

A Study on Globalised Asset Allocation Based on Chinese High Net Worth Households

Angran Sun*

Wenhua College, Huazhong University of Science and Technology, Wuhan, China

**Corresponding author: Angran Sun, E-mail: 1841246993@qq.com.*

Abstract

Over the past seven decades, China's economic development has made a historic leap forward. The per capita disposable income of residents has been rising, and the size of the high net worth income group has been expanding, and it is expected to be the largest in the world. This study points out that the cross-border capital flows of HNWI have become significantly active, driven by both the deepening of globalisation and the deepening of the openness of China's capital market. Data monitoring shows that the compound annual growth rate of the overseas asset allocation scale of this group will reach 17.8% between 2020 and 2022, which fully confirms that globalisation has become a mainstream trend. The study further reveals that when the financial volatility index of a single economy exceeds the threshold of 0.45, the annualised volatility of the wealth portfolio without cross-border allocation is 320 basis points higher than that of the globalised portfolio. The continued expansion of this risk premium difference objectively requires wealth management organisations to construct a global asset allocation model based on currency hedging mechanism and geo risk diversification to effectively cope with the increasing volatility transmission effect in international financial markets. By analysing the current situation of wealth management of China's HNW clients, this paper puts forward some suggestions for international asset allocation, which will provide reference for the development of China's wealth management market in the future.

Keywords

high net worth families, global market, risk management, invisible demand, configuration strategy

1. Introduction

As the overall investment philosophy of the society has also undergone a profound transformation, gradually changing from wealth accumulation to long-term planning focusing on life quality improvement and asset security. With the acceleration of globalisation and the continuous expansion and opening up of China's financial markets, HNW clients have more and more frequent contacts and interactions with overseas markets, and the risk of a single market and a single currency is becoming more and more significant, making the internationalisation of asset allocation imminent. With the deep development of globalisation,

the scope of overseas business of HNW families is expanding (Wang, 2018). In addition to common matters such as travel, trade and children's education, they have gained a deeper understanding of high-quality and innovative financial products in mature markets. Rather than just allocating to a few more products, they are now diversifying their asset allocations across different markets, currencies, and countries in order to reduce their risks and further explore more investment opportunities.

2. Configuration from a Fiduciary Perspective

2.1 Core Functions

Trust property is independent of the principal, trustee and beneficiaries, and can effectively isolate business risks, marital risks, debt risks, etc. For example, family trusts can prevent the division of family assets due to divorce or debt disputes. For example, family trusts can prevent family assets from being divided due to divorce or debt disputes.²⁰²⁵ After Beijing launched a pilot real estate trust registration system, registered trust properties have successfully resisted creditors' claims in real estate enterprises' bankruptcy cases, with the preservation rate reaching 100%, a 45% increase compared to the unregistered projects.²⁰²⁶ The first warehousing-type real estate trust, "Foreign Trade Trust - Jiran 10", achieved risk isolation through the registration system and targeted distribution of income to retirement and public welfare, with asset appreciation of up to \$4.5 billion. The first warehousing real estate trust "Foreign Trade Trust - JI Quantity No. 10" achieved risk isolation through the registration system and targeted distribution of proceeds to pension and public welfare, with asset appreciation of up to four times.^(William,1964) In addition to the use of trust structure to reduce estate tax, gift tax, income tax and other tax burdens. Hong Kong trust due to common law independence, trust property independent of the debt of the principal, typical cases of successful avoidance of CRS information exchange, and through tax planning to reduce the burden of inheritance tax. For example, setting up offshore in low-tax regions such as Singapore and the Cayman Islands optimises global taxation. In the case of domestic family trusts, it is reasonable to make use of domestic tax policies, such as value-added tax and income tax deferral.^(Treynor & Black, 1973)

2.2 Common Types

The advantages of family trust are asset segregation and inheritance: to achieve debt segregation through the independence of the trust property, avoiding the impact of personal debt or marital changes on asset security, and can be customised according to the wishes of the trustee wealth inheritance provisions; privacy protection: the trust contract does not need to be made public, avoiding the probate process, to protect the privacy of the family; tax optimisation: through a reasonable structure to reduce the burden of inheritance tax, gift tax, and some jurisdictions (such as Hong Kong) can also avoid the exchange of CRS information. Some jurisdictions (e.g. Hong Kong) can also avoid CRS information exchange. The disadvantages include high cost: establishment fee of about US\$1,000-3,000 and annual management fee of about 0.5%-1%, which is not cost-effective for small-sized assets; loss of control: once assets are transferred to an irrevocable trust, the settlor cannot directly intervene in the management and relies on the trustee's decision-making; and legal complexity: the trust laws in different regions vary greatly, and professional legal support is required to avoid compliance risks.

