2016 OECD/IOPS Global Forum on Private Pensions "Making Private Pensions Work Better" 9-10 November 2016 Summary Notes

Opening Remarks

Dr Edward Odundo, IOPS President, CEO, Retirement Benefits Authority of Kenya

- Dr Edward Odundo highlighted that the Global Forum held in Hong Kong coincided with the celebration of the 15th anniversary of the Mandatory Provident Fund (MPF) System. He pointed out that the Forum has, throughout the years, become a major assembly of pension regulators and supervisors worldwide, meeting together with the private pension industry to discuss cutting edge issues on private pension reforms. Private pension systems over the world are now facing a number of challenges including sustainability, security, affordability, adequacy and low coverage. A major objective of any pension reform is to allow individuals to have a sufficient stream of retirement income in the context of an increasing average life expectancy and the current environment of low interest rates. The Global Forum would thus offer a good opportunity for participants to get together and discuss strategies to strengthen and expand private pension arrangements worldwide.
- Dr Odundo also gave a brief overview of the agenda of the Forum, which includes the recent development and pension reform initiatives in the Asian region, the revised OECD Core Principles of Private Pension Regulation, strategies directed at reducing the costs of private pension schemes, interactions between private and public pension arrangements, protection of the users of financial services, and innovative solutions to structure the payout phase. He believed that attendants would benefit from these interactions and take back new ideas and approaches to carry forward pension reforms in their own countries.

Mr André Laboul, Senior Counsellor to the Directorate for Financial and Enterprise Affairs, Special Financial Advisor to the G20 Sherpa, OECD, and Secretary General of IOPS

• Mr André Laboul shared the work of OECD towards the development of adequate legal and regulatory frameworks of private pension plans. He recalled that at the major OECD Ministerial Meeting in 1998, the message from the Ministers was to promote private funded pensions in a complementary way with two conditions – a strong regulatory/supervisory framework which must go hand in hand with the growth of financial markets. To ensure all elements of a strong framework be set out, OECD and IOPS have worked very hard since then through, for example, the development of

- standards and good practices. OECD has developed the Core Principles of Private Pension Regulation and IOPS has approved the Principles of Private Pension Supervision.
- Mr Laboul also touched on the challenges faced by private pensions which include low interest rates, increasing longevity, lack of financial literacy and high fees, etc., which give rise to consumer protection and financial stability issues. He considered that Hong Kong is the best place to discuss these issues as it has been taking innovative measures to address some of them.

Opening Address

Dr David Wong Yau-kar, BBS, JP, Chairman of Mandatory Provident Fund Schemes Authority (MPFA), HKSAR, China

- On behalf of the MPFA, Dr David Wong Yau-ka, Chairman of MPFA, remarked that the Forum was an important highlight marking the 15th anniversary of the MPF System in Hong Kong.
- Dr Wong considered the issue of pensions and retirement savings is a crucially important one all around the world. He was surprised by the commonality of the issues that confront retirement savings systems in Hong Kong and around the world, and considered events such as the Global Forum, which would allow members to share ideas and experience, and the work of the IOPS were of great value in helping all members make private pensions work better.

Keynote Speech

The Honourable Mrs Carrie Lam Cheng Yuet-ngor, GBM, GBS, JP, Chief Secretary for Administration, HKSAR Government, China

- Mrs Lam gave a keynote speech on "Making the Pension Pillars Work Better in Hong Kong". She said that care for the elderly is one of the policy priorities of this term of the HKSAR Government and the Government will spare no effort in mapping out the right path for Hong Kong.
- Mrs Carrie Lam shared with the audience the challenges that Hong Kong policymakers are facing, which could be summarised in terms of affordability, sustainability, equity and comprehensive protection.
- Mrs Lam said that policy makers have to adhere to guiding principles in finding solutions to the challenges. Hong Kong's multi-pillar retirement protection system is built upon the key principle that caring for the elderly is a responsibility to be shared by individuals, families and the community. For the system to be sustainable in the long run, Mrs Lam said it should continue to encourage private savings among those able and

willing to work so that public resources can be targeted to those in need.

Mrs Lam said the Government should also play a crucial role in making each of the
pillars, namely the social security pillar, the in-kind support pillar, the voluntary savings
pillar and the MPF pillar, work better, and covered some measures that have been
undertaken in the regard.

Session 1: Roundtable: Hong Kong focus on pensions

The Honourable Matthew Cheung Kin-chung, GBS, JP, Secretary for Labour and Welfare, HKSAR Government, China

- Mr Matthew Cheung kicked off the Roundtable discussion on the theme "Hong Kong focus on pensions" by providing the audience with an overview of the demographic trends in Hong Kong and the Government's latest thinking on the ongoing review on retirement protection.
- Mr Cheung gave an elaboration on the multi-pillar retirement protection model of Hong Kong, which included a Pillar Zero or a non-contributory social security pillar, a Pillar Four concerning the provision of public services where the Government's involvement is significant, a privately managed employment-based MPF System which forms the core of Pillar Two, and a Pillar Three which covers voluntary savings.
- In discussing the overall strategies in tackling the challenges that the Hong Kong society will have to face as the population ages, Mr Cheung raised some issues of retirement protection that need to be addressed, such as whether Hong Kong should go for a universal scheme or a targeted approach to focus public resources on those in need, as well as the MPF offsetting arrangement which gives rise to benefits leakage from the MPF System and undermines the retirement protection function of the System. While the issues are very controversial, Mr Cheung emphasized that the Government would strive to identify viable solutions and build community consensus in charting the way forward in preparing Hong Kong for a fast ageing community.

Ms Yvonne Sin, Immediate Past Chairman, Hong Kong Retirement Schemes Association, HKSAR

- Ms Yvonne Sin talked about retirement protection being a shared responsibility of the public and private sectors and the challenges of pension reform in Hong Kong.
- Ms Sin considered that the two primary objectives of public pension policies are to alleviate poverty among the old by redistributing income through a combination of the fiscal budget, general revenues and various programmes/services, and to provide compulsory savings mechanisms like formal pension plans which force individuals to save.
- Regarding the five-pillar retirement model, Ms Sin noted that the multi-pillar concept is

- not always well understood in Hong Kong. There is often a myth that an ideal pension system must have all five pillars but that is not the intention, rather the idea of having five pillars is for each pillar to fulfil a different function in the post-retirement years depending on the employment history and life-time earnings profile of an individual.
- With respect to the challenges facing by the MPF System in Hong Kong, Ms Sin highlighted three unique issues, namely a highly skewed income distribution (around 16% of working age population earning less than HK\$7,000 per month and nearly 60% earning below the median income of HK\$15,000 per month) in Hong Kong leading to very low accumulation under the MPF System and thus requiring supplemental income sources under other pillars, the MPF offsetting arrangement which effectively reduces the available accumulations to employees, and the lack of products to hedge against longevity and investment risks.
- In terms of measures to address the challenges, Ms Sin is of the view that both parametric reform measures (such as expanding coverage, increasing contribution rate and introducing automatically indexed contribution caps) and broader policy reform options (such as improving efficiency to lower administration costs, promoting consolidation of personal accounts, enhancing financial literacy of the public, etc.) should be considered.
- In terms of sources of post-retirement support, Ms Sin considered that it is important to integrate public and private resources to avoid duplication or gaps. There will be emerging need from the ageing society and the Government would be expected to play a role. MPF is a good base but needs to be backed by a more robust Government financed social pension policy.
- Finally, Ms Sin concluded that pension is a multi-faceted subject and highly politically charged. Because of its complexity, it must be approached with a holistic view rather than by introducing piece-meal solutions. The message that a happy retirement calls for saving more, working longer, spending less and investing wisely must be disseminated. To achieve this, it would require building an effective coordination through innovative public-private partnerships, inter-departmental and inter-bureau coordination within the Government and need for an independent expert who is credible with hands-on experience in pension and public finance policies to serve as the pensions champion, and should be nonpartisan without affiliation with any political party whatsoever in order to be fair and unbiased.

Mr Darren McShane, Chief Regulation & Policy Officer and Executive Director, MPFA, HKSAR, China, and Chair of the IOPS Technical Committee

• Mr Darren McShane talked about the background of the MPF System of Hong Kong, changes of the System since it was launched 15 years ago, as well as the recent initiative

- of the default investment strategy (DIS) to enhance the protection of scheme members.
- Being a central part of the multi-pillar approach to retirement savings, the MPF System is an employment-based defined contribution (DC) system which also covers self-employed persons and is privately managed by approved trustees. Contributions are shared between employers and employees, generally at 5% each. In the self-employment case, there is no employer and the member is required to make his own contribution at 5%. Caps and floors apply in relation to the mandatory contributions, whereby if a person earns below HK\$7,100 a month, only the employer contributes, and if earning exceeds HK\$30,000 per month, no contribution is required for the excess. Under the System, employers choose the scheme while employees choose the investments within the scheme.
- Over the past 15 years, 20 legislative actions have been taken to refine the System, which can be categorized into four broad themes, namely, enhancing and protecting members' rights (through, for example, building a system to recover contributions and removing loopholes for evasion of contributions); reducing fees and costs (through simplification of administrative processes, standardization of disclosures, introduction of the employee choice arrangement and the DIS); addressing adequacy (through adjusting the floors and caps in relation to contributions and facilitating the use of special voluntary contributions); and improving investment rules (such as facilitating investment in index funds and the introduction of the DIS).
- Mr McShane then focused on the DIS which is expected to be launched in April 2017.
 The objectives of the DIS are to relieve scheme members of the burden of choice among too many funds and as a vehicle to address high fees.
- Empirical analyses show that volatility can seriously hurt retirement income and that diversification into multi-assets provides a better risk/return tradeoff. The investment approach for the DIS is based on both empirical analyses and consensus building. The DIS will use two constituent funds with different asset allocation: the Core Accumulation Fund (CAF) and the Age 65 Plus Fund (A65F). The CAF has 60% of its net asset value (NAV) in higher risk investments, mainly equities, with the remaining 40% made up of lower risk assets such as bonds. The A65F, on the other hand, will only have 20% of its NAV in higher risk investments and 80% in lower risk assets.
- The DIS has three main features. Firstly, the two constituent funds are subject to fee and expense controls. The total payment of fees chargeable to the funds on a daily basis must not exceed the equivalent of 0.75% of the NAV of the funds annually, while the recurrent out-of-pocket expenses for the funds are capped at 0.2% of the NAV on an annual basis. Secondly, the DIS will adopt a de-risking investment strategy achieved by automatic and gradual adjustments of a member's holdings in the CAF and the A65F

