% in July 2020. The restrictions on investment of enterprise annuities and occupational annuities are relatively strict. Enterprise annuities and occupational annuities cannot be invested in overseas assets in and before 2020, and the upper limit of equity assets is 30%. Overseas investment restriction was relaxed from 2021 to allow equity pension products or public offering of fund to be invested in underlying stocks of the Stock Connect, with the upper limit of 20%; and the upper limit of the proportion of equity assets was relaxed to 40%. The restrictions on the investment of the basic pension insurance fund are the most stringent. Foreign assets cannot be invested yet, and the upper limit of the proportion of equity assets is 30%. Compared with the United States and the United Kingdom, there are more investment restrictions on the second and third pillar pensions but fewer investment restrictions on the first pillar pension in China. As to the second and the third pillar pensions, the United States and the United Kingdom have almost no restrictions on the scope and proportion of the investment, except for some private pensions that have special restrictions on investment. However, the first pillar pensions of these countries can only be invested in bank deposits and high-credit debt securities, and are prohibited to be invested in the stock market and other assets with higher risk and lower liquidity, while China's basic pension insurance fund can be invested in stocks, funds, national major projects and key corporate equity, etc. This is related to the adoption of the pay-as-you-go system/defined benefit approach, the small fund balance of the first pillar pension, and higher requirements on liquidity but less requirements on value-adding in the United States and the United Kingdom.

Third, the level of professionalism and marketization of investment has improved significantly. By the end of 2019, the scale of the first and second pillar pensions and the national social security fund managed by fund companies has reached 2.4 trillion yuan, accounting for approximately 21.2%, an increase of 4.6 percentage points from the end of 2018. Entrusted investment has dominated the national social security fund, with the scale of entrusted investment assets amounted to 1.59 trillion yuan by the end of 2019, accounting for 60.40% of the total assets of the social security fund, exceeding 50% for 5 consecutive years, and an increase of 4.8 percentage points from the level at the end of 2018. The proportion of entrusted investment of the basic pension insurance fund has also increased significantly. By the end of 2019, the equity of the basic pension insurance fund entrusted to the national social security fund has reached 988.6 billion yuan, which was 15.7% of the accumulated balance of the basic pension insurance fund in the same period, an increase of 5.0 and 10.1 percentage points respectively compared with the proportion at the end of 2018 and 2017.

Fourth, the overall participation in the stock market is relatively low. Compared with developed countries, the participation of Chinese pension funds in the stock market has the feature of "two significantly lower". The proportion of pension investment in the stock market of China is significantly lower than that of developed countries. In 2017, the average investment ratio of the five largest pension countries in the world, including the United States, the United Kingdom, Japan, Australia and Canada, was more than 40% (Chen Xiangjing, 2018), which has exceeded the upper limit of the investment ratio of most pension funds in China, and significantly exceeded the actual proportion of pension funds invested in stocks. The share of the market value of stocks held by the pension funds of China in the total size of the stock market is significantly lower than that of developed countries.

According to estimates by Zheng Bingwen (2020), market capital of pension funds in 2019 only accounted for 1.37% of the stock market capitalization, which is significantly lower than the average level of 24.51% in OECD countries. On the whole, China's pension fund allocation structure is a reflection of the indirect financing financial structure, and has not yet played an obvious role in promoting the adjustment of the financial structure.

Fifth, the return on investment varies greatly. The national social security fund has the highest return rate, with the investment return rate of 14.06% in 2019, and the average return rate of 8.14% since the establishment. The return rate of enterprise annuity is the second, with the investment return rate of 8.30% in 2019, and the average return rate of 7.07% since the establishment. The basic pension insurance fund has the lowest return rate. Although the average annual return rate of the basic pension insurance fund entrusted to the national social security fund to manage from 2017 to 2019 has reached 5.6%, the overall return rate of the basic pension insurance fund is still low since the basic pension insurance fund managed by each province is mainly invested in bank deposits. According to preliminary estimates, the return rate of the basic pension insurance fund from 2017 to 2019 is 2.0%, which is lower than the average annual increase of the consumer price index of 2.2% in the same period. Occupational annuities are still in the pilot stage, the pension target fund and tax-deferred commercial pension insurance are small in scale, and their yields are not yet comparable.

(2) Current challenges facing China's pension allocation

First, the return rate on the real economy has fallen and investment risks have continued to rise. The return rate of real economy is the basis of the return rate of the pension. Although China still has higher nominal and real interest rates than Western countries, the return rate of investment in real economy has shown a trend of decline in the context of the transition of economic growth stages. At the same time, return rate of real economy is also challenged by the restructuring of the global supply chain and the rising costs. The decline in the return rate of the real economy will have a pull-down effect on the long-term return rate of pension investment.

