October 2017 For marketing purposes only.



Taking Action.

How women can best protect and grow their wealth.

Women and Investing UBS Wealth Management



Foreword

Dear reader,

In today's world the gender gap continues to be a substantial challenge to equality, sustainable development and the global economy. While there's a broadly shared understanding of its importance, more decisive action to close this gap is still sorely needed.

This publication highlights how long-term personal investment decisions can contribute to narrowing the gender gap.

While research has been done about the differences between women and men when it comes to finances and investing, so far the impact of factors such as pay differences between the genders, lifespans, and investment behavior have tended to be treated in isolation. And it is only by looking at the full picture that we are able to answer questions such as:

How much of a gap do gender differences create in women's finances? Can this gap be mitigated by making the right investment decisions?

So here we try to bring everything together: the main influences on a woman's journey in life and wealth; the issue of longevity; and even how the differences between women and men's approach to risk-taking affects wealth over their lifetimes. In a world where gender gaps persist, women have the opportunity to at least partially offset these challenges with a sound investment approach.

With this publication we hope to inspire women of all ages to improve their lives by making better use of the financial industry's tools and knowledge. This is our contribution to a world where equal opportunities are the new norm. Thank you for taking the time to read this report and for your interest in this important topic.

Mara Harvey Head UBS Unique Jane Schwartzberg Head Strategic Client Segments WMA

Mark Haefele Global Chief Investment Officer

Mike Ryan Chief Investment Officer Americas

Executive summary

It's time to take control

There are a great many factors that influence the investment decision-making process for individuals ranging from household wealth, to education, to experience, to age, and even to geographic location. But one factor that has been consistently under-appreciated is the role that gender can play in those decisions.

What's more, those differences likely contribute to the "gender gap" that has been broadly observed in the wealth disparities between men and women. So in this paper, we explore some of the potential sources of gender divergence on investment decision making by considering an illustrative 'Jane' and 'Joe,' modeling their financial outcomes based on some common male and female circumstances. The examples show that, compared to Joe, Jane's circumstances, financial confidence, and attitude to investing can actually make it harder for her to achieve her financial goals, thus widening rather than narrowing the gender gap.

Of the many differences between women and men, how they build and invest their wealth over time is one of the most important. So finding the right investment approach can make a big difference in improving the financial well-being as well as the quality of women's lives

- 1. Every individual has a different set of objectives, and some of those variances can be attributable to differences in gender perceptions. Research suggests women have a tendency to perceive wealth more as a source of security, rather than an opportunity¹, and therefore place more value in leaving a legacy to their loved ones.² Research also shows that women like to invest in businesses that have a meaning and purpose for them.³
- 2. Many women's life events and situations currently introduce barriers to creating wealth. Apart from pay differences between the genders^{4–5}, taking career breaks⁶ and needing to work flexibly⁷ can also have a detrimental impact upon their wealth. On average, women also tend to live longer than men, so their wealth-planning needs must often span a lengthier time horizon.
- 3. Women's and men's investment decisions and behaviors can also differ greatly, even if they are similar in other ways. Many women may be more reluctant to take risks⁸ and therefore tend to be less confident⁹ when choosing investments. But there is also evidence to suggest that women may invest in a more disciplined way.^{10–11} This in turn can affect their investment allocations.

"Issues like pay disparity, career discontinuity, work flexibility, life expectancy, and risk tolerance can conspire to create meaningful disparities in the financial outcomes of men and women. Awareness is the first step in closing this gender gap."

Mark Haefele Global Chief Investment Officer Wealth Management

This paper illustrates how these factors could prevent women from achieving their financial goals over their lifetimes. It also shows how all investors – including women - can build their wealth by investing in a disciplined way and taking the appropriate amount of risk. Investment decisions are most effective if they are tailored consistently to a person's needs. To ensure this, it is important that the decisions match the individual's preferences and personality. This is especially true for women, who often feel their wealth managers simply don't understand them or their needs.¹²

Good financial advice can help women overcome some of their wealth challenges, reinforce their financial confidence, and better understand risk. Women can grow their wealth and achieve their goals by understanding their situation, and feelings about investing in particular. This can go a long way in helping to narrow the "gender gap."

