

Deloitte Access Economics

Extrapolated returns  
from investment in  
medical research  
future fund (MRFF)

Australian Society for  
Medical Research

17 October 2014

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Extrapolated returns from investment in medical research future fund (MRFF)

Dr Roger Yazbek  
President  
The Australian Society for Medical Research  
Level 7, Suite 702, 37 Bligh Street  
Sydney NSW 2000

Deloitte Access Economics Pty Ltd  
ACN: 149 633 116

Level 1, 9 Sydney Ave  
Barton ACT 2600  
PO Box 6334  
Kingston ACT 2604

Tel: +61 2 6175 2000  
Fax: +61 2 6175 2001  
[www.deloitte.com.au](http://www.deloitte.com.au)

17 October 2014

Dear Roger,

**Extrapolated returns from investment in medical research future fund (MRFF)**

Please find attached our final report. It has been a pleasure working with you to demonstrate the impact the MRFF will have on health and productivity returns in Australia.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Lynne Pezzullo', with a stylized flourish at the end.

Lynne Pezzullo  
Lead Partner, Health Economics and Social Policy, Deloitte Access Economics Pty Ltd  
Office Managing Partner, Canberra, Deloitte Touche Tohmatsu

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# Glossary

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AIHW	Australian Institute of Health and Welfare
ASMR	Australian Society for Medical Research
BCR	benefit-cost ratio
BOD	burden of disease
DALY(s)	disability adjusted life year(s)
DWL	deadweight loss
GFC	global financial crisis
HHF	Health and Hospital Fund
MRFF	Medical Research Future Fund
NPV	net present value
NHMRC	National Health and Medical Research Council
R&D	research and development
VSLY	value of a statistical life year

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# Executive Summary

The Australian Society for Medical Research (ASMR) is a professional society representing Australian health and medical researchers. With nearly 2,000 direct members, the ASMR has an important role in public, political and scientific advocacy which includes securing Government funding for the Australian health and medical research sector.

Deloitte Access Economics was commissioned by the ASMR to model the effects that the Medical Research Future Fund (MRFF) could have on medical research, and particularly the returns from the fund on health expenditure and productivity. This report also considers the possibility of a delay in the MRFF reaching its target level of investment, for example due to delays in the passage through Parliament of associated budgetary measures. In addition, an assessment is provided of the potential impact of a downturn in markets, similar to the Global Financial Crisis (GFC) of 2007-08, on MRFF returns.

## MRFF assets and returns

The MRFF is expected to provide distributions for investment into medical research from 2015-16 in addition to current National Health and Medical Research Centre (NHMRC) health research and development (R&D) expenditure. NHMRC expenditure is assumed to grow by 2.5% annually from 2018-19 onwards. Including MRFF distributions, total combined R&D funding is expected to reach over \$2 billion in 2022-23.

This estimate is contingent upon the passage of legislation through Federal Parliament, and the measures being sustained until at least 2019-20, when the fund is expected to reach its target asset value of \$20 billion. In the absence of MRFF distributions, total NHMRC R&D funding is expected to be \$1.01 billion by 2022-23.

## Health system expenditure

Government health expenditure data were estimated annually for the period 2013 to 2023. Total government health system expenditure in 2012-13 was \$100.8 billion. Federal and State Government expenditure made up \$61.0 billion and \$39.8 billion of the total, respectively. From 2013 to 2023 it is projected that health expenditure would grow at an average rate of 6.8% and increase to \$193.8 billion by 2022-23. Federal and State Government expenditure would make up approximately \$117.3 billion and \$76.5 billion of the total, respectively.

## Health and productivity returns

An increase in wellbeing provides additional benefits to the economy and society by reducing burden of disease (BOD), avoiding direct health system costs and also avoiding associated indirect costs. Indirect costs include: productivity gains from the avoidance of premature mortality and morbidity; avoided carer costs; avoided aids and home modifications costs; and avoided deadweight loss (DWL) associated with government transfers such as taxation revenue forgone and welfare and disability payments. BOD is

measured as disability adjusted life years (DALYs) averted, converted to a dollar value using the value of a statistical life year (VSLY).

Estimates of the direct and indirect costs avoided due to improved wellbeing from NHMRC and MRFF funded R&D were calculated from previous Deloitte Access Economics cost of illness studies, which estimated that the midpoint of benefits accrue with approximately a 40 year time lag. The net present value (NPV, 2014 dollars) of benefits provided by MRFF distributions in addition to NHMRC expenditure is \$14.2 billion. These benefits are estimated to accrue over the 10 years between 2052-53 and 2062-63. The additional benefits are seen in the following areas:

- \$7.7 billion reduction in BOD;
- \$1.3 billion direct health system expenditure savings;
- \$1.9 billion reduction in productivity loss;
- \$0.6 billion reduction in other financial costs;
- \$0.3 billion reduction in DWL; and
- \$2.6 billion value of commercialisation.

The benefit-cost ratio (BCR) considering only NHMRC expenditure is 3.19. The BCR considering MRFF funding in addition to current NHMRC expenditure is 3.39. **Every \$1 from the MRFF invested in medical research returns \$3.39 in future health and productivity gains.**

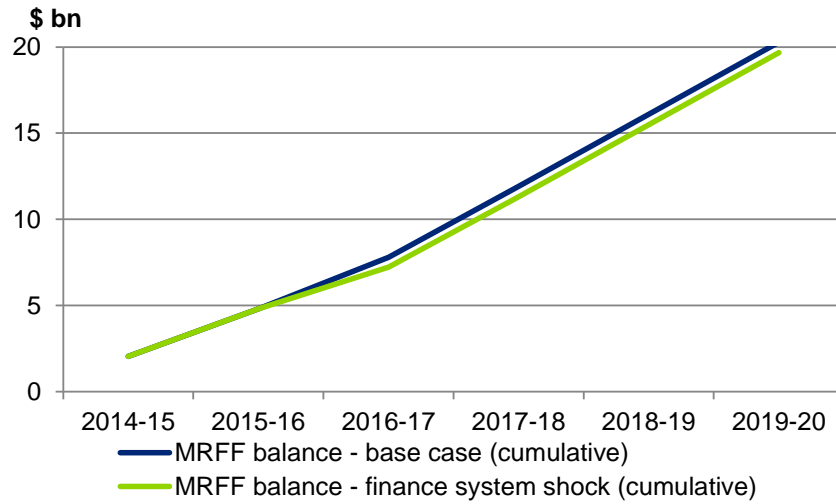
The MRFF has the potential to avert a significant proportion of the BOD on the health system and society, which is borne primarily by individuals through morbidity and mortality, but also by society through reduced demand on health services. The improved BCR highlights the immense value of this investment.