Second, the contradiction between the demand for pension funds marketization and the imperfection of the capital market is prominent. In the long run, the return rate on equity assets is significantly higher than that of non-equity assets. In order to increase the long-term investment yield of pension funds and enhance the self-balancing ability of the pension system, it is necessary to increase the proportion of pension funds invested in the stock market and seek capital dividends from the healthy development of the stock market. However, the development of China's stock market is still relatively lagging, the basic system still needs to be further improved, the overall quality of listed companies needs to be improved, the proportion of institutional investors is relatively low, the stock market is volatile, and there is still a gap from needs of the longevity risk management of residential departments, governments and insurance companies.

Third, decisions and options on pension investment are too concentrated. The first-pillar pension of China is strongly featured with defined income and life-long benefits, which has put tremendous pressure on the government who assumes the fallback responsibility in an environment of population aging and interest rate declining. When the first pillar is invested in the capital market to make long-term investments in order to provide a stable and high return to the pension insurance system, the social security institution with fallback responsibility will assume the responsibility on the investments. Since the investment of the first pillar is a unified investment authorized by the government to relevant institutions, the inherent diversified risks of the capital market are concentrated in the national social security fund by the unified investment activities, which will generate more prominent concentration risks. Similarly, individual options are not considered on the enterprise annuity/occupational annuity of the second pillar and the annuity establishment unit makes unified decision-making and unified portfolio management. The various heterogeneous risk appetites and risk tolerance of different residents are eliminated by the unified investment plan, which means that the investment risk of pension funds has not been effectively diversified, and pension fund management cannot meet the needs of the residents to cope with the life cycle and their demand for personalized financial management for pensions.

4. Adapt to the current situation and optimize the allocation of pensions in China

Optimizing the allocation of pensions plays a very important role in enhancing the ability of pensions to maintain and increase their value and enhance the sustainability of the pension system. It can also play a role in promoting the development of the capital market, optimizing the financial structure, and better serving the real economy.

Efforts shall be made to optimize the investment plan of the first pillar to improve the personalized choices of residents. According to the residents' age and risk preference, a variety of investment plans with different strategies and capital allocation schemes are subdivided for participants to choose from. With reference to the pension target fund method, participants are provided with investment options with certain target date fund features or target risk features on the basis of guaranteeing basic investment returns, so as to diversify risks to a certain extent. Efforts shall also be made to increase the proportion of the basic pension insurance fund entrusted to the national social security fund to invest.

Vigorously develop the second and the third pillars, and provide risk-diversified and personalized pension plans. Pilot exploration companies shall provide DB-type enterprise annuities and promote coordinated development of employee stock ownership and corporate annuities to enhance the attractiveness of the second pillar. Relax the restrictions on investment scope and investment proportions to make investment more flexible and have the feature of life cycle management. Promote the establishment of the second pillar among leading enterprises in the modern service industry, encourage enterprises to use enterprise annuities and occupational annuities as signals of their long-term employment commitments to employees, enhance the sense of belonging of employees to the enterprise, and future encourage more enterprises to establish enterprise annuities. Vigorously develop personal annuity products, especially to increase the tax incentives for tax-deferred pension insurance. Improve the life cycle risk matching of enterprise annuity and personal annuity products to meet the diversified investment needs of the participants.

Relax the restrictions on alternative investment and overseas investment orderly and enhance the vitality of long-term investment. Orderly relax restrictions on the investment proportion of pension assets to equity assets, infrastructure, real estate, and major strategic projects. Actively support pension funds to be invested in pension care, health care, life technology and other related fields. Explore the establishment of a risk control and valuation system suitable for developing countries, and future explore investment in high-quality projects with higher returns and lower risks in the Belt and Road countries.

Promote the standardized and healthy development of the stock market. Efforts will be made to promote the improvement of the quality of listed companies, strengthen and improve capital market supervision and law enforcement, and severely crack down on illegal and criminal activities on securities in accordance with the law. Improve the long-term capital market entry mechanism, increase the proportion of institutional investors in the stock market, and reduce the short-term behaviors and volatility of the stock market.

Strengthen the establishment and management of pension assets institutions and improve the performance of asset management. Taking the development of enterprise annuities and occupational annuities as an opportunity, accelerate the construction and development of pension asset management institutions. Accelerate the establishment of a screening system for external managers of pension assets to establish a more open manager selection process, further reduce the concentration of the pension asset management market, and further diversify risks while ensuring benefits. Open pension asset management to foreign capital, and give full play to foreign institutions with experience and advantages in pension asset management and investment on the basis of strengthening supervision, to improve the development level of the pension asset management industry. Focus on strengthening the long-term assessment of pension management institutions to improve the incentive and restraint mechanism, promote the long-term investment behavior and continue to increase the proportion of equity investment. Establish and improve a market-based compensation mechanism that is compatible with pensions.