Evaluation of the International Finance Facility for Immunisation (IFFIm)

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Abbreviations

DALY	Disability Adjusted Life Year
DFID	Department for International Development
FFA	Finance Framework Agreement
GAVI	GAVI Alliance (formerly the Global Alliance for Vaccines and Immunisation)
GFA	GAVI Fund Affiliate
GPEI	Global Polio Eradication Initiative
HLFC	High Level Financing Condition
HSS	Health System Strengthening
IADB	Inter-American Development Bank
IFF	International Finance Facility
IFFIm	International Finance Facility for Immunisation
ISA	Individual Saving Account
ISS	Immunisation Services Support
IVB	Immunization, Vaccines and Biologicals
LIBOR	London InterBank Offered Rate
LiST	Lives Saved Model
LRC&I	Long Range Cost and Impact model
MDB	Multilateral Development Bank
MDG	Millennium Development Goal
MNT	Maternal and Neonatal Tetanus
(N)PV	(Net) Present Value
NVS	New and Underused Vaccines
SAGE	Strategic Advisory Group of Experts on Immunization
TMA	Treasury Management Agreement
UK	United Kingdom
UNICEF	United Nations Children's Fund
WHO	World Health Organization

1. Executive Summary

1. Key Messages

The International Financing Facility for Immunisation (IFFIm) concept is proven. IFFIm has allowed donor countries to make binding long-term commitments and convert these future cash flows into immediately available funds through the financial markets at a cost very close to that achieved by the World Bank. The case for further investment through IFFIm is strong especially given the heavy up front establishment costs (part of which were covered on a pro bono basis) and economies of scale in implementation.

Had donors met their international aid commitments and provided the resources required to achieve the Millennium Development Goals (MDGs) up front IFFIm funding would not have been needed. As such, IFFIm represents, at best, a second best solution to the development financing problem. At the same time it is a very efficient second best solution which offers the potential to provide additional features such as predictability, which traditional aid cannot, at present, match. Should the shortfall in traditional aid persist as well as the continued need for donors to account for their commitments off budget – IFFIm remains an attractive option.

The role of IFFIm is to raise money efficiently from investors in the international capital markets. It has delivered against this goal. IFFIm has performed much better than was originally anticipated surpassing many of the key performance indicators (to the degree they exist, can be reconstructed or have been adopted by key stakeholders). Borrowing costs have been considerably lower than was originally anticipated by donors and slightly better than the expectations of the Board when they were appointed. IFFIm has already raised substantial resources, and has the capacity to raise more - though slightly less, overall, than originally anticipated at the outset due to the lack of donor pledges. IFFIm's liquidity has been managed extremely well which has resulted in a "positive carry" (meaning it earns more on its liquid assets than it pays to borrow).

The GAVI Alliance's role is to spend the funds raised by IFFIm wisely. IFFIm funds have been spent on activities which have delivered, or seem likely to deliver, extremely good development returns although it is not entirely clear exactly how good these returns will prove to be. Assessments of health impact are subject to uncertainty and the results may well be somewhat less than initially envisaged. Nonetheless, we estimate that the benefit cost ratio is likely to be at least 3.5:1 and that the 800,000 deaths averted which GAVI needs to achieve to break even will be exceeded by some margin. These results seem likely to be achieved because GAVI has been able to buy good things (cost effective interventions) rather than buying things better (taking full advantage of predictability or the potential to frontload). GAVI achieves these results in extremely difficult settings allocating a far higher share of its resources to the poorest countries than other donors and funding agencies.

IFFIm was still worth trying even if the current political, economic and regulatory conditions mean that a full scale, $40bn per annum, International Finance Facility (IFF) or a series of follow on, smaller scale, IFFs now seem rather unlikely to happen. The current landscape

makes it unlikely that IFFIm could be replicated in its current form. Equally, other alternatives, not previously considered acceptable, might now be possible. These might include securitisation, on a modest scale, by a multilateral development bank. There is perhaps more appetite for this now – though there would still be major hurdles to its implementation.

A positive outcome for IFFIm was by no means guaranteed; it was clearly recognised at the outset that the IFFIm model carried risks. It is quite conceivable that the model could have failed – it could certainly have operated far less efficiently than it did. The model is clearly robust having emerged from the financial crisis relatively unscathed. This is largely down to adoption of the World Bank's conservative financial and risk management policies.