## Sensitivity analysis

The sensitivity analysis in this report investigated two types of scenarios. The first scenario considered the impact to the Australian economy from a GFC type shock. It was estimated that the shock would reduce the assets of the MRFF by approximately \$0.55 billion in the year that it hits and that the fund would reach its target of \$20 billion with a one year delay, in 2020-21 rather than 2019-20 in the base case (see Chart i). **The associated reduction in health and productivity benefits was estimated to be \$186.5 million.**

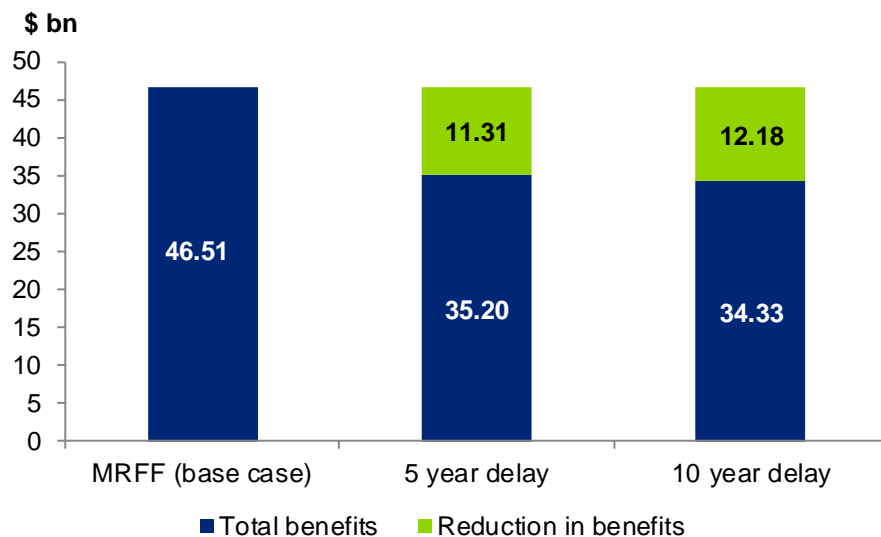


**Chart i: Estimated MRFF assets with financial market downturn**



The second scenario considered the impact that a 5 or 10 year delay in the MRFF reaching its target distributions of \$1 billion annually by 2022-23 would have on total health and productivity returns. Estimated health and productivity benefits were more sensitive to a 10 year delay in the MRFF reaching its target, **reducing by a total of \$12.2 billion**, or \$0.9 billion more than under a 5 year delay scenario (\$11.3 billion).

**Chart ii: Reduction in benefits as a result of a delay in the MRFF reaching its target funding**



# 1 Background

Deloitte Access Economics was commissioned by the ASMR to examine the potential returns on health expenditure and productivity that an increase in NHMRC funded research could deliver, where that funding increase comes from the operation of the MRFF. This report builds upon the 2012 Deloitte Access Economics report *Extrapolated returns on investment in NHMRC medical research*, which examined prospective NHMRC expenditure from 2012 to 2022. That report examined NHMRC research investment across five specific disease categories over an extended time horizon (2012 – 2022) and found that every dollar spent on additional NHMRC R&D resulted in seven cents returned in health expenditure savings in the future, along with other benefits that together bring returns to investment greater than 2:1. This report extends the methodology to consider the impact of increased NHMRC expenditure from the MRFF earnings.

## 1.1 The MRFF

The MRFF is a government initiative designed to maintain Australia's medical research sector and secure a sustainable health system into the future. The fund is due to commence 1 January 2015, and will invest savings in health expenditure from the Commonwealth Budget into funding for medical research, in addition to existing funding arrangements. Health expenditure savings measures put forward by the *2014-15 Commonwealth Budget* include:

- increases to Pharmaceutical Benefits Scheme co-payments and safety net thresholds;
- pausing indexation of Medicare rebates;
- pausing indexation of the Medicare Levy Surcharge and Private Health Insurance Rebate income thresholds; and
- revised hospital funding arrangements to states.

At its inception, the MRFF will also be seeded with \$1 billion of uncommitted funds from the existing Health and Hospital Fund (HHF) which is planned to be closed. The MRFF will continue to grow until its value reaches \$20 billion (expected in 2019-20), and will preserve its capital and capital gains to perpetuity. Net earnings from the MRFF for any given year will be available for the next year to fund medical research through payments primarily to the NHMRC.<sup>1</sup>

The NHMRC was established in 1936 and administers research funding on behalf of the Australian Government and, in addition, contributes to the development of health advice and standards for ethical behaviour in the conduct of health and medical research. It is expected that payments to the NHMRC from the MRFF would form a permanent revenue stream commencing in 2015-16, with distributions expected to reach approximately \$1 billion per year by 2022-23. This represents an approximate doubling in NHMRC funding. Section 2.1 provides further information about the estimated assets and returns expected to be available from the MRFF.

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<sup>1</sup> The impacts estimated in this report assume that all payments are provided to the NHMRC.

The funds of the MRFF are to be managed and invested by the Future Fund Board of Guardians. The board currently administers the Future Fund, comprising the Government's public sector superannuation liabilities, and three specific nation building funds established by the Government. These are the Education Investment Fund, Building Australia Fund, and HHF.

The availability of funds through the MRFF is contingent on passage of health expenditure savings measures through both houses of Federal Parliament, and the measures being sustained until at least 2019-20. Should these measures be delayed, fail to pass, or fail to generate the predicted levels of savings, the ability of the MRFF to accumulate capital and deliver research funding could be adversely affected.