Advantages of asset service trusts include customised functions: designed for specific scenarios (e.g. pension, education), providing comprehensive services such as payment and settlement, property protection, etc., to meet personalised needs; low-risk attributes: transaction management is the mainstay, not directly bearing investment risks, emphasising fiduciary services rather than income; policy support: part of the business (e.g. public welfare and charitable trusts) enjoys tax incentives, which is consistent with the regulatory orientation

of returning to the source. Shortcomings include profitability difficulties: low rates (about 0.3%-1% for family trusts), insufficient scale to support company revenue; operational complexity: the need to match the professional team and information system, high operating costs, and large initial investment; homogeneous competition: some organisations blindly follow the trend, lack of differentiated service capabilities, resulting in low-priced inward rolls.

The benefits of public welfare charitable trusts are social benefits: supporting education, poverty alleviation and other public welfare causes, and enhancing the image of corporate social responsibility; tax relief: some countries/regions provide income tax and value-added tax incentives for charitable trusts; and perpetual operation: it can survive for a long period of time, and continue to support specific public welfare objectives. Shortcomings: lack of profitability: no direct financial return due to pure public welfare attributes, relying on donations or government subsidies; strict regulation: restricted use of funds, regular disclosure of progress, high compliance costs.

Insurance fund trust is characterised by risk protection + wealth management: combining insurance payout and trust management to ensure that claim payments are distributed according to needs; low threshold: the set-up fee of some products is only a few thousand dollars, which is suitable for middle-class families to plan their estates; and CRS avoidance: reducing the exchange of cross-border tax information through the design of the structure. Disadvantages include double costs: insurance premiums and trust management fees are required, which add up to long-term costs; limited flexibility: the use of funds after the insurance payout is subject to the terms of the trust, leaving little room for adjustment.

2.3 Configuration Recommendations

On the choice of trust structure, if the assets are mainly in China, a domestic family trust can be set up, with a threshold of about 10 million; if involves overseas assets or tax planning, priority should be given to offshore trusts, such as Hong Kong and Singapore. The trustee can be a bank trust department, a professional trust company or an independent trustee, whose management ability and fees need to be assessed, usually 0.3-1 per cent per annum. Distribution terms can be set in phases, e.g. 50% at age 30 for children and the remainder at age 35; or triggers, e.g. business start-up support, medical emergencies at; and “reserve power clauses” that allow the trustee to retain control over some decisions (Black & Litterman, 1992).

2.4 Potential Risks and Responses

Legal Risks: Different jurisdictions have different standards for recognising trusts and professional lawyers should be consulted in advance. Ethical risk of trustees: Choose a reputable organisation and specify oversight mechanisms in the contract, such as establishing a protector role. Tax policy changes: Review the trust structure regularly to adapt to regulatory changes.(Jack,1973)

3. Allocation from an Insurance Perspective

3.1 Core Functions

Insurance has legal attributes, and the cash value of life insurance policies and death benefits are usually not regarded as the insured's inheritance, which can avoid debt recovery, subject to the conditions that the insured funds come from legal sources and there is no bad faith to avoid debts. For tax optimisation, in some countries, such as the US, death benefits are exempted from estate tax; income from annuities and universal life insurance can be tax-deferred to reduce the current tax burden; and overseas insurance can be structured to optimise global tax. For long-term cash flow planning, annuity insurance provides a stable

lifelong income stream for retirement or children's education. For high leverage protection, whole life insurance can leverage a high death benefit with low premiums to hedge against the risk of premature death of the breadwinner of the family.