Our analysis shows that if current gender income gaps and their drivers persist the illustrative Jane will need to stay invested over her lifetime in order to meet her needs. Additionally, she will need to accept a minimum amount of financial risk in her portfolio.

- ¹ Barclays Wealth and Ledbury Research.
- ² Croson, 2009.
- ³ Deloitte, 'Women investors'.
- ⁴ Blau, Kahn 2016.
- ⁵ Goldin, 2014.
- ⁶ Bertrand, Goldin, Katz 2010.
- ⁷ U.S. Bureau of Labor Statistics, 2015.
- ⁸ Yao, Hanna 2005, Jionakoplos & Bernsek 1996.
- ⁹ Croson, 2009.
- ¹⁰ Croson, 2009.
- ¹¹ Barber 2001.
- ¹² 67% of female investors globally feeling that their wealth managers misunderstand their goals. EY, "Women and Wealth", 2017.

How are women different to men when investing? 1

Objectives – financial and non-financial

Understanding a person's financial goals is key. They determine how long to invest (investment horizon), the money available (liquidity), returns required, and how much risk is needed to achieve the person's objectives. These objectives can either be:

- financial goals, such as preserving wealth, buying a second home, and passing on wealth to the next generation.
- non-financial goals, such as donating to a charity or setting up philanthropic activities.

Women tend to perceive and value wealth mainly as a source of security, not opportunity.¹³

They also tend to focus on being financially secure and able to afford certain lifestyles for themselves and their loved ones over the long term. Additionally, the word 'legacy' often means more than passing wealth down to the next generation – it also means feeling confident their children are safe and content in their lives as well as positively impacting the lives of others.¹⁴

Research also indicates that women tend to be more interested in investing and/or motivated to invest in companies that have a meaning and purpose for them. They are also more inclined to invest in businesses with diverse leadership.¹⁵

¹³ Barclays Wealth and Ledbury Research.
¹⁴ Croson, 2009.
¹⁵ Deloitte, 'Women investors'.

"Financial independence is the foundation for female independence"

Jane Jie Sun CEO, Ctrip.com International Ltd

For a detailed list of references please see page 19.

2.

Life events and situations

The average woman typically earns and spends cash in her lifetime differently from the average man. Women tend to earn less net income over their working lives. They also tend to live longer, and therefore need to provide for themselves for longer.

1. Income gap¹⁶

- Disparity. In the US, women working full-time earn around 21% less on average compared with men on an annual basis.¹⁷ Various factors contribute to the gender pay gap, including being penalized for flexible work. Pay discrepancy occurs even when a woman and a man do the same job, and have the same experience and skills.¹⁸
- Discontinuity. Women tend to be the main caregivers of children and aging parents. Taking career breaks to care for others can harm their career prospects over the long term.¹⁹
- Flexibility. Women engage more often in parttime work. In the US, women are nearly twice as likely as men to work part-time.²⁰ Part-time work can have a lasting effect on women's pay, for example, because they are less likely to be promoted. As a result of the above, women have a smaller pension allocation.

2. Longevity

- In the US, women's life expectancy is 6.7 years longer than men's, whereas in the UK, the difference is 5.3 years.
- Differences in life expectancy vary by country and seem to be narrowing.²¹ On average, the global gap has gradually declined to 2.8 years today from 3.8 years in 2011, 4.6 years in 2001, and 6.3 years in 1971.²²
- Even a few years difference can have an impact on women's wealth.
- ¹⁶ For more information on the gender gap: The Global Gender Gap Report 2016, World Economic Forum. Gender-Lens Wealth, UBS Chief Investment Office WM 2017.
- ¹⁷ Blau, Kahn 2016.
- ¹⁸ Goldin, 2014
- ¹⁹ "The relationship between income and time off is highly nonlinear for those in our sample. Any career interruption – a period of six months or more out of work – is costly in terms of future earnings, and at ten years out women are 22 percentage points more likely than men to have had at least one career interruption. Deviations from the male norm of high hours and continuous labor market attachment are greatly penalized in the corporate and financial sectors." Bertrand, Goldin, Katz 2010.
- ²⁰ U.S. Bureau of Labor Statistics, 2015.
- ²¹ Scientific American (https://www.scientificamerican.com/article/ why-is-life-expectancy-lo/).
- ²² V.Kontis, 2017 Study by Imperial College London and the World Health Organisation.