A postulated delay in the MRFF reaching its target of \$20 billion in 2019-20 is further discussed in Section 2.2 of this report.

## 2 Methodology and findings

This report builds on the methodology developed in earlier Deloitte Access Economics reports prepared for the ASMR:

- Deloitte Access Economics, *Extrapolated returns on investment in NHMRC medical research*, Australian Society for Medical Research, 17 February 2012.
- Deloitte Access Economics, *Returns on NHMRC funded Research and Development*, Australian Society for Medical Research, 17 October 2011.

These reports assessed benefits of NHMRC funding across five major disease categories: cardiovascular disease, cancer, asthma, Sudden Infant Death Syndrome and Muscular Dystrophy. The main benefits of NHMRC research assessed by these reports were gains in wellbeing or reductions in BOD, measured as DALYs averted, converted to a dollar value using the VSLY. The VSLY is \$179,471 in current dollars.<sup>2</sup> The reports outline that the midpoint of benefits are estimated to accrue 40 years after the initial investment. However, only a proportion of these gains, in NPV terms, can be attributed to NHMRC R&D. The analysis is dependent on three main parameters:

1. 50% of gains were attributed to R&D rather than other causes, such as improvements in environmental factors (e.g. sanitation) or public policies (e.g. health promotion);
2. 3.14% of R&D gains were attributed to Australian R&D rather than overseas R&D; and
3. 24.04% of Australian R&D gains were attributable to NHMRC R&D rather than other Australian R&D.

Other benefits were commercial returns measured through market capitalisation modelling, the value of avoiding direct health system expenditure, and the value of avoiding indirect costs e.g. productivity gains from avoiding premature mortality, and avoiding the costs of informal care, aids and home modifications, and DWL associated with government revenue foregone and welfare and disability payments.

This report builds on the methodology established by the earlier reports although, in contrast, it considers the impact of increased NHMRC funding across all disease categories to provide a more holistic assessment of the potential benefits flowing from the MRFF.

### 2.1 MRFF assets and returns

As described in Section 1.1, the assets and returns of the MRFF will build over time, eventually reaching a capital stock of \$20 billion, and providing returns of approximately \$1 billion annually. This will be in addition to current NHMRC health R&D expenditure.

Amounts equal to the estimated value of health savings measures published in the 2014-15 Budget will be reinvested in the Fund from 2014-15 to 2019-20 until it reaches its target

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<sup>2</sup> <https://www.dpmpc.gov.au/deregulation/obpr/docs/ValuingStatisticalLife.pdf>

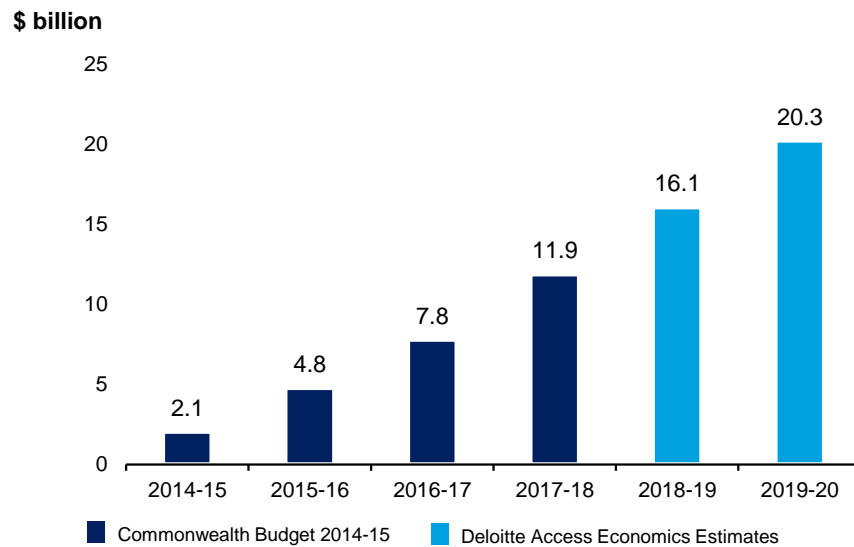
asset value of \$20 billion. Net interest earnings on the MRFF capital or asset value will be available for use the following financial year, ensuring that the asset value of the MRFF is preserved in perpetuity.

To estimate the assets in 2018-19 and 2019-20, it is assumed that the value of health system savings reported by the Commonwealth of Australia (2014) will remain at the same level as in 2017-18, while capital returns grow at the same rate as in the years 2014-15 to 2017-18.

The growth in returns between 2019-20 and 2022-23 is distributed evenly between 2020-21 and 2021-22. The weighted average rate of return on assets over the period 2014-15 to 2022-23 is assumed to be 3.7%. From 2022-23 onwards, it is assumed that asset values no longer grow, and the rate of return remains at approximately 5% each year.

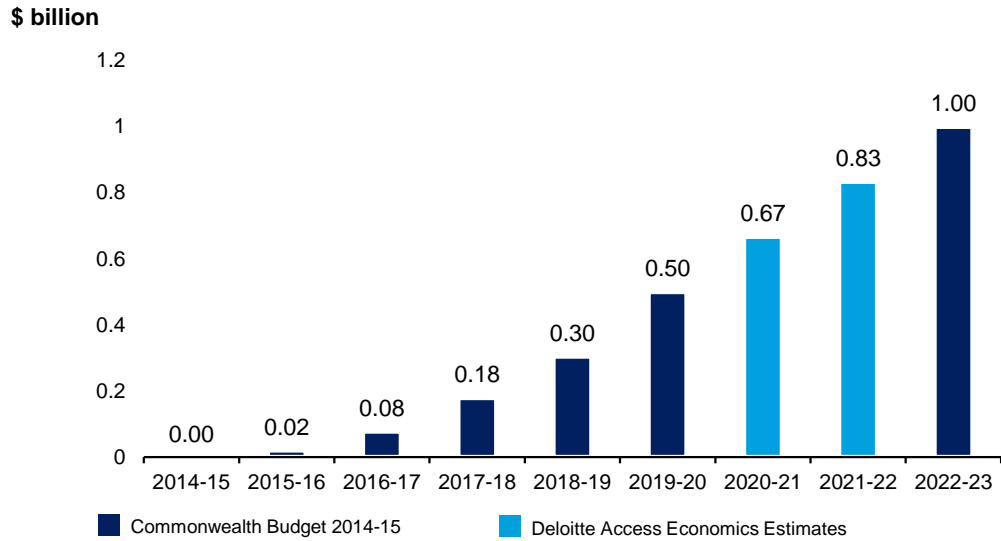
Chart 2.1 and Chart 2.2 show the forecast growth in the balance of the MRFF and its distributions respectively.