- from age 50 to age 64. Finally, the DIS will adopt a globally diversified investment approach.
- In terms of impact, Mr McShane considered that the DIS would certainly help those who are uninterested or unsure about investment. It may also help address the perceptions around the "low-cost solution", and may change the behaviour within the industry (as there will be a benchmark in relation to how they operate their other funds) and among the scheme members, making them more confident in interacting with the System in the belief that policy-makers are looking after their interests in a systemic way.

Session 2: Roundtable: Regional focus on pensions

Mr Guangyi Zhao, Director of International Department Foreign Affairs Division, Chinese Insurance Regulatory Commission (CIRC), China

- Mr Guangyi Zhao presented the current pension system in China, its challenges and some of the reform measures taken by the Chinese government to address the challenges.
- Currently, China has a three-pillar pension system. Pillar I is the public pension, Pillar II is the supplementary pension and Pillar III is the personal pension. The most unique feature of the China's pension system is the public pension arrangement. It consists of two tiers. The first tier is the pension for urban employees. The second tier is the pension for urban and rural residents (those unemployed or not covered under the employee system). The uniqueness lies in the fact that both tiers make use of a combination of pay-as-you-go (PAYG) and personal accounts. Pillar II is a supplementary pension which includes three parts, namely, enterprise annuity which is tax deductable, occupational pension for public servants which is yet to be put in place and will be tax deductable, and group insurance for employee benefits (with no tax deduction). Pillar III is personal pension consisting of private insurance (with no tax deduction) and personal savings.
- While the public pension accounted for the predominant share (over 80% in terms of income) of the pension system in China, Mr Zhao informed that the growth of payout had exceeded that of contribution to the public pension. As at the end of 2015, the contribution was RMB 3,220 billion (12.4% more than 2014), while the payout was RMB 2,793 billion (19.7% more than 2014), leading to the shrinking of the total surplus.
- Enterprise annuity accounted for 4.7% of China's pension system and the accumulated fund reached RMB 953 billion with a yearly increase of RMB 184 billion. According to Mr Zhao, the growth of enterprise annuity was not as good as expected when it was established in 2004. Having said that, private insurance observed a better growth in premium income and accounted for 13.7% of China's pension system with premium income reaching RMB 540.5 billion in 2015.

- Mr Zhao pointed out that the imbalance of the three pillars is a key feature of China's pension system.
- Mr Zhao highlighted that the insurance industry has assumed a key role within the private pension market, whereby enterprise annuity funds entrusted to insurance institutions reached RMB 417 billion, accounting for nearly half (43.8%) of the total market in 2015. The premium income of private insurance grew even faster, with a growth rate of 91% versus 12% for enterprise annuity in 2015.
- Regarding the achievements of pension in China, Mr Zhao noted that it had not been easy to build a three-pillar system, which is now being optimized in China, since China is a huge country with a large population and came from a "planned economy". The public pension system has very good coverage of over 80% of the people in China. The average payout of pension for urban employees in 2015 has reached RMB 2,200 per person per month, which was almost 1.7 times that in 2010. In terms of economic benefits, the three-pillar system enables sharing of responsibilities among the government, enterprises and individuals, thus following the World Bank's suggestion of creating synergy among different parties of the society.
- As for the challenges faced by the pension system in China, like other countries with an ageing society, sustainability (funding gap) is a problem as more and more people are retiring but fewer are entering into the system. There is also an imbalance in the pension system in China where Pillar I is too big while the other pillars are too small. Finally, due to shortage of funds and other technical/practical reasons, a decrease in the replacement rate has been observed (from 70.79% in 1997 to 45% in 2014 for the public pension). To meet the challenges, Mr Zhao noted that the most urgent task is to have a better architecture of the pension system in place by adopting a market-oriented approach to address the need to balance between equity and efficiency.
- In terms of reforms, Mr Zhao mentioned that the Chinese government has launched a reform of the pension insurance system for public entities and government institutions, which is a market-oriented reform concerning occupational pension for public servants. In addition, commercializing public pension funds is another way to solve the sustainability issue.

Mr Asep Suwondo, Acting Director of Pension Funds and BPJS Employment Supervision, Financial Services Authority, Indonesia

• Mr Asep Suwondo gave an overview of the voluntary pension fund in Indonesia. The pension system is unique in Indonesia as the voluntary pension fund started earlier than the mandatory pension fund. The voluntary pension fund, comprising the employer pension fund (defined benefit (DB) and DC plans) and the financial institution pension fund (DC plans), was established in 1992 while the mandatory pension fund started only

- in July 2015.
- Because of the implementation of the mandatory pension fund, the number of voluntary pension funds is getting smaller due to winding ups. As at August 2016, 73% of the voluntary pension funds were DB plans, 17% were DC plans and 10% were financial institution pension funds. There were only 4.1 million participants in voluntary pension funds in 2015 and the net assets amounted to US\$17.84 billion as at August 2016.
- The rule of investment portfolio of voluntary pension funds is quite rigid as it is subject to minimum and maximum limitations. The maximum placement of investment for each party is 20%, and some additional requirements apply to certain asset classes as a result of risk-based supervision. Around 65% of the assets were placed in the capital market, 24% in the money market and the rest in other investments such as direct placement in shares and property. Return on investment is about 4.7%.
- In terms of adequacy, Mr Suwondo indicated that the retirement benefit is very small compared to the average need to keep the standard of living in Indonesia (US\$140 per month). Only around 30% of the pensioners can meet the average need to keep the standard of living in Indonesia.
- Mr Suwondo also discussed the challenges that the Indonesian pension fund industry is facing, including a low replacement rate, lack of literacy relating to pension funds, lack of professional management of some pension funds, and uneven development of technology between regions (34 provinces and over 17,000 islands) in Indonesia. Proposed solutions include increasing financial literacy on pension fund by doing socialization in schools and through talk shows on radio and television, requiring administrators to pass the fit and proper test and fulfil continuing education requirement, and developing information and technology infrastructure in remote areas.

Mr R.V. Verma, Member, Finance, Pension Fund Regulatory and Development Authority (PFRDA) of India

- Mr R.V. Verma presented the Indian pension landscape, in particular the National Pension System (NPS), its challenges and the way forward.
- Mr Verma considered that pension is an economic and social phenomenon. From an individual point of view, it is important that the pension is adequate, and from the macro point of view, it is important that the pension is sustainable. Coverage is also important from the systemic point of view. India is taking various measures to improve and expand pension coverage, but there are challenges because the pension market is very fragmented. The pension system is being implemented through various products and institutions which are regulated under different regimes.
- The NPS is under the jurisdiction of the Ministry of Finance and forms part of the

- financial and fiscal reforms, while the Employees Provident Fund Organization (EPFO) is another large pension regime under the Ministry of Labour driven by another set of considerations. As such, there is the challenge of non-level playing field.
- The Indian pension landscape comprises of two broad market segments formal and informal. The government sector forms a large part of the formal segment, while the other part is the corporate sector. The formal segment has institutionalized mechanisms, processes, products and programs to take care of the formal sector workforce. However, the informal sector (82.7% of workforce) is a big challenge. Mr Verma highlighted that the NPS has been a very bold initiative in terms of its ambition to develop a system to formally serve the informal sector in terms of old age income security. It was implemented in 2010 and has undergone some modifications about two years ago based on a hybrid approach of DB and DC in terms of a minimum guarantee of the pension for the unorganized segment of workers. It is working well and the number of subscribers is increasing.
- Pension penetration in India is very low (4.5% of GDP) due to the size of the informal sector. 65% of the working population is below the age of 35 years. Mr Verma considered that integrating demographic dynamics with social economic dynamics is a very important feature of the NPS architecture.
- Mr Verma gave a brief description of the different segments of the Indian pension industry (National Old Age Pension System NSAP (IGNOAPS), EPFO, private pension and annuities, and the NPS) and then focused on the NPS architecture.
- The NPS is based on an outsourced model with agencies managing specialized functions. There are a large number of players in the financial sector, including banks and non-banking financial companies, acting as the points of presence and the first point of contact for the subscribers. There are different market segments, including the central government sector, state government sector, corporate sector, all citizen sector and the informal sector, and products and programmes have been customized to different market segments. Institutions including the NPS trust, the central record keeping agency, the trustee bank, pension fund managers and the custodian are participants in the NPS architecture. As such, there is a combination of various regulated entities doing their own specialized functions and using their infrastructure to deliver the NPS product.
- In terms of features, the NPS is a disaggregated model with a risk mitigating design. There are checks and balances and operational risks are dispersed across those institutions who can best handle them. Scaling up of coverage is easier through the vast infrastructure network of the banking sector which improves accessibility. The specialized functions of institutions also improve affordability.
- The NPS is an inclusive pension system under which the informal sector presents a bigger challenge. It is subject to market volatility and the annuity market is

undeveloped. In terms of building awareness of people and expanding the coverage, low financial literacy has been a challenge. While the journey across pillars depends on the government and the market, the trend is increasingly shifting towards market dynamics. As at October 2016, the total number of subscribers in the NPS was 13 million and total AUM was around INR 1.5 trillion.