The governance framework of IFFIm has generally been effective albeit more costly to establish and operate than anticipated. IFFIm is well regarded by donors and has formed effective partnerships with GAVI, the GAVI Fund Affiliate (GFA) and the World Bank. The overall roles, relationships and mutual obligations of these entities are well defined. The structure has proven to be robust and operated largely as expected. The IFFIm Board has been well led and has been important to the successful establishment and operation of IFFIm as has the treasury management of the World Bank.

Some streamlining of the structure is desirable. Accountability and reporting requirements are being met but there is room for improvement. In the early years there was tension between the IFFIm Board and the World Bank due to different expectations and interpretation of the Treasury Management Agreement. This has diminished over time but "creative tension" continues to exist and needs to be carefully managed. The threshold for reporting and discussing policy changes with donors needs to be considered further. A shared understanding on these issues would help IFFIm going forward.

IFFIm costs are not insubstantial, but are small in relation to the scale of IFFIm's operations. They have been partially, if not fully, offset by the savings associated with IFFIm's efficient operation.

The World Bank, acting as Treasury Manager and employing conservative financial and risk management policies is critical to IFFIm's position as a supranational and its ability to fund itself at rates significantly lower than the weighted average of rates paid by IFFIm's donors. Without the World Bank, IFFIm's entire funding model would need to be re-evaluated. There needs to be a shared understanding of the specific roles and responsibilities of the IFFIm Board and the World Bank under the Treasury Management Agreement – especially in relation to the execution of financial strategy.

IFFIm has helped to transform GAVI from a niche actor into a major player in international health, and allowed GAVI to demonstrate its credibility on the international stage.

There is no guarantee that the benefits of predictable funding provided by an IFFIm type mechanism will automatically filter through to the country level. Evidence from the GAVI phase II evaluation suggests that GAVI has performed relatively well in this respect though the HSS evaluation did raise some concerns. Though greater predictability is of value to GAVI, its potential has not been fully utilised to date as GAVI has made limited progress in terms of its market shaping objectives.

IFFIm has performed well within the constraints imposed by the design of the IFF pilot. However, IFFIm has only been able to make limited use of the overall potential of the IFF concept. This reflects the power of the IFF model rather than any major shortcomings in the implementation of IFFIm. Ideally, the model would be larger (to improve efficiency) and the funds would be spent on a purpose better suited to, or in need of, frontloading. GAVI did not really require frontloaded funds and GAVI might have been better able to use IFFIm funds had they arrived two or three years later, and been used to support increased uptake of pneumococcal and rotavirus.

IFFIm, in isolation, is not a sustainable funding model. Looking forward, GAVI has to face serious sustainability challenges as it aims to increase spending rapidly, at the same time as IFFIm disbursements - based on current donor pledges – are declining. These challenges were not created by IFFIm and are a GAVI wide issue but the IFFIm model – spending 20 years of donor contributions in 5-7 years – makes them more acute. GAVI has recognised this, and is now gearing up to face them through intensified, resource mobilisation efforts. This suggests an IFF type model might be more suited to an organisation which has reached a mature stage in its development or to meet one off costs rather than to finance an expansion phase as has been the case for GAVI. Whilst it is clear that GAVI sees an ongoing role for IFFIm its precise role needs to be better defined. GAVI has started to address this since late 2010 and continues to engage donors specifically on growing IFFIm as part of its overall resource mobilisation.

2. Introduction

1. Background

This evaluation was commissioned by the GAVI Secretariat, on behalf of the IFFIm Board, to assess the extent to which the IFFIm has been an effective financing mechanism to raise money for immunisation and health systems in GAVI eligible countries

By the late 1990s, there was a growing consensus in the international community that *more* aid, but also better aid, was required to encourage more rapid development in low income countries. The establishment of the MDGs gave this process further impetus, setting clear and ambitious development targets. It also recognised the key role that improved health, which accounted for three of the eight MDGs, could play. The Zedillo Report of 2002 estimated that an additional $50bn was required to achieve the MDGs.