3.

"Overall, when deciding on investments, women spend more time researching and finding information than men²⁹."

Investment decisions and behavior

Often women are more reluctant to take financial risks than men, according to various research papers.²³

This can also be seen in women's pension allocations.²⁴ Different studies suggest that gender differences in taking risks are the same between cultures²⁵ (an exception is China, where women are just as likely to hold an 'aggressive' portfolio as men²⁶). Women and men also typically process information about probabilities differently, with women less sensitive to probability changes than men.²⁷ Finally, research also shows that women appear to be more pessimistic about medium and large probabilities of gains, which contributes to them being more risk-averse.

Numerous surveys and studies highlight women's relative lack of financial confidence when deciding on investments.²⁸ This lack of confidence supports observed differences in women's appetite for risk. This can lead to women having large amounts of cash in their portfolios, and choosing what they believe to be low-risk investments, such as fixed income. Unfortunately, having too heavy an exposure to cash or fixed income may mean that clients don't receive the returns they require to achieve their ambitions or pay for the things they need. To achieve their financial goals, it is essential women become more confident about investing. However, just because women in general tend to be less confident about investing than men, doesn't mean they know less about financial markets. Overall, when deciding on investments, women often spend more time researching and finding information than men.²⁹

Women generally want to be financially disciplined, and therefore are more likely to invest in a disciplined way than men. They are also more likely to follow a plan for their wealth and less likely to try to 'time the market' (such as buying and selling assets opportunistically).³⁰ Women also tend to trade less, which helps their portfolios outperform men's portfolios with the same risk/return profile.³¹ Overall, women tend to connect their needs and life goals with their investments.

²³ Yao, Hanna 2005, Jionakoplos & Bernsek 1996.
²⁴ Croson, 'Gender difference in investment Behaviour', 2009.
²⁵ Croson, 2009.
²⁶ CTI, 'Power of the purse', 2014.
²⁷ Fehr-Duda, Gennaro and Scubert (2004).

²⁸ Croson, 2009.

²⁹ State Street, 'Closing the gender gap of advice'.

³¹ Barber 2001.

³⁰ Croson, 2009.

How do the differences affect their wealth?

Objectives – financial and non-financial

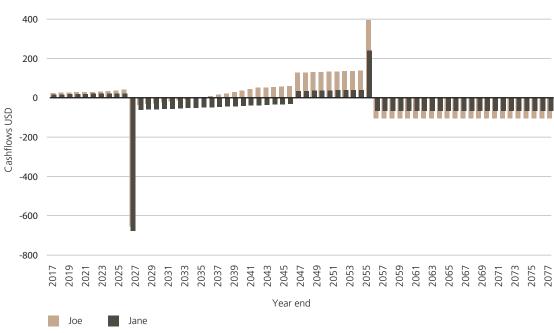
This section looks at how some of these observed differences can affect the wealth of an illustrative woman and man throughout their lives.

Joe and Jane are 25, have recently started work, and want to:

- preserve and grow their inheritance of USD 1 million for the next generation
- buy a house at the age of 35
- enjoy a decent lifestyle during retirement.

This illustration shows Joe's and Jane's cash flows (salary less expenses), including salary increases during their most productive years (30 to 50). The actual amounts assumed in our analysis are only illustrative. However, they enable us to compare how Joe's and Jane's wealth develops throughout their lives. Jane and Joe are treated as individuals, each with their own independent wealth journey.

*Please see Methodology within the Appendix.



Joe and Jane cash flows

For illustrative purposes only. Forecasts are not a reliable indicator of future performance / results.

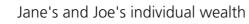
Joe's and Jane's individual wealth

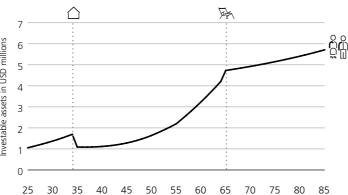
As the following illustration shows. Joe and Jane can both achieve their goals, assuming their investments deliver an average 3% return each year. After buying their homes, and before retiring, their investable assets increase significantly. This is due to compounding (investment earnings are also reinvested); and their net income increasing during their most productive years.