**Chart 2.1: Projected MRFF balances**



Source: Commonwealth of Australia (2014); Deloitte Access Economics calculations.

**Chart 2.2: Available medical research funding from MRFF distributions**



Source: Commonwealth of Australia (2014); Deloitte Access Economics calculations.

NHMRC health R&D expenditure provides benefits through avoided health system expenditure, reduced BOD and reduced indirect costs, such as productivity losses due to disease. Projections of NHMRC health R&D expenditure to 2017-18 are provided in the 2014-15 Portfolio Budget Statements (Department of Health, 2014). These projections are assumed to grow by 2.5% annually from 2018-19 onwards, as suggested by the Commonwealth of Australia (2014). Inflation is also assumed to be 2.5% annually.

The level of NHMRC R&D expenditure and MRFF returns is presented in Table 2.1. Chart 2.3 provides a graphical representation of the expenditure on R&D between 2012-13 and 2024-25.

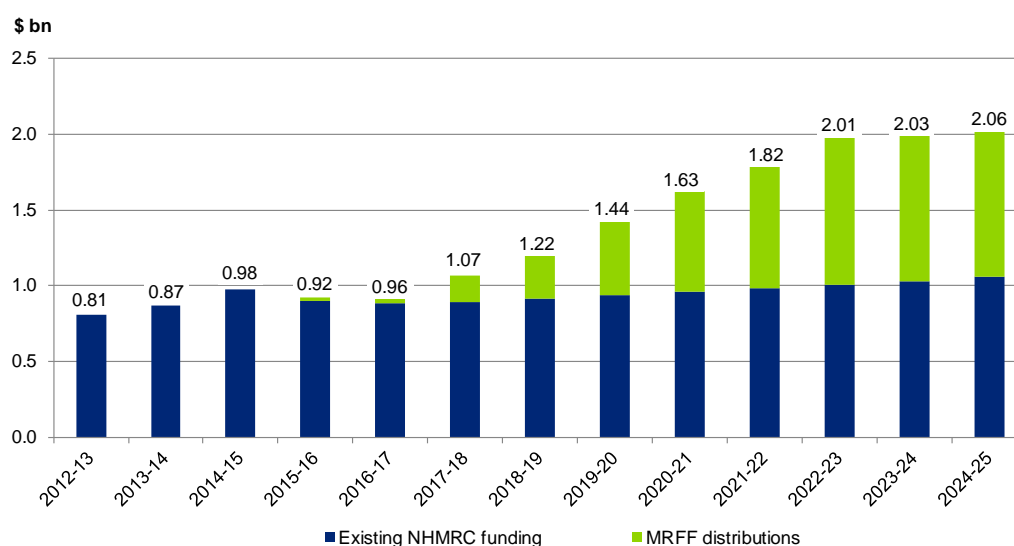
**Table 2.1: Existing NHMRC medical research funding and MRFF distributions, \$ million**

	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
NHMRC funding	805	871	977	902	881	890	913	935	959	983	1,007
MRFF distributions	0	0	0	20	77	179	304	500	667	833	1,000
<b>Total expenditure on R&amp;D</b>	<b>805</b>	<b>871</b>	<b>977</b>	<b>922</b>	<b>958</b>	<b>1,070</b>	<b>1,217</b>	<b>1,435</b>	<b>1,625</b>	<b>1,816</b>	<b>2,007</b>

Note: numbers may not sum precisely to totals due to rounding.

Source: Commonwealth of Australia (2014), Department of Health (2014) and Deloitte Access Economics calculations.

**Chart 2.3: Existing NHMRC medical research funding and MRFF distributions**



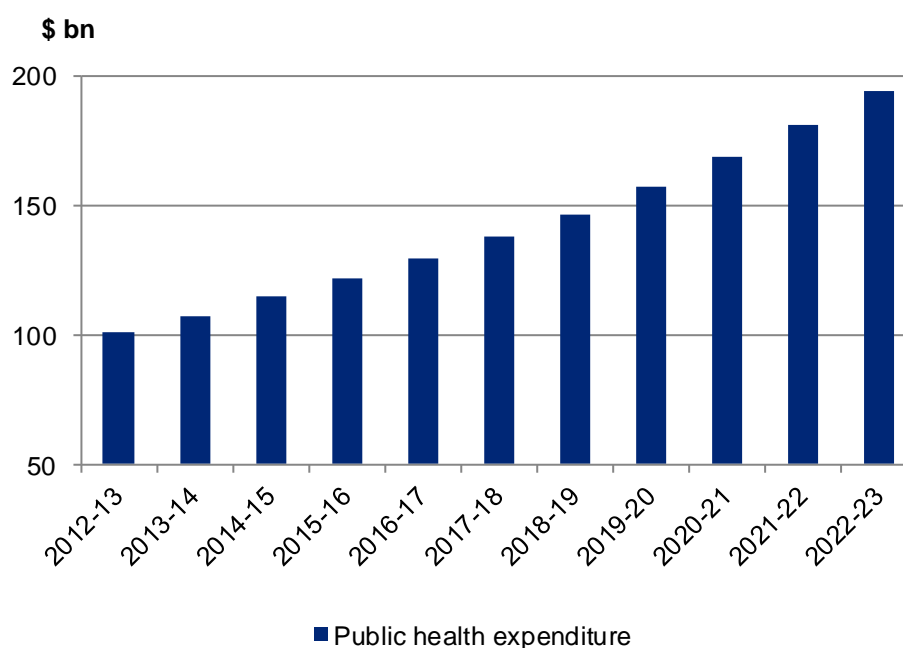
Source: Commonwealth of Australia (2014), Department of Health (2014) and Deloitte Access Economics calculations.