The IFF– developed by the UK Treasury and Goldman Sachs – was one proposal that emerged from the ensuing debate on innovative financing. Although it did not prove possible to implement the IFF in its full scale – some $40bn per annum – agreement was reached at the 2004 World Health Assembly to pilot the approach as IFFIm. GAVI, for its part, was seen as a credible implementing partner, able to scale up access to immunisation rapidly but lacking the resources to do so, open to new ideas and also willing to implement the pilot.

IFFIm was thus established as a proof of concept for a larger IFF which, it was intended, would come later if the pilot proved successful. Other alternatives were considered at the time, including working through the multilateral development banks (MDBs), but these

gained little traction because they either offered insufficient leverage, lacked support within the MDBs or were, quite simply, not seen as new concepts.

IFFIm raises money by issuing bonds on international capital markets. The financial strength of IFFIm to repay the bonds is based on legally binding donor payments made to IFFIm over a period of up to 20 years. This arrangement effectively allows donors to "buy now but pay later" increasing aid flows significantly over a 5-7 year period but paying back over a 20 year period. IFFIm delivers these frontloaded funds to the GAVI Alliance which is then responsible for the management and utilisation of the funds.

The main rationale for IFFIm is that it offers the potential to frontload resources (by raising funds on international capital markets), and provides funds in a predictable manner (given that it can rely on legally binding commitments). It aims to provide resources in a form which could be used to generate benefits which outweigh any additional costs incurred. Immunisation was seen as a particularly attractive candidate for the pilot on the grounds that:

1. it offered highly cost-effective interventions, with significant externalities (through herd immunity) which could be delivered earlier than would otherwise be the case;
2. more children will grow up healthier which will promote economic growth and social development which will increase country capacity to sustain immunisation programmes in the long term;
3. it offers the potential to influence vaccine markets, encouraging new producers to the market, allowing larger scale production and ensuring stable supplies at lower cost.

In order to get off the ground, the model had to meet a number of key donor requirements. It had to:

4. raise funds at competitive rates (at levels close to where the donors could raise funds themselves);
5. ensure that donor commitments could be accounted for off budget so as not to increase their budget deficits. This was seen as an attractive way of boosting aid spending by those donors spending less than the UN target of 0.7% of GDP ;
6. allow donors sufficient control over how, and when, the funds were spent to enable them to make long term commitments;
7. ensure that running costs were low by keeping institutional arrangements "lean and mean" and making the best use of existing organisations and;
8. ensure that any new financing arrangements would not jeopardise GAVI's US tax exempt status.

These requirements played a key role in shaping the design and subsequent implementation of IFFIm. The first highlighted the importance of ensuring than IFFIm attained supranational status which, in turn, required the adoption of effective, and also highly conservative, financial and risk management policies and AAA credit ratings. This essentially restricted the choice of treasury manager to a multilateral development bank of comparable credit strength.

Off budget financing required a Eurostat ruling for which IFFIm independence and conditionality of donor payments (the High Level Financing Condition (HLFC)) were critical; the compelling GAVI mandate was also instrumental. The third and fourth requirements responded to donor concerns and led to IFFIm being established as an entity without staff and with its key functions outsourced. This was also done for cost and efficiency reasons including avoiding duplication of treasury and administrative functions. Operational aspects are managed by GAVI and the treasury management functions were outsourced to the World Bank (after a tender process in which the World Bank was the only complete bidder). Restrictions were placed on how, and how quickly, funds could be used.