- To expand pension coverage, India has been adding technological functionalities to intermediaries so that they could provide information and disseminate NPS knowledge to subscribers. To optimize pension wealth, India has expanded the potential for pension fund managers to invest in different kinds of investments. Guidelines were provided to facilitate fund managers while leaving them with enough independence to make their own decisions.
- Finally, in the way forward, Mr Verma shared the vision of PFRDA "To be a model Regulator for promotion and development of an organized pension system to serve the old age income needs of people on a sustainable basis". India is developing a holistic and inclusive pension eco-system, and PFRDA is taking a strong advisory and advocacy role towards the government and a statutory, regulatory and supervisory role over the market. Through appropriate institution-building, market infrastructure initiatives and capacity building across all stakeholders, India is moving towards a unified and responsive regulatory regime for the entire pension industry, and on its way to fulfilling the IOPS Principles of Private Pension Supervision.

Mr Soon Khai Eng, Group Director, Policy, Statistics and Research, Central Provident Fund Board, Singapore

- Mr Soon Khai Eng gave an overview of Singapore's Central Provident Fund (CPF) system and its recent policy enhancements.
- Singapore has a rapidly ageing population (about half are expected to live beyond 85 and one in three will live beyond age 90) with a low fertility rate (1.24). Set up in 1955, the CPF has evolved from a simple retirement savings scheme to an integrated comprehensive social security system that covers retirement, home ownership and healthcare. It is a fully funded mandatory DC system with individualized accounts, covering 3.7 million members with a fund size of \$\$300 billion (US\$220 billion).
- Monthly CPF contributions (capped at a salary ceiling of S\$6,000 (US\$4,300) per month) from employers (17%) and employees (20%) are allocated into three accounts, namely the Special Account (6%) dedicated for retirement needs, the Ordinary Account (23%) for housing and retirement needs, and the Medisave Account (8%) for personal or immediate family's medical expenses.
- In 2014, the CPF Advisory Panel was formed to study possible enhancements to the CPF. Incorporating the Panel's recommendations, the Singapore government has

- adopted measures to enhance the CPF, focusing on improving adequacy, increasing flexibility and helping members make informed decisions.
- On enhancing retirement adequacy, Singaporeans are encouraged to work longer with the re-employment age for older workers raised from 65 to 67 with effect from 2017. The Special Employment Credit (wage offsets for employers who hire older workers) is offered and CPF contribution rates for older workers have been raised to increase retirement savings. To support the less advantaged members, the government has introduced a Silver Support Scheme which is a means-tested cash supplement (quarterly payouts between \$\$300-750 (US\$220-540)) in retirement for elderly Singaporeans. Extra interest will also be paid to older members on their CPF balances (an extra 1% interest is paid on the first \$\$60,000 (US\$43,000) of the CPF balances; for those above age 55, an additional interest of 1% is paid on the first \$\$30,000 (US\$21,500) of the CPF balances). CPF top-ups are facilitated by increasing the top-up limit for CPF retirement accounts by 50% to allow members to set aside more for retirement, and rules have also been enhanced to facilitate transfer of CPF savings between spouses.
- To increase flexibility, members are given a choice on different levels of CPF payouts and more options are being studied to facilitate the growth of CPF savings as well as cater to the retirement needs of Singaporeans.
- With all the enhancements made to the system, the Singapore government considered that there is a need to help members make informed decisions. Apart from social media campaigns and road shows, one-to-one CPF retirement planning service is offered to members turning age 55, where guidance will be provided to improve members' understanding of the CPF system and enable them to make informed decisions best suited to their own unique circumstances.
- Mr Eng concluded that while the CPF system has by and large worked well, the recent review has led to refinements to better address members' needs. The policy changes focused on enhancing adequacy, increasing flexibility and helping members make informed decisions.

Session 3: Launch of the revised OECD Core Principles of Private Pension Regulation

Mr André Laboul, Senior Counsellor to the Directorate for Financial and Enterprise Affairs, Special Financial Advisor to the G20 Sherpa, OECD, and Secretary General of IOPS, and Mr Pablo Antolín, Principal Economist, Head, Private Pensions Unit, OECD Financial Affairs Division

• The OECD Core Principles of Private Pension Regulation are a set of internationally recognized regulatory standards for private pensions. They have been developed over the years by the OECD Working Party on Private Pensions ("Working Party") as part of its standard setting activities.

- The financial and economic crisis has led to a loss of public confidence in public pension arrangements and private pension arrangements in many countries. To strengthen the regulatory framework of funded private pension systems, the OECD Core Principles of Occupational Pension Regulation has been extended by the Working Party to account for changes in the pension landscape, in particular the increase of DC and personal pension arrangements.
- The main goal of the OECD Core Principles of Private Pension Regulation is to have pension arrangements that work in the best interests of members and beneficiaries.
- In terms of structure, the Core Principles can be classified into three sections. The first six Core Principles are general principles applicable to all types of private pension plans, while the 7th and 8th Core Principles are specific to occupational plans, and the last two are specific to personal pension plans.

Session 4: Strategies for reducing fees in private pension funds – lessons learnt by pension policy makers and regulators

Mr Ambrogio Rinaldi, Director, Pensions Fund Supervision Commission (COVIP), Italy

• In his introductory remarks to the session, Mr Ambrogio Rinaldi emphasized that the topic of keeping costs low is particularly important in the current low yield environment as any cost will have a significant impact on the pension fund assets. It is also a very difficult issue to deal with, taking into consideration that competition through the "invisible hand" is not working well in many circumstances. Thus it is important to look at other measures which may be more effective in reducing costs. The speakers from Latin America, Africa and Central Europe will help identify measures and share their experiences and lessons learnt in their own countries on the issue of reducing costs and fees, focusing on DC systems with individual accounts and on the accumulation phase.

Ms Sybel Galvan, Director General of International Affairs Department, National Commission of the Retirement Savings System (CONSAR), Mexico

- Ms Sybel Galvan gave a presentation on the features of the Mexican pension system, Mexico's experience with pension fees and the lessons learnt. She started by introducing the framework of Mexico's pension system, which consists of three main pillars, namely a federal non-contributory means-tested old age pension for low income earners, a mandatory DC scheme (which replaces the PAYG system in 1997) which covers all private sector and all government workers, and voluntary savings schemes.
- Ms Galvan then focused on the mandatory DC system and described its nature and features. An important remark made by her was that, in view of the high inelasticity of demand of the mandatory DC system, together with the lack of involvement of

consumers, there is no competitive pressure for the pension providers to lower their prices. Due to the nature of the market, pension providers have stronger incentives to elevate commercial spending to attract accounts instead of focusing on increasing returns or lowering prices.

- Ms Galvan shared Mexico's fee policy experience. During the first stage from 1997 to 2003, a liberal approach on management fees was adopted. At this stage, pension providers were allowed to charge different types of fees and thus it became very difficult for account holders to compare fees among the providers. Account holders were allowed to switch once a year but switches were made irrationally.
- In order to promote market discipline, regulation was amended to favour pension providers with lower fees in the second stage from 2004 to 2008. Account holders were allowed to switch as long as they moved to a pension provider with a lower fee. An "equivalent fee indicator" which aggregated different fees into one was created to facilitate comparison among pension providers. Some reductions in fee levels were observed but due to sizable volume of switches, the commercial costs of the system increased significantly. By 2007, it became evident that efforts to reduce fees had been mostly unsuccessful as fees remained very high.
- In view of this, the law was amended in the third stage from 2008 to allow only one type of fee based on asset under management (AUM). A "net return indicator" was introduced to rank performance of pension providers and a public pension provider was created which offered the lowest fee in the market to foster competition. An additional tool was given to the pension regulator CONSAR in 2010 to authorize fee proposals submitted by pension providers on an annual basis. If a pension provider fails to submit its annual fee proposal, it will have to charge a fee equal to the minimum of the authorized fees for the following year. If a fee proposal is rejected, the relevant pension provider will have to charge the average of the authorized fees for the following year.
- Based on CONSAR's authorization methodology, if the costs and expenses of a pension provider are focused on promoting asset and risk management capabilities and operating activities, the provider is allowed to charge a higher fee, but if the expenditure is focused on commercial activities, the provider will be penalized.
- As a result of the fee policy, fee dispersion between pension funds has been significantly reduced. The maximum fee has been reduced from 3.3% in 2008 to 1.14% of AUM in 2016, and the minimum fee from 1% to 0.89% of AUM (charged by the public pension provider) over the same period. The average fee dropped from 1.93% in 2008 to 1.06% in 2016.
- Ms Galvan further shared that the trend of fees in Mexico has been following more or less the same path as Chile, where a very high level of fees was charged at the beginning

of the pension system establishment (over 20% of AUM for Chile and around 15% of AUM for Mexico) but the fee level has gradually declined over the years. Regarding the lessons learnt throughout the 19 years of the Mexican DC system, Ms Galvan reiterated that, given the nature of the mandatory private pension market, a free price determination framework would result in abnormal profits for pension providers. Market incentives to bring prices down are necessary and strong government intervention is needed to bring prices down.