### 2.1.1 Health system expenditure

Public health system expenditure was modelled by taking historical health expenditure reported by the Australian Institute of Health and Welfare (AIHW, 2014), and applying health expenditure growth rates from Intergenerational Reports (Deloitte Access Economics, 2011, 2012).

In 2012-13, public health expenditure was \$100.8 billion. Federal and State Government expenditure made up \$61.0 billion and \$39.8 billion of the total, respectively. It is projected that health expenditure will almost double by 2022-23, increasing to \$193.8 billion. Assuming a similar proportion to 2012-13, Federal and State Government expenditure would respectively make up approximately \$117.3 billion and \$76.5 billion of the total expenditure in 2022-23.

**Chart 2.4: Estimated health system expenditure, 2012-13 to 2022-23**



Source: AIHW (2014), Deloitte Access Economics (2011, 2012), and Deloitte Access Economics calculations.

### 2.1.2 Health and productivity returns

The methodology for estimating health and productivity returns is described by Deloitte Access Economics (2011). Updates to the model are described below.

As previously mentioned, instead of modelling for five disease types and scaling the estimates based on the proportion of GDP, this report now models for all of the broad category disease types, as reported in Begg et al (2007).

In addition, rather than using base years of 2011-12 and 2021-22, health and productivity returns are now based on R&D expenditure occurring between 2012-13 and 2022-23, with the returns still occurring 40 years later. Costs are calculated as the present value of the sum of R&D expenditure occurring over the 10 years between 2012-13 and 2022-23. The previous Deloitte Access Economics' (2011, 2012) reports estimated that the midpoint of benefits accrue with a 40 year time lag. Following this methodology, benefits are calculated as the present value of the health and productivity returns over the 10 years between 2052-53 and 2062-63.

The 2011 report found that a 100% increase in health R&D expenditure increases the DALYs averted by 0.39%. The increase in expenditure was calculated for each year (based on Chart 2.3), and multiplied by 0.39% to give the increase in DALYs averted. The DALYs averted are relative to 2013 levels of BOD.

The value of NHMRC funded health R&D (both excluding and including additional expenditure from the MRFF) is presented in Table 2.2. Both benefits and costs are discounted using a 3% discount rate, and are reported in 2014 values.



**Table 2.2: Value of NHMRC funded health R&D – All causes, 40 year time lag**

Type of benefit	Base case	Base case and MRFF
Net improvements in wellbeing (\$m)	16,442.80	24,093.64
Avoided direct health system costs (\$m)	2,723.23	3,990.35
Avoided productivity loss (\$m)	4,027.62	5,901.67
Avoided other financial costs (\$m)	1,173.40	1,719.38
Avoided DWL (\$m)	631.36	925.13
Value of commercialisation (\$m)	7,299.79	9,881.33
<b>Total benefits (\$m)</b>	<b>32,298.20</b>	<b>46,511.50</b>
<b>Total costs (\$m)</b>	<b>10,123.71</b>	<b>13,703.91</b>
<b>BCR</b>	<b>3.19</b>	<b>3.39</b>

Source: Deloitte Access Economics calculations.

It follows that NHMRC medical research funding and MRFF distributions (as outlined in Table 2.1) provide more than **\$14 billion of additional benefits to Australia** compared with NHMRC medical research alone. This comprises:

- \$7.7 billion reduction in BOD;
- \$1.3 billion direct health system expenditure savings;
- \$1.9 billion reduction in productivity loss;
- \$0.6 billion reduction in other financial costs;
- \$0.3 billion reduction in DWL; and
- \$2.6 billion value of commercialisation.

The BCR considering only NHMRC expenditure is 3.19. The BCR considering MRFF funding in addition to current NHMRC expenditure is 3.39. **Every \$1 from the MRFF invested in medical research returns \$3.39 in future health and productivity gains.**

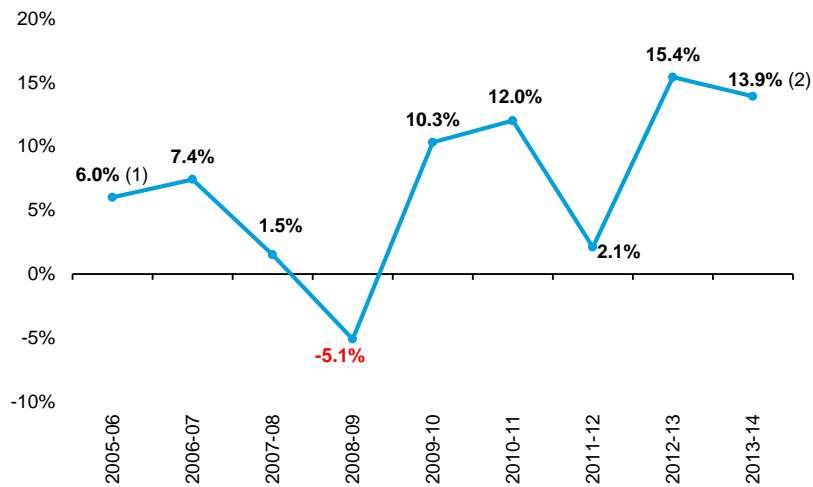
## 2.2 Sensitivity analysis

There are two types of sensitivity analysis considered in this report. The first scenario considers what will happen to MRFF assets and returns in the case of a GFC type shock to the Australian economy. The second scenario considers what will happen to MRFF assets and returns if it takes longer to implement the MRFF than anticipated.

### 2.2.1 Downturn in financial markets

A downturn in financial markets can result in lower returns on investments, and is likely to delay the MRFF reaching its target and affect the distributions available from it. The impact was modelled as a one-period shock occurring in 2016-17 resulting in a reduced rate of return on MRFF investments. This means that less funding is available to be directed towards NHMRC research. The rate of return was assumed to be similar to the historical performance of the Australian Future Fund during the 2007-08 GFC, shown in Chart 2.5.

**Chart 2.5: Nominal returns on Australian Future Fund**



Note: (1) Result has been annualised as the first contribution was made on 5 May 2006. (2) Provisional figure  
 Source: Adapted from Department of Finance (2014).