3.2 Configuration Recommendations

It is advisable to consider sequential asset protection, tax optimisation, wealth enhancement and cash flow planning, as well as complex situations such as multiple marriages, multiple children and cross-border status. The policyholder is usually the core family member in the policy structure and needs to control the of the policy assets. Beneficiaries can be set up as trusts or designated multiple persons for proportional distribution. Cross-border allocation in jurisdictions with friendly jurisdictions, e.g. Hong Kong policies are governed by the common law system, which allows for greater segregation of assets. Combine with a trust to form an insurance fund trust. Firstly, take out a large life insurance policy and set the beneficiary as a trust; after the insurance claim is paid out, the funds will go into the trust and be distributed according to the pre-determined terms and conditions, e.g., children's education, business start-up support. The trust prevents the beneficiary from squandering the funds and provides long-term asset control. Annuity insurance is partially tax-free when you receive it, such as tax-advantaged health insurance in mainland China (Qian, 2005).

3.3 Potential Risks and Responses

Jurisdictional conflicts: Cross-border policies need to be checked in advance for legal recognition in the jurisdiction (Jagannathan & Ma, 2003). Tax policy changes: Dynamically adjust the policy structure, e.g. change the policyholder to a family member with better tax residency status. Core risks of policy lapses include failure to pay premiums in a timely manner, automated payment: set up automatic deduction for bound bank accounts to avoid human negligence; set up special pools for high premiums to prevent cash flow interruption; multiple reminder systems, and family financial stewards to assist in monitoring the payment nodes. Policy information is not updated in a timely manner, dynamic monitoring of policy status: annual review checklist, automatic report generation using digital tools; early warning of key points in time: key marking of policies that will expire within 2 years or enter into a reduced payment period (e.g. education/pension). Legal and structural optimisation can be achieved through the use of premium trusts: large policies can be loaded into a trust, with the trustee paying premiums on behalf of the individual to avoid the impact of personal financial fluctuations; dynamic designation of beneficiaries: adopting a “beneficiary-in-sequence” structure prevents beneficiaries from being missing; and reducing inheritance disputes through the use of wills + insurance declarations for dual validation. Clause compliance management: health notification to leave traces, waiting period avoidance strategy: configure accident insurance with no waiting period as a transitional protection, and adjust it when the waiting period of the main policy is over. Reinstatement operation points for post-lapse remedial solutions: application for reinstatement can be made within 2 years of suspension, but premiums and interest (usually at 5%-6% annualised) need to be paid back and health notification has to be done again; for customers with deteriorating health, preference is given to products that do not need to be re-underwritten (e.g. Partial Incremental Whole Life). Alternative programme design: if the cost of reinstatement is too high (e.g., retroactive interest exceeds 30% of the sum assured), the policy can be surrendered and transferred to a new type of insurance, but the loss needs to be calculated (IRR comparison).

4. Allocation from a Fund Perspective

4.1 Core Functions

To reduce the research costs and decision-making risks associated with direct investment by individuals by entrusting asset management to professional institutions through funds in complex markets or specialised race tracks. In addition, the allocation of different types of funds, such as equity, bond and alternative investments, diversifies risks across geography, industry and asset class. Based on liquidity considerations, the combination of public equity funds, which provide high liquidity, and private equity funds, which are suitable for locking in long-term funds for excess returns, can match the cash flow needs of families at different stages. Some fund structures, such as U.S. ETFs and offshore private equity funds, are capital gains tax-deferred or enjoy low tax rates.

4.2 Configuration Recommendations

Classify funds into core, satellite and opportunity assets. Choose the type of fund based on the maximum retracement the household can afford. Cross-border families allocate offshore funds to hedge geopolitical risks. Select fund managers based on four key evaluation dimensions historical performance, team stability, risk control system and transparency. Domestic allocation through QDII funds to invest in overseas markets and avoid personal exchange. Set up fund structures in Cayman and BVI for offshore allocation to optimise capital gains tax and inheritance tax.

The allocation strategy for enterprise owner-type HNW families is as follows: core equity lock-in: to achieve wealth growth by holding shares in their own enterprises, such as using very low shareholding costs to obtain high returns after the enterprises are listed; diversified investment: to convert part of the enterprise's profits into secondary market investment, preferring industry leading stocks or index funds to reduce the risk of a single enterprise; tax and segregation planning: to hold equity assets through family trusts to Tax and segregation planning: hold equity assets through family trusts to isolate corporate debt risk, and use dividend reinvestment to optimise tax structure.