Mr Kofi Anokye Owusu-Darko, Chief Executive Officer, National Pensions Regulatory Authority (NPRA), Ghana

- Mr Kofi Anokye Owusu-Darko gave an overview of the Ghanaian three-tier pension system, the growth of private pension funds in Ghana, fees and charges of the pension schemes as well as Ghana's experience in minimizing fees.
- The three-tier pension system consists of a mandatory basic national social security scheme which is a DB scheme, a mandatory occupational pension scheme which is a privately managed DC scheme, and a voluntary provident fund and personal pension scheme. The combined employer and employee contribution rate is 18.5% of the employee's earnings, of which 11% will be directed to the first tier, 5% to the second tier and the remaining 2.5% to the national health insurance programme.
- In terms of the number of schemes, Mr Owusu-Darko informed that there was a total of 260 private pension schemes as at September 2016, most of which are employer-sponsored schemes (153 schemes) and master trust schemes (86 schemes), and AUM as at June 2016 amounted to US\$1.6 billion.
- In discussing Ghana's experience in lowering fees of private pension schemes, Mr Owusu-Darko advised that a cap of 2.5% (p.a. on NAV) is imposed on the charges of schemes, among which 0.33% is to be charged by the regulator, 1.33% to be charged by the trustee, 0.56% by the pension fund manager and 0.28% by the pension fund custodian. The average fee for private pension schemes (Tier 2 and Tier 3 combined) is 2.46%.
- In terms of challenges, Mr Owusu-Darko indicated that both the operation costs of service providers and the large number of employer sponsored schemes have an impact on fees. Regulators have been taking actions aimed at reducing operating costs, including promulgating default/standard scheme and trust documents to reduce start-up cost, reducing trustee renewal fees, encouraging employer sponsored schemes to move to master trust schemes to take advantage of economy of scale, encouraging industry consolidation among service providers to reduce operation costs and increasing AUM, reducing the fee cap as AUM increases, and encouraging fee transparency and competition by publishing the fee structures and performance of trustees on the NPRA

- website. As a result of the publication, Mr Owusu-Darko noted that fees have become more competitive.
- NPRA is also looking at the possibility of regulating audit fees of pension schemes such that the fee rate would decrease with the NAV of the scheme to encourage the grouping of smaller schemes.
- Mr Owusu-Darko also shared the experiences of other African countries. Nigeria, similar to Ghana, also regulates fees of pension schemes with a cap of 2.25% of AUM, while fees and charges are determined by the market in Uganda and Malawi.
- Mr Owusu-Darko concluded that while regulators should consult widely to understand how fees are fixed in other jurisdictions, fees are largely tied to the local environment and the cost of doing business and thus there is no one best route to deal with them.

Ms Julia Čillíková, Director of Regulation Department, National Bank of Slovakia

- Ms Julia Čillíková provided a general introduction on the Slovak private pension system, the categories of fees and charges of pension funds and relevant reforms in Slovakia.
- With respect to the private pension system in Slovakia, the second pillar is a quasi-mandatory DC scheme managed by pension saving companies with €6.3 billion in assets, while the third pillar is a voluntary DC scheme (although participation is mandatory for people employed in certain higher-risk occupations) managed by supplementary pension asset management companies with €1.5 billion in assets.
- Fees and charges of pension funds can be categorized into pension scheme costs, investment costs and transaction costs. In view of the high fees and bad performance of pension schemes, the National Bank of Slovakia has carried out reforms by reducing the maximum level of fees that could be charged by pension providers.
- For the second pillar, the maximum administration fee is 0.25% p.a. of contributions (reduced from 0.5%) and the management fee cap is 0.3% p.a. of NAV (reduced from 0.78%). There is also a fee for maintaining a personal account which is capped at 1% of contributions. To reward for good performance, maximum success (performance) fee has been increased from 5.6% to 10% of the average return of the pension fund.
- For the third pillar, management fee has gone down from 3% to 1.2% p.a. of NAV, while the success fee is 10% of the average return and the early withdrawal fee went down from 20% to 5%. The maximum switching fee is set at 5% of the member's account balance in the first year and free of charge for subsequent years.
- Based on the information from Ms Čillíková, the total fee was 0.89% of AUM in all private pension funds in 2015.
- Ms Čillíková also discussed the tools available to pension fund members for comparison, such as the use of webpages of pension fund management companies, key information

- documents, annual/semi-annual reports, etc. However, members tend to be passive despite differences in prices and returns.
- Ms Čillíková quoted some examples of neighbouring countries such as Poland (contribution fee cap of 1.75%), Croatia (management fee cap at 0.4185% p.a. of NAV for 2016 to be reduced by 7% every year until it reaches 0.3%) and Macedonia (contribution fee cap at 3.5% for 2014 to be reduced to 2% in 2020, and monthly management fee cap at 0.045% of assets for 2014 to be reduced to 0.03% in 2019) which adopt a similar approach by limiting the maximum level of fees to be charged by pension providers.
- As to why the pension system may be expensive, Ms Čillíková considered that poor competition, sunk costs which inhibit entrance to the market, marketing activities, inability of members to understand the complexity of the system, low level of financial literacy and participants' inertia are some of the reasons. Possible solutions to deal with the challenge would include improving transparency, allowing only a single type of fee with standardized calculation to facilitate members' comparison between pension providers, adopting simple rules for calculation of fees, setting reasonable price caps and supporting financial literacy.

Mr Ambrogio Rinaldi, Director, Pensions Fund Supervision Commission (COVIP), Italy

- In his additional remarks, Mr Ambrogio Rinaldi highlighted that it is critical for personal pension plans to have fiduciary mechanisms in place in order to address the fee issue. Such fiduciary mechanisms are evidenced in occupational/work-based pension plans, and he quoted the default arrangement of the Hong Kong MPF System as an example, where a fee cap is applied to contain the level of fees.
- Mr Rinaldi also shared the experience of Italy, where occupational pension plans are able to keep costs low in view of the fiduciary roles played by employers and trade unions, while in contrast, it is observed that personal pension plans offered by commercial pension providers charge very high fees irrespective of their fund size, implying that market competition is not working.
- Mr Rinaldi also called for reduction of traditional, costly distribution channels, redesigning regulation on suitability requirements, exploiting fintech in the field of product distribution, and the use of automatic mechanisms like robo-advice in assessing the needs of individuals. Finally, Mr Rinaldi noted that transaction costs should also be an area to look at as it is also in the interests of members to keep that component of costs at a low level.

Session 5: The interaction between private and public pensions in selected countries Mr Pablo Antolín, Principal Economist, Head, Private Pensions Unit, OECD Financial

Affairs Division

- In this session, Mr Pablo Antol in presented the thinking of OECD about the interaction between public and private pension arrangements.
- Mr Antol in started with the major objectives of pension systems from the OECD point of view, which are to reduce or eliminate poverty at old age and to make sure people save during their working life to finance their retirement (consumption smoothing).
- Poverty alleviation is to bring people at old age above certain level of income. It leads to redistribution and is normally part of the safety net (non-contributory public pensions) provided by the State. OECD considers that public pensions should be financed from the budget and general taxation. On the other hand, saving for retirement should be financed through contributions, which can be PAYG (generally managed by the public sector, i.e. public pensions) or funded pensions (occupational or personal managed by the private sector). It can be mandatory or voluntary, DB or DC.
- Mr Antolín also talked about the risks involved in retirement saving. As the future is uncertain, assumptions made on the parameters of retirement planning, e.g. GPD growth, wage growth, inflation, returns, life expectancy, etc. may not materialize as assumed. Different types of risks including labour market risks, macroeconomic risks, financial risks, demographic risks, pension management risks, social risks and political risks will affect the adequacy, coverage and sustainability of pension policies.
- Pension systems across OECD countries have a combination of different types of arrangement public, private, PAYG, funded, occupation and personal. What varies is the weight of each component in the overall retirement income.
- Finally, Mr Antol in highlighted the main policy messages from OECD it is important to diversify the sources (i.e. combine private and public pensions) to finance retirement, and funded private pensions are complementary to public pensions. How they complement each other is defined by how the main objectives of pension systems are to be met and how the risks of saving for retirement and running pensions are to be shared.

Ms Olga Fuentes, Deputy Chairman of Regulation, Superintendence of Pensions, Chile and Vice President of the IOPS

- Ms Olga Fuentes noted that to have good interaction between public and private pensions was a focus of Chile's pension reform in 2008. She gave a presentation on the basic features of the multi-pillar pension system in Chile and discussed the interaction between the first and second pillars and the challenges associated with the system.
- The current pension system in Chile began in 1981 with the mandatory DC scheme (the second pillar) with the objective to smooth consumption between active and passive work life and is funded through individual savings with tax exemption. The solidarity

pension system, which forms the first pillar of Chile's pension system, was introduced after the reform in 2008. As a complement to the second pillar, the objective of the solidarity pension is to prevent poverty and is funded by general taxes. There is also a voluntary pillar (the third pillar) to complement the mandatory savings to improve the final pension.