In line with the above, the scenario analysis involved applying a rate of return of -5.1% to the MRFF in 2016-17. In this scenario, the MRFF would continue to meet its funding commitments to the NHMRC during the period of the shock. The shock and the funding requirement would be absorbed by a reduction in the MRFF’s capital base. In subsequent periods the rate of return would come back to its original trend. However, this rate of return would now apply to an eroded capital base meaning that distributions to NHMRC would be reduced and it would take longer for the MRFF to reach its target capital level of \$20 billion.

The estimated impact of the finance market downturn is shown in Table 2.3, and is compared with the base case. The graphical representation of Table 2.3 is presented in Chart 2.6. The finance system shock is estimated to reduce the MRFF assets by approximately \$0.55 billion in 2016-17. However, it does not significantly delay the MRFF reaching its asset target of \$20 billion, reaching the target one year later.

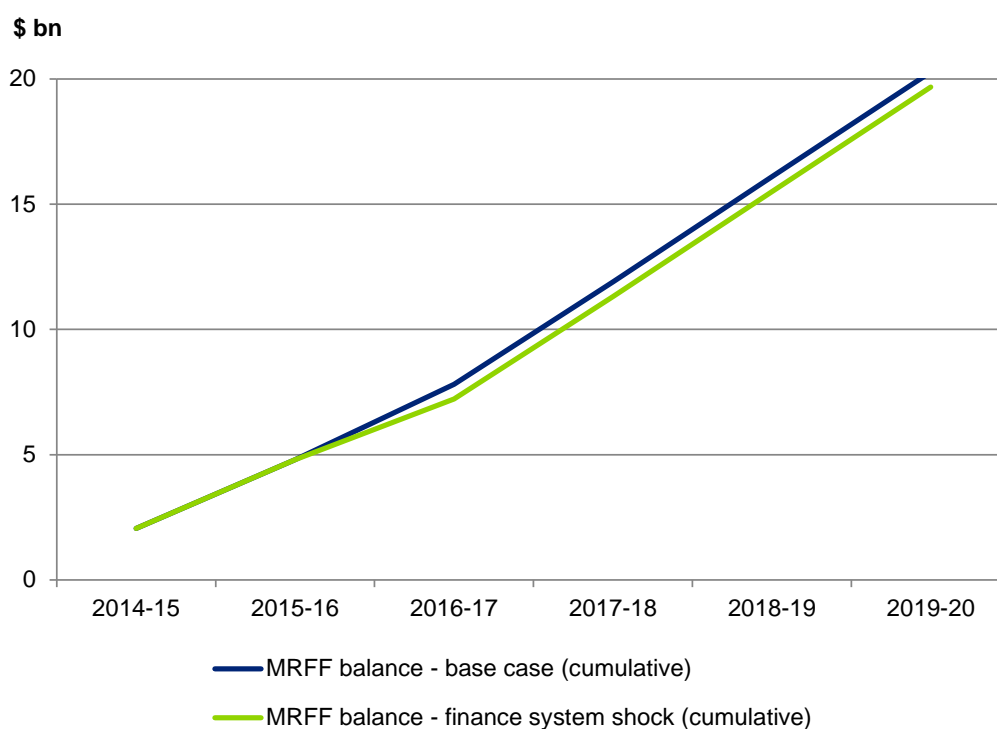
**Table 2.3: Estimated MRFF assets and returns, \$ million**

	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
<b>MRFF base case</b>										
Assets	0	2,054	4,800	7,806	11,905	16,093	20,275	20,275	20,275	20,275
Returns	0	0	20	77	179	304	500	667	833	1,000
<b>MRFF base case with finance system shock</b>										
Assets	0	2,054	4,800	7,229	11,311	15,496	19,677	20,275	20,275	20,275
Returns	0	0	20	77	179	289	481	647	833	1,009

Note: It is assumed that no further investment is made in the MRFF once it reaches target of \$20 billion.

Source: Commonwealth of Australia (2014) and Deloitte Access Economics calculations.

**Chart 2.6: Estimated MRFF assets with financial market downturn**



Source: Commonwealth of Australia (2014) and Deloitte Access Economics calculations.

The impact that this shock has on health and productivity returns is also relatively small since the health and productivity returns occur 40 years in the future, meaning that changes to expenditure are further reduced. **The estimated health and productivity benefits are reduced by a total of \$186.5 million.**

**Table 2.4: Benefits and costs of NHMRC and MRFF funded health R&D, finance shock**

Type of benefit	Base case and MRFF	Finance system shock
Net improvements in wellbeing (\$m)	24,093.64	23,992.22
Avoided direct health system costs (\$m)	3,990.35	3,973.55
Avoided productivity loss (\$m)	5,901.67	5,876.83
Avoided other financial costs (\$m)	1,719.38	1,712.14
Avoided DWL (\$m)	925.13	921.24
Value of commercialisation (\$m)	9,881.33	9,849.07
<b>Total benefits (\$m)</b>	<b>46,511.50</b>	<b>46,325.05</b>
<b>Total costs (\$m)</b>	<b>13,703.91</b>	<b>13,659.17</b>
<b>BCR</b>	<b>3.39</b>	<b>3.39</b>