Assumptions:

- Jane's starting salary is slightly lower

than Joe's due to the gender salary gap.







Aae

Joe and Jane, Age 25

Starting salary: 110k (inheritance of 1 million at age 24) Salary increase: 1% [25-30 years], 4% [31-51 years], 2% [52-64 years] Starting expenses: 70k Expenses growth: 0% [25-30 years], 2% [31-51 years], 3% [52-64 years]

C. Lower net income diminishes Jane's

– Jane's salary will grow less than Joe's because she takes a short career break and starts part-time work. – Jane's expenses will grow less than Joe's. - Our assumptions about their pension and real estate are the same.

й Joe

ມັ Jane

12



wealth dramatically FA \triangle \cap In addition, we assume Jane has a flexible work arrangement whereby she works parttime, which stalls her career further. This results in a 96% decrease in the value of her wealth as illustrated on the left. Retirement, Age 65 Pension: 10% salary contribution 70 75 80 25 30 35 40 45 50 55 60 65 Pension payout vs. annuity: 50% 25 30 35 40 45 50 55 60 65 Aae Pension conversion rate: 6.8% Aae Effective tax rate: 15% Flexible employment Pay gap Career break Pay gap Career break Impact of Jane's longer life expectancy FA. E. Jane's conservative \triangle D. Impact of Jane's longer life investment approach may expectancy damage her investment As expected, Jane's lower net portfolio income harms her wealth Jane's situation becomes even significantly over her lifetime. The worse if she invests too following example shows that conservatively. Women Jane would not be able to sometimes tend to have a lower achieve her goal of passing risk tolerance. The following Ó wealth to the next generation. illustration shows the effect of Even more importantly, as Jane's investment portfolio 25 30 35 40 45 50 55 60 65 70 75 80 85 90³ women typically live longer t delivering returns of 1% a year men, Jane will also struggle to rather than the previously Pay gap Career break Flexible employment maintain her lifestyle. assumed 3%. Life expectancy Pay gap Life expectancy

For illustrative purposes only. Forecasts are not a reliable indicator of future performance / results See detailed assumptions on Joe and Jane case study on page 20. Readers should not rely on the assumptions and outcomes detailed above to determine any investment strategy or draw any investment conclusions.

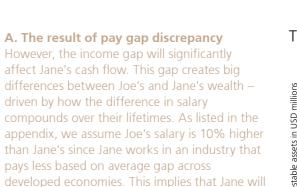
25 30 35

40

70 75 80

 \wedge

85



A. The result of pay gap discrepancy However, the income gap will significantly

driven by how the difference in salary

pays less based on average gap across

figure illustrates these difference.

Value: 2.0n

• • • • • • • • • • • • • •

Mortgage: 1.3m

The result of Jane taking a short career break

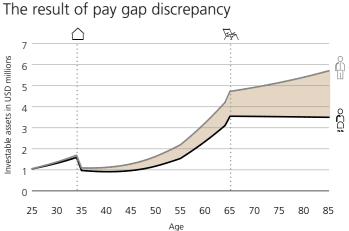
Annual interest rate: 1.50%

Amortization: 20 years

earn around USD 800,000 less than Joe over

her working life. Jane will therefore have 38% less wealth by age 85 than Joe. The following

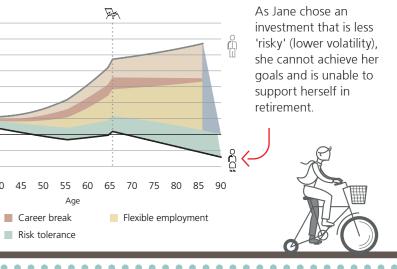
Buying a home, Age 35



Pay gap



Jane's conservative investment approach may damage her investment portfolio



A portfolio for life

Choosing the investment portfolio that best fits clients' goals and personalities is a crucial step towards successful investing.³² Individuals can benefit over time by staying invested, even during negative and uncertain market conditions.³³

The examples show how Jane's life events, situations, choices and perceptions about risk may harm her ability to achieve her financial ambitions. When determining an investment portfolio (strategic asset allocation) for Jane, she should consider how likely it is that the portfolio will achieve her goals. Considering financial market risk (volatility) alone does not give a complete picture, as it fails to address the risk of not meeting a financial goal. Our example shows that, if Jane wants to achieve her goals, a conservative portfolio with low volatility jeopardizes her ability to achieve her objectives, and therefore isn't the most prudent financial plan.