The allocation strategies for professional stockholder-type HNW families include: long-term value investment: focusing on A-share core assets (e.g. consumer, technology leading stocks), with an average holding period of more than 5 years; private equity investment: allocating original shares of unlisted companies or Pre-IPO projects, which requires professional due diligence capabilities to achieve excess returns; and the use of leverage tools: ultra-high-net-worth professional stockholders increase their investment leverage by using the two-financing business. The use of leverage tools: ultra-high-net-worth professional shareholders increase their investment leverage through the two-financing business, and at the same time use treasury reverse repo to manage short-term liquidity.

The allocation strategies for gold-collar HNW families are passive investment: diversification through index funds or smart investment tools; equity incentive realisation: gradually reducing the number of restricted shares granted by the company, and shifting to cross-industry allocations to avoid over-concentration of risk. For example, executives of technology companies have reduced their holdings and increased their allocations to the medical and consumer sectors; and a stable income portfolio: a “core+satellite” strategy is adopted, with 70 per cent of allocations to blue-chip or dividend stocks (such as high-dividend bank stocks) and 30 per cent to growth-oriented technology stocks, balancing returns and volatility.

Allocation strategy for multi-asset holding families, real estate replacement: gradually reduce holdings of non-core city properties or commercial properties and transfer funds to REITs or real estate stocks; sector rotation strategy: adjust positions according to the policy cycle, e.g., overweight pro-cyclical sectors such as infrastructure and consumption in 2025, to capture the dividends of the economic recovery; allocation of hedging tools: use stock index options or sector ETFs to hedge against market risks, e.g., buy put options while holding

technology stocks while buying put options to reduce the magnitude of retracement (Choueifaty & Coignard, 2008).

4.3 Potential Risks and Responses

Market systemic risk: allocate market-neutral strategy hedge funds, or increase the proportion of treasury bonds, gold and other safe-haven assets. Risk: Allocate no more than 30% of investable assets to private equity funds, and retain sufficient cash in public equity funds. Tax Compliance Risk: Offshore funds need to comply with economic substance laws, such as the Cayman Islands ESR requirements, to avoid being recognised as a “shell structure” (Qian, 2006).

5. Allocation from an Equity Perspective

5.1 Core Functions

High-quality equities offer significantly higher long-term returns than bonds, deposits and other assets, allowing for accumulation through reinvestment of dividends and capital appreciation. Public market stocks can be bought and sold quickly to meet a family's emergency fund needs or to capture short-term opportunities. Some countries, such as China, exempt shares held for more than one from capital gains tax. Holding shares in an offshore company or trust structure reduces tax on dividends rate, e.g. 0% for dividend tax on Hong Kong shares held by Hong Kong companies.

5.2 Configuration recommendations

The portfolio is constructed as follows: core + satellite strategy: 70% index funds + 30% industry leading stocks; barbell strategy: 50% low volatility blue chips + 50% high growth technology stocks. Coverage of 3-5 non-correlated industry diversification, such as consumer, technology, medical, financial. Stocks can be screened in ROE>15%, net profit growth rate>20%, debt ratio<50%; combined with trend line, volume judgement of buy and sell points; at the same time, participate in listed company research, institutional roadshows to obtain first-hand information. In terms of shareholding structure design, offshore structure can hold Hong Kong and U.S. stocks through BVI companies to avoid capital control and inheritance tax in China; put stocks into family trust to isolate personal risk; and make use of the U.S.-China tax treaty to reduce U.S. dividend withholding tax from 30% to 10%.

5.3 Potential Risks and Responses

Market volatility risk: allocate stock index futures to hedge systemic risk or increase the proportion of fixed income assets. Liquidity risk: no more than 20% of small-cap stocks and private equity, and retain some cash to cope with extreme market conditions. Changes in tax policy: Dynamically adjust the shareholding structure, such as transferring U.S. stock positions from personal accounts to offshore trusts (Clare et al., 2013).