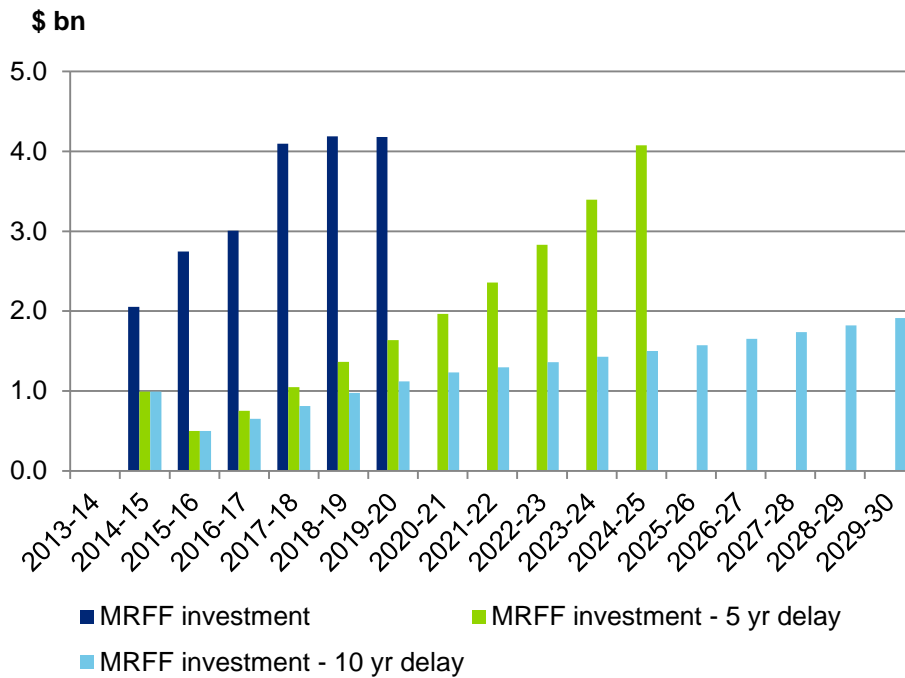
Source: Deloitte Access Economics calculations

### 2.2.2 Delay in MRFF reaching target levels

As discussed in Section 1.1, the ability of the MRFF to reach its target of \$20 billion by 2019-20 is contingent on the passage of associated health expenditure savings through both houses of Parliament and these remaining in force until at least 2020. Shifting public policy priorities, a challenging political environment and the possibility of a change of government are just some factors that could cause delays in the MRFF reaching its target over this time horizon. Therefore, this report considers the possibilities of both a 5 and 10 year delay, with the MRFF reaching its target returns in 2027-28 and 2032-33 respectively, with the assets reaching target 2 years earlier in each case.

Various assumptions about investment in the MRFF are made to model a 5 and 10 year delay. In both cases, the funds from the HHF are transferred to the MRFF. Compared to the base case, the savings that were to be invested under the 5 year delay scenario are proportionally smaller, starting at 50% and then growing to similar investment levels as the base case – only 5 years later. In the 10 year delay scenario, the investment starts at 30% of the base case investment and grows to approximately half of the final base case investment. Chart 2.7 presents the estimated investment stream under each scenario.

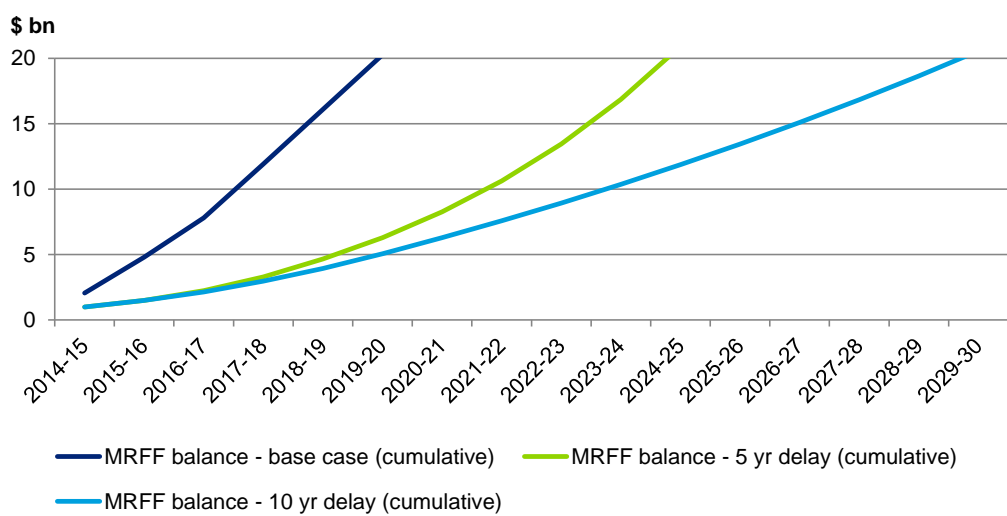
**Chart 2.7: Estimated investment stream**



Source: Commonwealth of Australia (2014) and Deloitte Access Economics calculations.

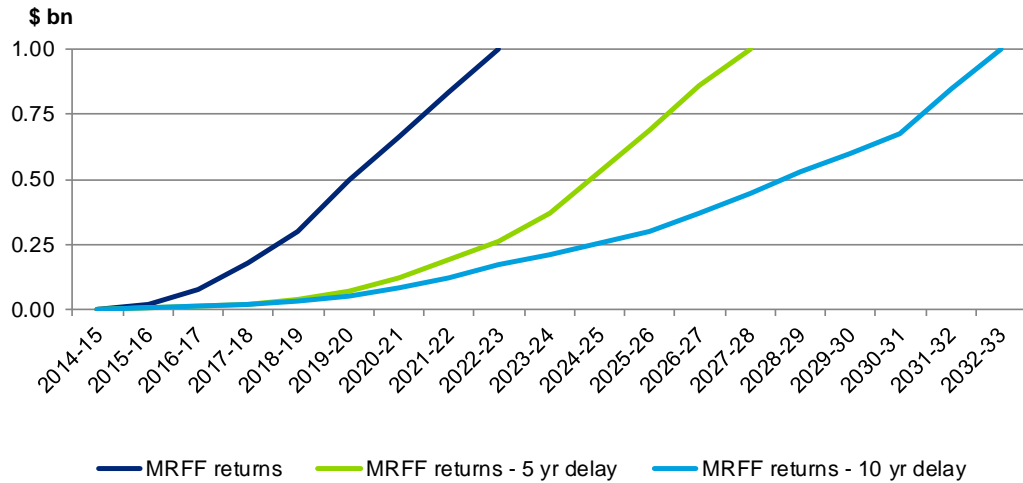
Chart 2.8 and Chart 2.9 show the estimated assets and returns of the MRFF under each scenario. It is assumed that the MRFF will continue to provide the same returns into the future, to calculate the total health and productivity returns from this investment.

**Chart 2.8: Estimated MRFF assets under a 5 and 10 year delay**



Source: Commonwealth of Australia (2014) and Deloitte Access Economics calculations.