We determined the right asset allocation for Jane, considering her different needs and circumstances throughout her life. We assumed Jane has a medium tolerance for risk.

Our analysis shows that Jane would most likely not be able to achieve her goal of preserving and passing on her USD 1 million wealth to the next generation. In fact, to meet her objective with a reasonably high probability (over 80%), she would need to halve her goal of passing on wealth to USD 0.5 million. If Jane wants to maximize the likelihood of achieving her goals, she should follow a 'medium risk' strategy until she retires, when she could afford to move her money into a less risky 'moderate risk' strategy. Or Jane could choose to maintain the medium risk strategy throughout her life. While the probability of meeting her goals would remain just above 80%.³⁴

Going back to Joe, our analysis shows he does not need to take as much financial market risk as Jane. He has much greater flexibility than Jane when choosing a strategy to help him meet his objectives.

³² UBS Strategic Asset Allocation (SAA) Methodology and Portfolio, April 2017.

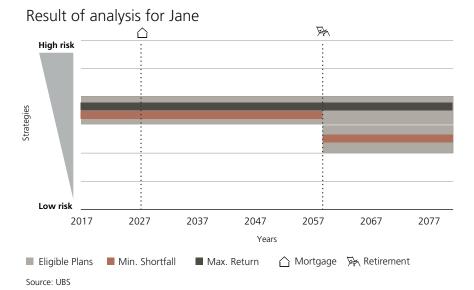
- ³³ UBS House View Year Ahead 2017.
- ³⁴ Without including fees
- ³⁵ The output of appropriate strategies reflect Jane's personal circumstances and our set of risk strategies.



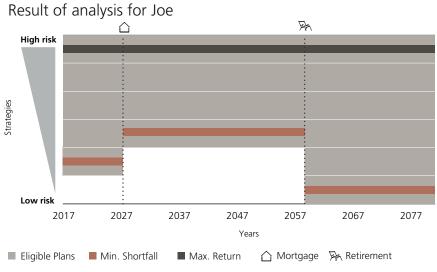
The approach that has been taken for Jane and Joe may not be suitable for all investors. For illustrative purposes only. Forecasts are not a reliable indicator of future performance / results.

For a detailed list of references please see page 19. Jane, like all clients, should receive investment advice that is relevant to her personal circumstances.

Shortfall risk (the likelihood of not meeting objectives) should be included when making decisions.



Note: Using the shortfall risk considerations (likelihood of meeting clients' financial goals) as an approach to determine the inter-temporal asset allocation for Jane and Joe. All eligible plans have a likelihood above 80% of meeting the stated client objectives.³⁵



Source: UBS

Note: Minimum shortfall strategy allows for probability of meeting goals of 99.8% with an expected annual return of 3.77%. The maximum return strategy, given the shortfall constraint, allows for a probability of 95.7% with an annual expected return of 7.32%.³⁵

For illustrative purposes only. Forecasts are not a reliable indicator of future performance / results

Through our analysis we identified the appropriate portfolio over the lifetime. Primarily due to more limited cashflow, Jane has restricted options if she wants to meet her objectives.

Joe has much greater flexibility in his investment options because he is relying less on generating returns with a high degree of certainty in order to meet his objectives. "By taking calculated and well managed risks, Jane improves her expected returns significantly – and can confidently achieve her goals."

To meet her objectives, Jane must invest all her funds strategically. Joe, whose income and therefore cashflow is higher, could use some of his assets to meet other goals, such as philanthropy. In our analysis we separated financial and emotional goals. First, we determined the assets the client needs to achieve their objectives. Surplus assets, if any, are allocated to the legacy or emotional portfolio.