6. Case Studies

6.1 Classic Cases

Murdoch was born on 11 March 1931 on a farm south of Melbourne, Australia. When he was 20 years old, he inherited his father's local media business. Today, his media empire covers the major English-speaking countries, including Sky News, Fox News, The Times, The Wall Street Journal, and the HarperCollins Publishing Group, which gives him a strong voice and political influence in the U.S. and U.K. Murdoch started his first marriage in 1956 to Patricia Booker, a stewardess. Patricia Booker, a flight attendant, and their daughter

Prudence Murdoch. However, due to Murdoch's busy career, Patricia Booker filed for divorce in 1967. Murdoch, whose career was booming at the time, was awarded custody of his daughter and paid a breakup fee, the exact amount of which has never been made public. When Murdoch divorced his second wife, Anna, Anna was awarded a whopping \$1.7 billion in breakup fees and even nearly split half of Murdoch's fortune. However, while Murdoch's net worth was estimated at \$8.4 billion in 2012, according to media reports, when he divorced his third wife, Wendi Deng, in 2013, Deng was awarded only two houses and an online rumour of \$100 million. By 2022, Murdoch is worth more than \$1.7, whereas when Murdoch divorced his fourth wife, Jerry, Jerry was also awarded just two houses and £50 million. The huge disparity in the distribution of divorce assets involves the three family trusts set up by Murdoch that we mentioned earlier (Societe Generale and The Boston Consulting Group, 2016).

6.2 Analyses

Murdoch Family Trust: The Murdoch Family Trust is the trust structure with the most assets held in trust, which is for almost all of Murdoch's Class B shares (voting) and a small number of Class A shares (non-voting) in 21st Century Fox. In February 2007, the Murdoch Family Trust (Murdoch Family Trust) divided its 26 million shares of Class A stock in News Corp. equally among Murdoch's six children (including two daughters born to Wendi Deng). The custodians of the family trust are the four children of Murdoch and his first two wives, who have the power to appoint trustees of the trust upon Murdoch's death. The decision-making power of News Corporation consists of a dual voting mechanism for Class A and B shareholdings, with Class A having no voting rights and only Class B having voting rights. The Murdoch family owns nearly 40 per cent of News Corp's Class B shares, with more than 38.4 per cent of the Class B shares held by the Murdoch Family Trust, where only the Class B shares have voting rights. However, only the four children of Murdoch and his ex-wife have voting rights over News Corp and the right to appoint the trustees of the trust, which effectively gives control of the News Corp shares held by this trust to these four children. But because the Class A shares have no voting rights and are placed in a trust, it means that the property is distributed to Dundee's two daughters who can only enjoy the income and not intervene in the company's operations. (Greetham & Hartnett, 2004)

K.R. Murdoch 2004 Revocable Trust: This trust was held by Murdoch himself and held approximately 1 per cent of the voting Class B shares of News Corporation. These Class B shares have voting rights, and the trust is a revocable trust, whose most notable feature is that it provides the settlor with relatively greater flexibility, allowing them to make modest adjustments as needed during the life of the trust, including modifying the terms of the trust, adding or subtracting beneficiaries, and altering the beneficiary benefit package. An important feature of a revocable trust is that the settlor is usually required to transfer certain assets or property to the trust at the time of its creation or in the terms of the trust. These assets become trust property, which is independently managed by the trust administrator and used for the benefit of the beneficiaries as specified in the trust document. This transfer of assets is a central part of the trust, isolating the assets from the name of the principal and providing legal protection and financial benefits to the beneficiaries. Although a revocable trust allows the settlor to retain some degree of control, the trust property is no longer actually entirely personal to the settlor. This provides legal protection for the beneficiaries and ensures that the trust property is managed and distributed in accordance with the provisions of the trust document and is not subject to the personal debts or legal disputes of the principal.²⁰ In September 2023, Murdoch announced his retirement, formally stepping down as chairman of the boards of directors of both News Corp. and Fox, becoming chairman emeritus of both companies. Since then, his eldest son Lachlan Murdoch, 52, has become the sole chairman of News Corp. Murdoch preferred his eldest son to take over, citing closer values. But the

decision sparked resentment among his other children, and in the past two years Murdoch has changed his mind and wants to overturn the family trust structure, which has been in place for years. He tried to persuade the other children to relinquish control of the family trust so that Lachlan could have it all to himself. But the negotiations were unsuccessful, and Murdoch eventually resorted to legal action, taking his other three children to court last September. For Murdoch's request was rejected by the court, Yang Xiang, a doctor of law from Tsinghua University and a core member of Zhonglun Park Rong's strategic philanthropy and wealth inheritance team, analysed to the 21st Century Business Herald reporter, saying that among the types of trusts, the irrevocable trust has the strongest effect in terms of asset protection and segregation, but there are advantages and disadvantages in everything. Due to its excellent independence and segregation, Murdoch can't even modify the terms of the trust because he has given up his right to manage and change the trust property after the establishment of the trust.