**Chart 2.9: Estimated MRFF returns under a 5 and 10 year delay**



Source: Commonwealth of Australia (2014) and Deloitte Access Economics calculations.

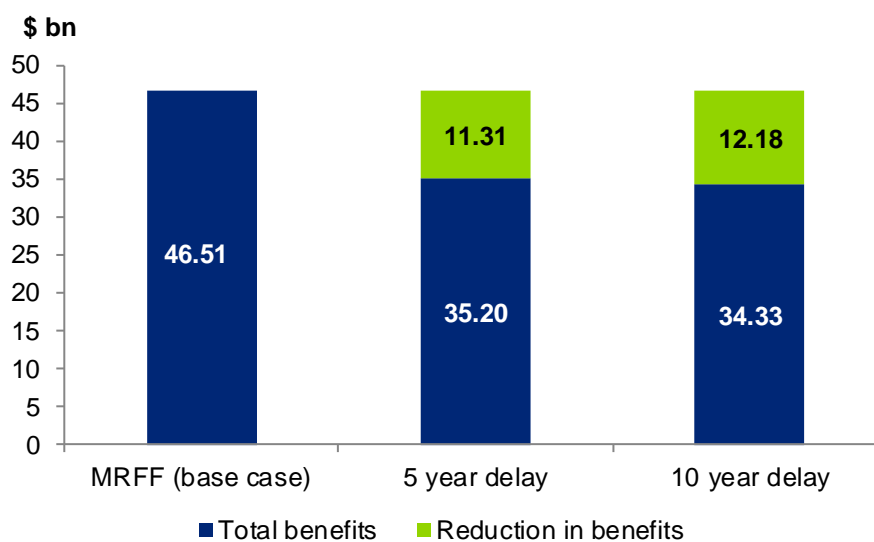
The impact that the 5 or 10 year delay has on total health and productivity returns is presented in Table 2.5. Since the health and productivity returns occur 40 years in the future, the effect of the delay is reduced. However, both delay scenarios still result in substantial impacts for health and productivity returns. **The estimated health and productivity benefits are reduced by a total of \$11.3 billion and \$12.2 billion under the 5 year and 10 year delay scenarios, respectively.** Total net benefits are \$0.9 billion lower in the 10 year delay scenario than in the 5 year case. The BCR for the 5 year delay scenario is 3.24, while the BCR for the 10 year delay scenario is 3.23. Chart 2.10 shows the reduction in benefits resulting from these delay scenarios.

**Table 2.5: Benefits and costs of NHMRC and MRFF funded health R&D, delay scenario**

Type of benefit	Base case and MRFF	5 year delay scenario	10 year delay scenario
Net improvements in wellbeing (\$m)	24,093.64	18,003.23	17,536.46
Avoided direct health system costs (\$m)	3,990.35	2,981.67	2,904.36
Avoided productivity loss (\$m)	5,901.67	4,409.84	4,295.51
Avoided other financial costs (\$m)	1,719.38	1,284.75	1,251.45
Avoided DWL (\$m)	925.13	691.28	673.35
Value of commercialisation (\$m)	9,881.33	7,832.40	7,670.74
<b>Total benefits (\$m)</b>	<b>46,511.50</b>	<b>35,203.17</b>	<b>34,331.87</b>
<b>Total costs (\$m)</b>	<b>13,703.91</b>	<b>10,862.34</b>	<b>10,638.15</b>
<b>BCR</b>	<b>3.39</b>	<b>3.24</b>	<b>3.23</b>

Source: Deloitte Access Economics calculations.

**Chart 2.10: Reduction in benefits resulting from a delay in the MRFF reaching its target funding**



# Conclusion

## Summary of findings

Australian Federal and State government health system expenditure is projected to increase from \$101 billion to \$194 billion in the period 2013 to 2023. The MRFF contribution to Health R&D has the potential to enhance the longevity and quality of life for all Australians, and concomitantly slow the burgeoning health expenditure trajectory. This study estimates the economic benefit returned between 2053-2063 as a result of MRFF contributions to health R&D between 2013 and 2023.

- The MRFF assets will build over time, eventually reaching a capital stock of \$20 billion by 2019-20, and providing returns of approximately \$1 billion annually by 2022-23. This will be in addition to NHMRC health R&D expenditure that would otherwise be forecast to grow at 2.5% (Commonwealth of Australia, 2014).
- Federal and State government health system expenditure is projected to grow at an average of 6.8% per annum and will reach \$194 billion by 2022-23, all other factors remaining constant.
- NHMRC funded R&D and MRFF distributions are estimated to provide additional benefits of more than \$14 billion to Australia compared with just NHMRC funding. This includes:
  - \$7.7 billion reduction in BOD;
  - \$1.3 billion direct health system expenditure savings;
  - \$1.9 billion reduction in productivity loss;
  - \$0.6 billion reduction in other financial costs;
  - \$0.3 billion reduction in DWL; and
  - \$2.6 billion value of commercialisation.
- The BCR of NHMRC and MRFF funded medical research is 3.39, indicating that every \$1 invested in medical research returns \$3.39 in future health and productivity gains.
- A GFC type shock to the economy would reduce the value of the MRFF by approximately \$550 million and reduce health and productivity benefits by \$186.5 million.
- A 5 year delay in the MRFF reaching its target funding of \$20 billion by 2019-20 would result in \$11.3 billion reduction in total health and productivity returns. In contrast, a 10 year delay would cause a reduction of \$12.2 billion.

Investment in health R&D has the potential to deliver long term and enduring gains in the prevention of growth in disease and in more effective and efficient treatment of acute illness, both of which should result not only in improved population health, but in reductions to health expenditure and other costs to government. The findings in this report indicate that any investment costs in medical research would be recouped through health related gains, and represent significant value for money.



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## Contact us

Deloitte Access Economics  
ACN: 149 633 116

Level 1  
9 Sydney Avenue  
Barton ACT 2600  
PO Box 6334  
Kingston ACT 2604 Australia

Tel: +61 2 6175 2000  
Fax: +61 2 6175 2001

[www.deloitteaccesseconomics.com.au](http://www.deloitteaccesseconomics.com.au)

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