- On the design of the three pillars, the solidarity pillar consists of two types of benefits, namely the Basic Solidarity Pension (PBS) which is a flat amount (monthly amount of US\$142) directed to those not affiliated with the pension system, and the Complementary Solidarity Pension (APS), a complementary payment to those who, having participated in the system, can only self-finance a monthly pension below a certain threshold. The solidarity pension is a means-tested benefit subject to certain entry requirements (age 65 for old age benefits and aged between 18 and 65 for disability benefits, belonging to the poorest 60% of the population, and complying with residence requirements). There were 1.3 million beneficiaries who were paid benefits in December 2015. The public expenditure on the first pillar was 0.6% of GDP in 2015.
- The second pillar is a mandatory DC scheme covering all dependent workers. By 2018, self-employed workers will all be transitioned into the system and will have to contribute mandatorily. Contribution for pension is 10% while the fee is around 2.7% which is charged on wages. Members can choose between six private pension fund administrators (PFA) and among different types of funds. Members can choose programmed withdrawal, annuity or a combination of both.
- As at August 2016, there were around 10 million affiliates and 5 million contributing affiliates in the second pillar, while the total work force is 8.6 million. Pension assets in the second pillar accounted for around 70% of GDP. In terms of funds allocation, a shift of allocation from more aggressive funds to conservative funds has been observed since 2009 after the financial crisis.
- The third pillar is based on individual voluntary pension savings (APV), with the State matching for lower earnings and tax incentives for higher earnings. There is also a Collective APV which is voluntarily offered by an employer and workers can choose whether to join. Voluntary savings made by workers are matched by their employer and there are tax/benefit incentives. However, this type of plan did not work very well and there are only a few of them.
- Considering the roles of the solidarity pillar, Ms Fuentes indicated that this pillar plays an important role to increasing pensions and reducing inequality. Statistical data showed that the solidarity pillar has a significant effect on smoothing consumption by complementing benefits and reducing gender gap in replacement rates.
- The solidarity pillar was also designed to insure against longevity risk, investment risk,

inflation risk and human capital risk, and protection is different according to the level of the base pension. Under the case of programmed withdrawal, if the self-financed pension is lower than the PBS, the solidarity pension will basically insure against all types of risks. If the self-financed pension is above the PBS, the solidarity pension will insure against longevity risk.

- Ms Fuentes also mentioned that there are a lot of tradeoffs involved in the design of benefits, including the tradeoff between protection, the need of risk-sharing and the impact on incentives. The tradeoff can be minimized by integrating the first pillar with the second pillar the APS is decreasing at a rate of 30% with the self-financed pension. There is also the tradeoff between the level of benefits and the share of the population to be covered, i.e. whether a means-tested benefit or a universal one should be provided.
- In terms of challenges, Ms Fuentes shared that Chile is facing increasing longevity like many other countries. There are also challenges as to how to achieve pension adequacy without compromising the long run financial sustainability of the pension system, how to search for yield in the low interest rate environment, and improve coverage. Ms Fuentes noted that the expectation gap between the level of pension obtained and the level desired is currently the main challenge that Chile's pension system is facing. She considered that it is important to improve financial education and be able to communicate with affiliates, helping them understand their responsibility to make informed decisions to increase the level of pensions. In view of the issues, there is a need for Chile to move quickly to make additional changes to the system in order to achieve better pension adequacy.
- Finally, Ms Fuentes shared that, based on Chile's experience, having a multi-pillar scheme with good interaction between public and private pensions is the way to go.

Mr Björn Z. Ásgrímsson, Senior Risk Analyst, Financial Supervisory Authority (FME), Iceland

- Mr Björn Z. Á sgrímsson introduced the pension system in Iceland, the interaction between public and private pensions in Iceland, the challenges and the recent pension reforms.
- Mr Á sgrímsson noted that it has been a long term pension policy in Iceland that each generation should save for their own retirement, and funded pension is the main source of retirement income. The private pension system that Iceland has today was established in the major pension reform in 1969 where the stakeholders made a collective agreement that private sector workers had to pay to a mandatory private pension system. Prior to this reform, the pension system was for civil servants. In 1997, there was another reform after which everyone, employed or self-employed, have to pay to the pension system, and the voluntary pension was also created.

- Pillar I is the social security safety net. It is unfunded and provides old age pension, disability, maternity and survivors' support. It gives full benefits to those after 40 years of residence between age 16 and 67 and partial benefits after three calendar years of residence. There is no direct contribution and it is financed by taxes. The current maximum old age pension is US\$2,000 per month. It is income tested and the retirement age is 67.
- Pillar II, the mandatory private pension, is the most important part of the pension system. Everyone who earns an income has to contribute. The coverage ratio is 86% (for those aged 16 to 67). Employees have to make contribution at 4% (tax deductible) while employers have to make contributions at 8% in the private sector and 11.5% in the public sector for civil servants. This pillar provides lifelong retirement benefits with a minimum targeted replacement rate of 56% in the private sector and 76% for civil servants. It also provides survivors' support and disability pension benefits. The total assets are around 147% of GDP which is one of the highest among the OECD countries. One-third of the assets are in DB funds for civil servants (guaranteed by the government) and two-thirds are in DC funds owned by the private sector.
- Pillar III is a voluntary personal pension with a coverage ratio of 46%. Employees have to make contribution at 2-4% and employers have to make contribution at 2%. Benefits will be paid after age 60 in either a lump sum or a programmed withdrawal arrangement. The total assets account for 10% of GDP. It is a DC plan with personal accounts and there is no insurance component.
- In terms of interaction between Pillars I and II, Mr Á sgrímsson informed that a Bill has been passed by the Parliament to simplify the social security support (since it involves many components and is heavily means-tested) and to make it more transparent. Mr Á sgrímsson then illustrated the formula of benefit calculation:

Social security benefits = Maximum amount of social security benefits - 45% (income - deductible limit)

- Based on the formula, everybody is entitled to social security benefit subject to income testing. For example, a person who does not have any income will get US\$2,000 per month from Pillar I when he retires, while a person with Pillar II benefit at US\$2,500 per month will get US\$1,000 per month from Pillar I. A person with the Pillar II benefit at US\$4,700 per month will get nothing from Pillar I.
- On the evolution of funded pension benefits, Mr Á sgrímsson showed a graphical presentation that the total pension benefits paid in Pillar I (as % of GDP) was higher than those for Pillars II and III in 1997 but after 1999 the situation reversed. In 2015, the benefits paid from Pillar I accounted for 3.3% of GDP which was relatively low internationally. In 2009, there was a dramatic increase of benefit payment from Pillars II and III due to the financial crisis which hit Iceland badly. After the recovery, the

- level has become more stable.
- As regards the old age pension benefits split by pillars, in 1997, the old age pension benefits were mainly from Pillar I (54%) and the rest came from Pillar II (46%). In 2015, about one-third of the old age pension benefits came from Pillar I (32%), 60% came from Pillar II and 8% came from Pillar III. Nowadays, Pillar I is complementing Pillar II, and Pillar II has become the primary source of retirement income.
- Mr Á sgrímsson also showed the projection of replacement rates and the contribution from the three pillars. The projection showed that high-income people get less from Pillar I in terms of replacement rate while low-income people get a higher replacement rate from Pillar I. The replacement rates from Pillar II are similar for high-income and low-income people (around the target replacement rate of 56%). Also, high-income people have higher replacement rates than the low-income people from Pillar III since they have more money to save for retirement. The projected total replacement rate (from Pillars I, II and III) is lower for high-income people (86%) and higher for low-income people (124%). Gender difference is also observed in replacement rates. Women have lower income than men and obtain more support from social security, so they have higher replacement rates in general.
- The challenges Iceland is facing include the gender issue and the unemployment issue, especially during the financial crisis, which has resulted in contribution gaps. There is a new challenge concerning immigrants to Iceland who may not have consecutive years of payment into the pension system when they retire and they do not have 40 years of residence in Iceland. As for the longevity issue, the Parliament has decided to increase the retirement age for Pillar I from 67 to 70 years in the next 12 years gradually. Another proposal is to transform the pension arrangement of civil servants from DB funds to DC funds through a lump sum payment from the government and taking out the guarantee from the government, but this will likely be subject to debate and dispute.

Session 6: Protecting consumers against conflicts of interest in retirement advice Mr Pablo Antolín, Principal Economist, Head, Private Pensions Unit, OECD Financial Affairs Division

• Mr Pablo Antol in presented the policy measures to improve consumer outcomes from financial advice for retirement. The objective of those policy measures is to make sure consumers receive appropriate financial advice at retirement. There are policy measures to address the conflict of interest of financial advisors and to help to ensure that consumers receive retirement financial advice that is appropriate for their needs. Measures to mitigate conflict of interest include the duty of care standards, disclosure requirements and remuneration limits, whereas measures to improve financial advice include qualification standards to ensure that advisors are competent to provide advice,

- and also the need to ensure that mechanisms are in place to facilitate dispute resolution for consumers.
- Mr Antolín then focused on three measures to mitigate conflict of interest. The first one is the duty of care standards whether suitability standards or best interest standards should be adopted. In many jurisdictions, there is a trend towards uniform best interest standards, and there is also a trend towards written conflict of interest policies. However, there are challenges about increased compliance costs which could be addressed if there is clarity of regulation, and the lack of awareness bias which could be addressed by industry standards. The second measure is disclosure requirements. There is a trend toward standardized disclosures. However, the challenges remain as consumers do not understand the disclosures unless they are clarified and standardized. The third measure is remuneration limits, such as caps and bans, which are implemented in many countries.
- These policy measures are necessary and complementary and each addresses a different influence on the quality of financial advice. Unfortunately, they can create the problem of an advice gap. It reduces the availability and/or affordability of advice, particularly for consumers with low to moderate retirement wealth. There is also a problem from the side of the consumers as they tend to misprice financial advice and are reluctant to pay for financial advice.
- To close the advice gap, there should be uniform and clear regulation to facilitate the supply of advice. In relation to the cost of advice, processes should be streamlined in order for the cost to be clear, and there should be flexibility in fee structure so that different fee structures can apply to different types of advice, and technology-based advice, such as robo-advice, should be promoted and supported. Technology-based advice has the potential to increase the accessibility and affordability of advice. Furthermore, its objectivity presents an alternative to overcome the behavioural biases of advisors. However, policy makers need to ensure that the regulation that is in place encompasses these channels so that the same level of consumer protection is provided as for traditional channels.
- Finally, Mr Antolín summarized the key takeaways of his presentation to the audience, i.e. measures are needed to address conflicts of interest in financial advice and improve the quality of financial advice. Policy makers need to address the challenges these measures present in order to ensure their effectiveness. The scope and definitions used by the regulation need to be clear in order to minimize the impact of these measures on the financial advice gap. Also, robo-advice has the potential to increase the accessibility and affordability of financial advice. Policy makers need to ensure that the regulation in place encompasses these services to minimise risks and ensure the same level of consumer protection is provided as for traditional channels.