Wealth projection for Jane and Joe following our analysis



If we assume that both Jane and Joe would follow the result of our analysis, their expected wealth journeys would be as illustrated on the right:

Note: Wealth of Joe and Jane following median path of strategy that maximizes likelihood of meeting objectives.

The figure above shows how Joe's and Jane's wealth compares and how, looking at the median case, they would achieve all their objectives comfortably, despite their circumstances being so different. However, looking only at the expected path gives an incomplete and potentially misleading picture.

As mentioned before, Jane's wealth still risks falling below USD 0.5 million at the end of her life. By taking calculated and well managed risks, Jane can improve her expected returns significantly – and address her goals with a greater degree of confidence.

The approach that has been taken for Jane and Joe may not be suitable for all investors. For illustrative purposes only. Forecasts are not a reliable indicator of future performance / results.

Conclusion

In our example Jane needs to stay disciplined and invest in a specific portfolio over her lifetime, if she is to achieve her financial objectives.

The impact of the gender pay gap and longer lifespans on women's wealth can be reduced by:

- accounting for individual circumstances in their lives, including their financial goals
- defining and recommending portfolios that maximize the likelihood of them achieving their goals
- helping women feel more confident about investing and, understanding the relationship between risk and return.

Clients should make investment decisions based on their specific circumstances, e.g. goals and perceptions about investing. Increasing women's financial confidence will help women achieve their goals, and understand the rewards they may receive by taking some risks within their investment portfolios.



"Despite 10 years as a professional in the financial services industry, seeing the big picture – it's a wake up call. Time to step-out of the safety-trap."

> Olga Miler, Global Program Architect UBS Unique

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Appendix

Methodology Overview:

Assumptions Joe

We looked at an illustrative 'Jane' and 'Joe' in order to illustrate how, when compared to Joe's, Jane's circumstances, financial confidence and attitude to investing impact her wealth journey. Jane and Joe are treated as individuals, each with their own independent wealth journey.

Using realistic assumptions about Joe's life we constructed a wealth journey for Joe, assuming typical goals and moderate investment returns. We then looked at how pay disparity, career discontinuity, work flexibility, living longer and avoiding risk impacts Jane's wealth journey.

We determined, using Monte Carlo simulation, the portfolio that would allow Joe and Jane to meet their objectives while minimizing shortfall risk, as well as the range of possible strategies that would allow them to meet their objectives with confidence.

Note to the below assumptions: This is an illustrative example to showcase the impact of the discrepancies. We chose the figures for their ease of illustration rather than representativeness of global median incomes. Readers should not rely on the assumptions and outcomes detailed above to determine any investment strategy or draw any investment conclusions

Net income	
Starting salary	USD 110k
Salary increase	1% [25-30 years], 4% [31-51 years], 2% [52-64 years]
Starting expenses	USD 70k
Expenses growth	0% [25-30], 2% [31-51], 3% [52-64]
Inheritance	USD 1 million at age 24
Pension	
Pension	10% salary contribution
Pension payout vs. annuity	50%
Pension conversion rate	6.8%
Effective tax rate	15%
Real estate	
Value	2.0m
Mortgage	1.3m
Annual interest rate	1.50%
Amortization	20 years

Assumptions Jane

Net income	
Starting salary	USD 100k
Salary increase	1% [25-30 years], 0% [31-35 years], 1.3% [36-64 years]
Starting expenses	USD 70k
Expenses growth	0% [25-30], 1% [31-35], 1% [35-64]
Inheritance	USD 1 million at age 24
Pension	
Pension	10% salary contribution
Pension payout vs. annuity	50%
Pension conversion rate	6.8%
Effective tax rate	15%
Real estate	
Value	2.0m
Mortgage	1.3m
Annual interest rate	1.50%
Amortization	20 years

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Accordingly, if the Offshore Investment Rules apply to an investor, the investor may be required to include in taxable income amounts that the investor has not earned or received. The Tax Act contains rules for the taxation of income of non-resident trusts (the "NRT Rules"). These rules will not apply in respect of "exempt foreign trusts" (as defined in the Tax Act). Subject to detailed provisions, exempt foreign trusts would generally include

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