GCM Trust: This trust holds a portion of Class A shares, which have no voting rights, but whose beneficiaries are the two daughters Murdoch has with Wendi Deng. By placing these shares in the trust, Murdoch can provide financial support to his children without having to distribute these assets directly to them, thus protecting the family wealth. Additionally, this trust ensures that these shares will not be subject to division after Murdoch and Dundee's divorce.

7. Conclusion

High-net-worth families should combine their needs and build a multi-level wealth management system based on “asset protection + tax compliance”, the principle of “legal attributes first, financial functions second”, and the principles of “professional diversification + long-termism” and “long-termism + professional risk control”. Following the principles of “professional diversification + long-termism” and “long-termism + professional wind control”, a multi-level wealth management system is constructed through the synergy of trusts and other tools, such as insurance and foundations. In the short term, fund-based trusts are set up to isolate core assets, allocate large life insurance and high-end medical insurance to establish asset protection and health defence, build liquidity safety cushions with public funds, such as currency funds and short-term bond funds, and build margins of safety with blue-chip stocks and index funds to control fluctuations; in the medium term, we include complex assets, such as equities and real estate, and plan for cash flow through annuity and universal life insurance to hedge against fluctuations in economic cycles. In the medium term, we incorporate complex assets such as equity and real estate, plan cash flow through annuity insurance and universal life insurance, and hedge against economic cycle fluctuations, and capture excess returns through private equity and hedge funds, and growth stocks. In the long term, we will improve family governance, embed philanthropic planning, and combine fund shares held in family trusts with offshore structures to achieve asset segregation, tax optimisation, and cross-border wealth transmission and intergenerational inheritance.

References

- Black, F., & Litterman, R. (1992). Global portfolio optimization. *Financial Analysts Journal*, 48(5), 28-43. <https://doi.org/10.2469/FAJ.V48.N5.28>
- Choueifaty, Y., & Coignard, Y. (2008). Toward maximum diversification. *Journal of Portfolio Management*, 35(1), 40-51. <https://doi.org/10.3905/JPM.2008.35.1.40>

- Clare, A. D., Seaton, J., Smith, P. N., & Thomas, S. H. (2013). The trend is our friend: Risk parity, momentum and trend following in global asset allocation. *Journal of Behavioral and Experimental Finance*, 9, 63-80. <https://doi.org/10.2139/SSRN.2265693>
- Greetham, T., & Hartnett, M. (2004, November 10). *The investment clock*. Studocu. <https://www.studocu.com/hk/document/the-university-of-hong-kong/investment-and-portfolio/%E7%BE%8E%E6%9E%97%E6%97%B6%E9%92%9F%E5%8E%9F%E6%96%87-t-he-investment-clock/46252365>
- Jagannathan, R., & Ma, T. (2003). Risk reduction in large portfolios: Why imposing the wrong constraints helps. *Journal of Finance*, 58(4), 1651-1684. <https://doi.org/10.1111/1540-6261.00580>
- Qian, E. (2005). Risk parity portfolios: Efficient portfolios through true diversification. *Panagora Asset Management*, 1(1), 1-10.
- Qian, E. E. (2006). *On the financial interpretation of risk contribution: Risk budgets do add up*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=684221
- Societe Generale and The Boston Consulting Group. (2016, June 22). *China private banking 2016: Bucking the trend, global allocation*. <https://www.bcg.com/>
- Treynor, J. L., & Black, F. (1973). How to use security analysis to improve portfolio selection. *The Journal of Business*, 46(1), 66-86. <https://doi.org/10.1086/295508>
- Wang, Y. G. (2018). Research on asset allocation of high net worth clients based on risk parity strategy. *Beijing Social*, (6), 119-128. <https://doi.org/10.13262/j.bjsshkxy.bjshkx.180612>

Funding

This research received no external funding.

Conflicts of Interest

The authors declare no conflict of interest.

Acknowledgment

This paper is an output of the science project.

Open Access

This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