Mr Jurgen Boyd, Deputy Executive Officer: Collective Investment Schemes, Financial Services Board, South Africa

- Mr Jurgen Boyd gave an African perspective on how consumers of pension funds are protected against conflict of interest in relation to retirement advice. He started by giving a brief overview of the South African private pension system which is regulated under the Pension Act promulgated in 1956. The system is not mandatory but quasi-compulsory as participation is normally a condition of employment. There is no mandatory preservation of benefits. It is predominantly a DC system (90%) and is trust-based with the governance of the fund in the hands of the Board of Trustees (50/50 representation by employer and employee representatives). It comprises occupational arrangements (which are standalone funds and umbrella funds) with AUM of US\$135.3 billion and voluntary arrangements (which are retirement annuity funds targeted at self-employed persons and as top-up for those who are in the occupational arrangements) with AUM of US\$33.2 billion.
- Mr Boyd also mentioned about the risk of conflict of interest with respect to different intermediation touch points. The risk of conflict of interest in the accumulation phase is considered to be medium for standalone funds and high for umbrella and retirement annuity funds. Such risk is considered to be high for all affected pension savings in the preservation phase and on annuitization in the payout phase.
- With respect to the risk mitigation measures, the Financial and Intermediary Service Act (2002) under which financial advice is regulated requires advisors to be licensed. Advisors have to fulfil requirements on competence, qualifying exams and CPD. The Act also requires intermediaries to comply with duty of care standards, and there are specific codes relating to conduct for advice, intermediary services and asset management, and a code on conflict of interest management. There is also a dispute resolution service (Ombuds for Financial Services Providers) introduced in 2005 to deal with disputes arising from intermediaries' advice in a fair, economical and expeditious manner. Africa is also undergoing a retail distribution review to specifically deal with conflicts in the distribution model and discuss the advice fee model versus the commission based model.

Mr P.K. Kuriachen, CEO, Financial Services Commission, Mauritius

• Mr P.K. Kuriachen gave an overview of the retirement and old age pension landscape in Mauritius based on the World Bank's five-pillar model and noted that the retirement system in Mauritius is surprisingly diverse for such a small country. The non-contributory or Zero Pillar provides the minimum level of protection (the safety net) or Basic Retirement Pension (BRP). Every Mauritian who is aged 60 or over can

receive a monthly pension of US\$140 and up to US\$500 as one grows older. The mandatory 1st Pillar is a contributory system linked to income. The National Pension Fund (NPF) is a compulsory DB scheme and is by far the largest pension fund on the island. The mandatory 2nd Pillar consists of individual savings accounts of employees of statutory bodies and civil servants. The voluntary 3rd Pillar comprises private occupational and personal pension plans and is flexible and discretionary in nature. The 4th Pillar includes family and national support to the elderly, including access to free healthcare, housing and free transport.

- Mr Kuriachen went on to describe the regulatory framework for private pension schemes in Mauritius. Under the Private Pension Schemes Act 2012 (PPSA), private pension schemes are administered by the Financial Services Commission Mauritius (FSC), the integrated regulator for the non-bank financial services sector and global business. This framework focuses on good governance, transparency, accountability and risk management. The PPSA captures the reality of the private pensions industry in Mauritius whilst remaining in line with the international principles, recommendations and guidelines of the IOPS and OECD.
- In terms of structure, a private pension scheme needs to be set up as a trust or foundation and administered by a governing body (Board of Trustees for the trust arrangement/Council Members for the Foundation). The governing body should be independent. It has the ultimate responsibility for administration and investment of assets of the scheme, adherence to the terms of the constitutive documents and protection of beneficiaries' interest. It is responsible for appointing and overseeing the functioning of professional advisors and service providers of the scheme, and has to avoid or manage conflict of interest. The pension fund administrator, investment manager, custodian, auditor and actuary also form part of the structure.
- When determining an investment policy of the pension scheme, the governing body or the professional adviser of a private pension scheme must have regard to certain conditions such as the nature of the private pension scheme's liabilities, the need for the scheme to remain in a financially sound condition at all times, the basic retirement income objectives of the scheme, the liquidity needs of the scheme, and the risk factors relevant to the scheme, including risks related to categories of assets, geographic areas and market sectors, amongst others.
- In dealing with conflict of interest, the PPSA and relevant rules also provide for guiding principles and conditions that minimize situations of conflicts of interest. For instance, the investment policy of a private pension scheme shall include policy guidelines on conflict of interests, the asset allocation strategies are to be determined by an actuary, the investment managers are required to invest the schemes' assets as per the guiding principles of the schemes' investment policies, and the governing body, fund

- administrator, investment manager and other service providers have fiduciary duties and responsibility. They have to discharge their functions with due care, diligence and skill that a reasonably prudent person would exercise in dealing with the property of another person.
- Mr Kuriachen also discussed some of the measures to protect consumers. The first one is to regulate entry to the industry. Pension providers should be licensees of the FSC. Secondly, beneficiaries should have access to information. The third one relates to having competency standards and fair market conduct requirements for pension service providers. The Competency Standards formalize the minimum technical competencies in terms of knowledge and skills which a licensee needs to have in order to provide financial advice. The licensee should only provide information in relation to subjects that he is competent and, if necessary, recommend additional specialist advice to the consumers and potential consumers, as appropriate. The Business Conduct Standards requires disclosure to consumers and potential consumers before entering into any contract for the purchase of a financial product, all benefits that will be paid to the licensee, whether by way of fees, commissions, dividends (directly or indirectly) or otherwise under such contract, based on his relationship and interest that he may share with other parties which are associated with the financial product. Licensees must avoid situations of conflict of interests, and in case conflict arises, licensees are required to ensure fair treatment of all their customers. Other measures include strengthening market conduct practices, increasing transparency and disclosure, financial literacy and consumer education, establishing complaints handling procedures and having strict enforcement measures to deter any malpractices.

Session 7: Linking the accumulation and the payout phases

Mr Darren McShane, Chief Regulation & Policy Officer and Executive Director, MPFA, HKSAR, China, and Chair of the IOPS Technical Committee

- In his introductory remarks to the session, Mr Darren McShane briefly went through different approaches to the payout phase under DC systems, which include lump sum payment, programmed/phased withdrawal, insurance annuity, integrated/combination arrangement, government annuity and pooled annuity.
- Lump sum payment is popular with members largely because they can retain full control over their retirement assets. However, there are problems with this option as it does not provide longevity protection and pooling benefits, resulting in most of the risks staying with the members. As a result, many countries have moved towards payment products which move longevity and/or investment risks away from the members while leaving some control to the extent that members can access the money.
- Programmed/phased withdrawal is a payout option whereby accrued assets continue to be

invested by the pension fund or financial services organization and are withdrawn over time. They can in some cases involve the member in investment selection. Periodic payment can be fixed or variable, regular or irregular, and in many systems, minimum and/or maximum payments apply. This option has obvious advantages to lump sum payment; for example, it reduces the possibility of a member spending his retirement savings quickly and prematurely, and it has the potential to provide higher payouts due to enhanced investment returns. This option however does not solve the problem of longevity risk and there are no pooling benefits and is less flexible than lump sum payment. Mr McShane noted that Hong Kong has been adopting the lump sum option but has implemented a regulated structure for phased withdrawal this year.

- Insurance annuity is another option where assets are used as a premium to purchase an annuity payment stream from an insurance company. Payments are usually regular and are based on contract terms, and there may be different types such as joint-life, fixed, indexed, deferred and guaranteed term annuities. Annuities have a natural attraction for policy-makers as it turns a lump sum into a stream of payments with some guarantee element. This option offers longevity protection, pooling benefits and flexibility depending on the type of product. However, members may not like annuities as there is no control over their retirement assets and due to the loss of bequest potential. There are also cost implications due to adverse selection and an immature annuity market.
- In view of the above, some systems looked at some integrated arrangement which combines lump sum payment, programmed withdrawal and annuity with the objective of providing guaranteed payment for life, flexibility, bequest potential, and upside investment return potential.
- Government annuity is another option to deal with issues such as counterparty risk and pricing problems by replacing the role of the insurer with the government. However, it moves the longevity risk and the liability back to the government and tends to hybridize the pillars of the pension system.
- An emerging option is pooled annuity such as target benefit plans and defined ambition plans. The idea is to pool risks within the fund and transfer individual risks to a group e.g. spreading longevity and investment risks within or across age cohorts. It provides regular payments but not necessarily promised, as the target retirement income.
- Lastly, Mr McShane noted that different IOPS jurisdictions adopt different forms of payout and default options and it appears that there is no clear, emerging, consensus at the moment.

Mr Dariusz Stańko, IOPS Secretariat

 Mr Dariusz Stańko presented the problem about the gap between the accumulation and decumulation phases and gave some examples of countries that might have solutions to

- the problem.
- Traditionally, before switching to the DC framework, the accumulation and decumulation phases were linked as most of the pension funds were mainly DB which usually provided a stream of lifelong income on retirement. As the role played by DB schemes decrease, nowadays, many DC schemes lack a link between the efforts exerted by asset managers to increase the value of savings (accumulation phase) and the ultimate results expected by pension fund members on their retirement income (lifelong income at retirement). Accumulation (investments) is tilted towards short-term with the focus on building retirement assets (stock concept) rather than securing a retirement income to guarantee the future (flow concept). When transferring the accumulated assets into the flow, members are exposed to risks and one of the most substantial retirement risks is the (future) interest rate risk at the moment of asset conversion, which is often not addressed. Under the DC framework, pension results (future income) are not only uncertain to members but predominantly not properly communicated to them.
- While some DC framework allows conversion of assets into a stream of income in-house which can spare the members from taking uninformed bad choices at bad times, it can be costly if people do not "shop around". There are also some hybrid DB/DC schemes where there are two layers e.g. a layer of DB which is certain plus a layer of DC as an uncertain top-up, and there are also discussions to set the pension target as a desired outcome but not guaranteed ("defined ambition", "targeted benefit" and "target retirement income").
- Mr Stańko mentioned about the IOPS Working Papers on Effective Pensions Supervision No. 25 on "The Concept of Target Retirement Income: Supervisory Challenges" and highlighted the key messages about the issue the retirement target should be defined and presented to the members as a lifetime income or range of income levels expected in return for assuming a pre-defined level of risk; both the expected risk and the return should be measured and presented in a meaningful way; projections as well as the probability of meeting the stated retirement goal should be reasonable; pension fund members should understand the fundamental link between the level of target and contribution rates and should be offered a range of choices when the ongoing investment results suggest that the target is not likely to be reached; and members should also understand the consequences of the above choices.
- The Paper identified a number of jurisdictions which offer some mechanisms/solutions by combining the elements of the DC and DB systems. Among them, Mr Stańko provided some examples of defined ambition plans, including the Danish ATP (statutory supplementary labour-market pension scheme) which establishes a guaranteed nominal stream of lifetime income, the Iceland mandatory occupational DB/DC funds and the Switzerland mandatory occupational hybrid DB pension schemes which set out some

- target replacement rates, and the US (occupational DC) and Canada target benefit plans.
- In terms of investment and risk management processes adopted to achieve the retirement target, Mr Stańko quoted the examples of the Danish ATP which makes use of a liability hedge portfolio and the Chile mandatory pension system which is preparing to use reference portfolios and considering organizing longevity insurance. When it comes to risk sharing, the accrued benefits in the Iceland occupational DC pension funds can be changed depending on the funds' actuarial situation. The Netherlands DB plans provide for indexation of accrued rights and benefits contingent on funding status, and there are also investment pools and buffer funds in its collective DC plans for sharing investment risk across generations and time. In Switzerland, a number of factors can be used, such as modification of interest rates on savings and conversion ratios by the board of trustees and changes of the legal minimum interest rates by the government and legal conversion rates by the parliament.
- Mr Stańko considered that in a system where the target outcomes are not guaranteed, it would be worthwhile to have strong communication with members as to how the system is working, the assumptions behind, the actual performance as compared to the assumptions, as well as the potential consequences of options/decisions that have to be taken by members. Examples of communication about the targeted outcomes include the pension simulator adopted by Chile and the working group on communicating future pension benefits in the Netherlands.
- Finally, Mr Stańko concluded that while there are some gaps observed between accumulation and retirement phases, the solutions which are aimed at merging DB and DC may help by linking benefit with the contribution and providing certainty/guide of what to do to achieve the target. Some countries have already in place the pension schemes that link the accumulation and retirement phases and offer targeted retirement income to alleviate the problem.

Mr Stephen Glenfield, General Manager, South West Region - Specialized Institutions Division, Australian Prudential Regulation Authority (APRA), and Vice Chair of the IOPS Technical Committee

- Mr Stephen Glenfield talked about the need to link the accumulation and decumulation phases, the prospective response and supervisory challenges from the Australian perspective.
- The mandatory pension fund system (superannuation) is still a fairly young system which was made compulsory for the general working population in 1992. It is largely a DC system. The contribution rate is 9.5% which will rise to 12% in 2026. The total pension fund assets are around A\$2 trillion (US\$1.6 trillion). There are 155 licensed trustees offering 242 funds with 28 million accounts. While Australia has been very

good at the accumulation phase, Mr Glenfield noted that it is moving from the accumulation phase to the decumulation phase. There is a constant upward trend in the proportion of member accounts (22% in 2006 to 31% in 2016) and members' benefits (56% in 2006 to 65% in 2016) for members aged 50 and above. As such, it has become increasingly important for the funds to have a decumulation strategy.

- In terms of benefit payments, Mr Glenfield showed that there were more lump sum benefit payments than pension benefit payments in 2006 as traditionally Australians preferred lump sum payments. 2016 showed that for the first time there was a 50/50 split for lump sum benefit payments and pension benefit payments. The data on net contribution flows also indicated that benefit payments are increasing year-on-year as a result of the ageing population, which translates into challenges around outflow and viability issues. Nearly 50% of funds had more money going out than coming in as at 2016. Thus it is becoming increasingly important for superannuation trustees to retain members at retirement and provide a product in order to maintain scale.
- In view of the situation, the Financial System Enquiry recommended (recommendation 11 the retirement phase of Superannuation) in 2014 that superannuation trustees have to pre-select a comprehensive income product for members' retirement (CIPR). The product would commence on the member's instruction, or the member may choose to take their benefits in another way. Impediments to product development should be removed.
- According to Mr Glenfield, the current thinking is that trustees will be required to pre-select a retirement option where members can choose to opt-in. Minimum features of the option will be determined by the government. Such features would include a regular and stable income stream, some form of longevity risk management, flexibility, low cost and be made up of a portfolio of products providing a number of features.
- Mr Glenfield also raised a number of supervisory challenges, such as how prescriptive should the requirements be; should all trustees have to offer the product and whether the providers should be licensed; whether more than one product should be offered; what advice should be given to members and how much should go into the longevity product. The proposal is currently under consultation with institutions, service providers and product developers and a lot of debate would be expected.

Mr Soon Khai Eng, Group Director, Policy, Statistics and Research, Central Provident Fund Board, Singapore

- Mr Soon Khai Eng shared the experience of how the national annuity scheme has evolved in Singapore to respond to the needs of members' over a lifetime.
- The Central Provident Fund (CPF) of Singapore was set up in 1955 and the national annuity scheme called CPF LIFE has been implemented since 2009. The CPF is the

- national provident fund for Singapore. There are 3.7 million members with a total fund size of S\$300 billion.
- The CPF started as a purely DC system. In recent years, the government has injected an element of collective responsibility into this DC system. The measures include an income supplement scheme called the Silver Support Scheme funded through government transfers to boost the retirement incomes of retirees. Extra interest is also paid to boost the retirement savings of those who have lower balances. Thus it is now a combination of DC features and other features which are more commonly found in DB schemes.
- The CPF system provides a seamless transition from the accumulation to the decumulation phase. When a person starts employment, three accounts are created: a Special Account dedicated for retirement needs, an Ordinary Account for housing and retirement needs, and a Medisave Account for personal or immediate family's medical expenses. At the age of 55, the money in a person's Special Account and Ordinary Account will be transferred to a newly created Retirement Account from which monthly payouts will be provided for life through the national annuity scheme. At the age of 65, a member can choose to withdraw up to 20% of his Retirement Account balances for his immediate needs, and the rest will get annuitized.
- Singapore has a rapidly ageing population which has triggered the initiative to provide longevity insurance for the population. When the system first started, members who reached the age of 55 would withdraw their retirement monies in a lump sum. It evolved to a term withdrawal scheme where members' CPF savings were streamed out over 20 years (through monthly payouts) in retirement. There were private annuities but participation was very low (only 1.6% of CPF members participated). In view of the situation, the government decided to introduce a national annuity scheme, CPF LIFE, which stands for lifelong income for the elderly, in 2009 to address the longevity risk.
- CPF LIFE is an annuity product purchased using members' CPF savings and provides lifelong payouts from the "payout start age". In 2009, it was introduced on an opt-in basis. From 2013, members born in 1958 or later with at least \$\$60,000 (US\$43,000) in CPF at age 65 were automatically included. Those with lower balances can also opt-in.
- CPF LIFE is flexible (offers choice of plans and choice of payout start age from age 65 up to age 70), affordable (no minimum premium, refund provided upon death, and stable income for life), and fair and sustainable (premiums/payouts are actuarially determined, payouts may be adjusted to reflect actual investment returns and mortality experience).
- In terms of the advantages of CPF LIFE, it is able to provide higher payouts for every dollar of savings committed. Firstly, CPF LIFE monies are invested in Special Singapore Government Securities with stable risk-free returns of up to 6% p.a..

Secondly, there is effective mortality risk pooling as CPF LIFE's auto-inclusion feature enables the pooling of mortality risk from a larger portion of the population, which lowers adverse selection risk. Thirdly, there are greater economies of scale because it is a national scheme and is administered by the CPF Board which is a statutory body and not profit-making. Also, CPF LIFE is financially sustainable. Monies are invested in special bonds issued by the Singapore government, which is AAA-rated.

- There are three choices of CPF LIFE plans for members, including the Basic Plan (with lower payout and higher bequest), the Standard Plan (the default plan with higher payout and lower bequest) and the Escalating Plan (starts with a lower payout but will escalate at a rate of 2% p.a.).
- Mr Eng then talked about the role of housing in boosting retirement adequacy in Singapore. CPF and home ownership form the twin pillars of Singapore's social security system. Currently, 9 out of 10 Singaporeans own their homes and 8 out of 10 in the bottom 20% of lower-income own their homes. During the accumulation phase, CPF can be used to finance home ownership, while at retirement, the housing value can be unlocked to supplement retirement income.
- To help the elderly unlock the value from homes in retirement, there are two monetization schemes offered by the government, including the Lease Buyback Scheme whereby the government purchases the tail end of the housing lease of lower-income elderly households, and the Silver Housing Bonus which provides cash bonus for eligible elderly who right-size their property. The sale proceeds are then used to purchase a CPF LIFE annuity to give a lifelong income stream to the members.
- To conclude, Mr Eng recapped that Singapore has evolved its decumulation policies to cater to the retirement needs of Singaporeans, from lump sum withdrawal at inception, to term withdrawal and finally a national annuity scheme. While flexibility is provided for in the CPF LIFE scheme, the CPF Board helps members to make informed decisions through the provision of a one-to-one retirement planning service to provide financial guidance to members.

Ms Angela Mazerolle, Chairman, Canadian Association of Pension Supervisory Authorities (CAPSA), Canada

- Ms Angela Mazerolle presented how the accumulation and payout phases are linked in Canada.
- There are 10 regulators in Canada (covering 10 provinces and 3 territories plus the federal government). CAPSA was formed to help deal with multi-jurisdictional issues and harmonize some of the rules across the country.
- Ms Mazerolle started by giving an overview of the Canadian annuity market. There are seven large insurers providing most of the annuity products. Currently, it is

anticipated that there is excess capacity in the Canadian market but larger transactions may involve multiple insurers and reduce the current capacity. To date, the number of longevity risk transfer transactions has been small relative to the number of pension plans in Canada but the volume and quantum of transactions have more than doubled over the past two years in Canada. Willis Towers Watson reported \$2.5 billion and \$2.6 billion in buy-out and buy-in annuity sales in Canada for 2014 and 2015 (compared to average annual sales of \$1.1 billion between 2008 and 2012). In early 2015, a Canadian pension plan entered into the first longevity insurance transaction in North America involving \$5 billion of pensioner obligations.

- For the products addressing longevity risk, there are annuity buy-out, annuity buy-in, as well as longevity swap/longevity insurance. Under annuity buy-out, the plan pays a single premium to the insurer. The insurer makes guaranteed payments to participants and covers the investment and longevity risks. It may trigger settlement accounting and require top-up in case of deficit within the pension plan. Under annuity buy-in, the plan pays a single premium to the insurer who makes guaranteed payments to the plan and covers the investment and longevity risks. However, it neither triggers settlement accounting nor requires top-up within the plan because most regulators treat that more as an investment product of the plan rather than an annuity product. Longevity swap/longevity insurance is designed to transfer only the longevity risk, while the pension plans maintain their obligations to plan members and beneficiaries. It decouples the investment risk from the longevity risk. The pension plan insures itself against the covered population living longer than expected with an insurance company or other intermediary. This leaves the plan to manage the investment risks.
- Ms Mazerolle went on to discuss the options for retirees in Canada under DB and DC plans. For DB plans, at retirement, retirees will have pension payable from the plan for life. Unless waived by the spouse, it must be in the form of a joint and survivor pension. If members terminate employment before retirement and the benefits are not vested, they will get a refund of their own contributions with interest. If the benefits are vested, they can get an immediate pension at the termination date if eligible, or a deferred pension payable from the plan at the normal retirement date, or they can transfer the commuted value of their benefit to a locked-in retirement vehicle (a life income fund (LIF), a locked-in retirement account (LIRA), or an annuity) or to another pension plan. For DC plans, at retirement, retirees will generally purchase a life annuity or transfer the balance to an LIF, though some jurisdictions in Canada also allow LIF-like payments from a DC Plan. Unless waived by the spouse, the annuity must be in form of a joint and survivor annuity and the beneficiary of the LIF must be the spouse. If the members terminate employment before retirement and the benefits are not vested, they will get a refund of their own contributions with interest. If the benefits are vested,

- they can transfer the balance of the fund to a locked-in retirement vehicle (LIF, LIRA or annuity) or to another pension plan.
- Ms Mazerolle then turned to non-traditional plans that may help better balance the accumulation and decumulation phases called target benefit plans. The early target benefit plans in Canada were generally limited to unionized multi-employer settings. The key characteristics of target benefit plans are that the contribution amounts are generally fixed (or variable only within a narrow, predefined range) and are generally not subject to traditional DB going concern or solvency funding standards. Plan members receive a targeted DB type pension at retirement and benefits may be adjusted (both up and down) to balance the plan's funding. According to Ms Mazerolle, there has been significant uptake of target benefit plans across the country and a number of jurisdictions have brought in legislation to allow for target benefit plans.
- Ms Mazerolle also talked about the differences between the accumulation phase and decumulation phase across DB, DC and target benefit plans. Under DB plans, the decumulation phase is certain and the accumulation phase can be volatile. The plan decides how much it will spend before it knows if it has accumulated enough. The plan can suffer loss and cause great volatility in the employer contribution levels, oftentimes threatening the viability of the employer and the plan. The member benefits from pooling throughout both accumulation and decumulation phases. Under DC plans, the accumulation phase is certain. It collects a known amount, allocated to the individual member accounts, before knowing how much each will need for retirement. The member takes on the investment risk in both the accumulation and decumulation phases. The decumulation phase is fraught with longevity and investment risks, i.e. the member could outlive the retirement benefits. There is significant interest rate risk/annuity purchase rate risk at the time of conversion to the benefit flow. Target benefit plans can provide for predictable and stable contributions (since benefits can be adjusted). It is structured to provide for a relatively predictable decumulation phase. Employees and employers share the risks of the plan. Accrued benefits can be reduced if the plan's funding deteriorates but can be increased again if funding improves. It can provide for greater intergenerational equity. Target benefit plans are not adopted across all jurisdictions in Canada and the rules differ across those that have them.
- Ms Mazerolle finally gave an overview of the Shared Risk Plans (SRPs) introduced in New Brunswick in 2012, which is slightly different from a typical target benefit plan in Canada. It is a type of target benefit plan in which the base benefits are determined by a base pension formula (usually an enhanced career average formula) with the objective of providing inflation protection via indexation that is conditional on the pension plan's financial status. Other ancillary benefits such as early retirement subsidies and bridge benefits will be provided when there are sufficient funds in the plan, subject to the

- legislative regime and the terms of applicable funding policy. All benefits (base benefits and ancillary benefits, both past and future) under an SRP may be reduced if the funding proves to be insufficient.
- SRPs are unique because they are able to convert accrued benefits to shared risk benefits upon plan conversion. All contributions to an SRP belong to the members. There are prescribed risk management and governance requirements, as well as a requirement for an independent administrator. Finally, there is no requirement for an SRP to be funded on a solvency basis.

Closing Remarks

Mr Ambrogio Rinaldi, Director, Pensions Fund Supervision Commission (COVIP), Italy, and the Chair of the OECD Working Party on Private Pensions

- Mr Ambrogio Rinaldi shared his thoughts about the Global Forum. He considered it very interesting to look at some of the pension systems in Asia. For some very large countries with a huge population, such as China and India, even small improvements might have a big impact on the system. On the other hand, there are some smaller jurisdictions, such as Singapore and Hong Kong, where the systems are very well designed and improvements might still be made by means of fine-tuning. The Global Forum has provided a very good opportunity for people coming from other parts of the world to learn about the Asian experience, and Mr Rinaldi envisaged more contributions could be made in a couple of years when one becomes more knowledgeable about the region.
- Mr Rinaldi also mentioned about the tension between reducing costs and providing retirement advice and highlighted that the issue of the advice gap would be an important area requiring more discussion and progress. He noted that there is some convergence of looking into technology to solve the issue.
- As for the topics about the interaction between public and private pensions and the link between the accumulation and payout phases, Mr Rinaldi thought that more could be explored as to how these two concepts might be put together under some kind of scheme where risk sharing could be arranged in such a way that both public and private contributions can play a role.

Mr Darren McShane, Chief Regulation & Policy Officer and Executive Director, MPFA, HKSAR, China, and Chair of IOPS Technical Committee

• In his closing remarks, Mr Darren McShane reiterated the commonality of issues faced by retirement systems in Hong Kong, regionally and globally. While the forum might not have provided solutions to address the issues, Mr McShane suggested that participants have, through the discussions at the Forum, made progress down the road

towards finding solutions and achieving some consensus. He was grateful at the opportunity for local stakeholders to hear and learn from the IOPS and OECD members as to how they approach the issues, and he considered that there are common solutions to work towards. Finally, Mr McShane thanked the efforts of the IOPS, OECD and MPFA for making the event such a successful one.