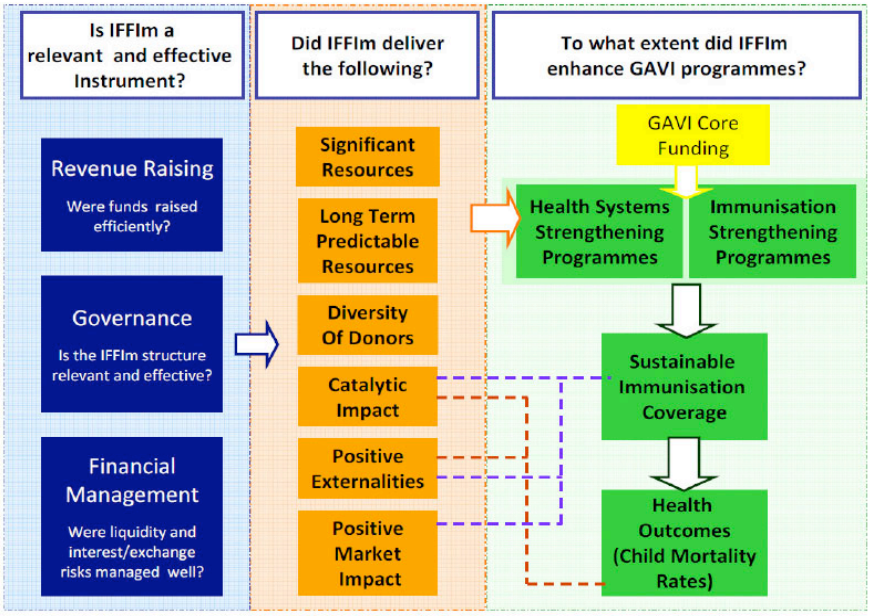
Finally, the GAVI Fund Affiliate (GFA) was established to accept funds on the donor's behalf. This was done to keep IFFIm independent from the donors and also to safeguard GAVI's tax-exempt status. The structure may appear complex to a development audience but is fairly simple by financial market standards. Although governance and treasury management costs are not insignificant – just over $23.2m[1] to the end of 2009 - they largely reflect the structure and associated costs imposed on the model. They are modest in terms of IFFIm's overall borrowing accounting for just 0.6% of the present value of donor pledges to October 2010. Based on current expenditure levels we estimate IFFIm is likely to incur governance and treasury management costs of at most $150-$170m over its lifetime – some 4.1 to 4.6% of the present value of current pledges.

A critical requirement during the design of IFFIm was that it would raise funds efficiently and that whilst it should operate in the 'image and likeness' of the principal sovereign donors the IFFIm Board was expected to have operational independence.

IFFIm is recognised as a multilateral development institution but incorporated as a private company limited by guarantee and registered as a Charity in England and Wales. The GAVI-GFA-IFFIm-World Bank-donor relationships are governed by the Finance Framework Agreement (FFA). Procedural and support agreements define the operational requirements and provide guidance to the different entities, whilst the IFFIm Articles of Association set out the legal status of the Board and their powers, duties and responsibilities. IFFIm is accountable to the UK Charities Commission (which provides donors with a further level of regulatory oversight) but also to other entities in relation to its different functions. The GAVI Alliance is the sole member of IFFIm.

[1] based on IFFIm and GFA Board accounts.

1. Purpose of the Evaluation



The key questions addressed by this evaluation are whether the IFF concept, as a whole, is proven, and whether the IFFIm pilot, in particular, has worked. Specifically, "did the IFFIm mechanism work?" …and "did the IFFIm -funded investments offer value for money?" The team looked at the alternative models that were considered at the time, but also at how the IFFIm pilot, as it was actually constituted, operated. The evaluation framework used – and the key evaluation questions - are shown in the figure.

Evaluation methods included interviews with key stakeholders, analysis of market and financial data, a questionnaire issued to bond dealers and some health impact modelling. The team developed a number of counterfactuals to assess the "without IFFIm" case.

2. Progress to Date

1. What was IFFIm expected to deliver?

There is no agreed framework against which IFFIm performance can be measured. There is also a lack of consensus on some of the key IFFIm objectives – for example, whether market shaping was an explicit objective or not. This partly reflects the politically driven nature of the approach, as well as the speed with which it was introduced. In terms of the IFFIm proposal presented to the GAVI Board the only explicit targets relate to the $4bn that was expected to be raised and the 5 million lives it was expected to save.

DFID – a key champion of IFFIm – did set out a series of indicators, and these were used by the evaluation team, alongside the indicators which evolved as IFFIm developed, to form a judgment on performance. Indicators which currently enjoy broad acceptance – and are now reported on routinely in a quarterly report provided by the Treasury Manager – include:

9. borrowing costs (specifically the IFFIm borrowing cost in relation to the weighted average of the borrowing cost of IFFIm donors);
10. cost of carry (the relationship between the interest IFFIm earns on its liquidity compared to the interest it pays on its borrowing) and, related to this, investment returns compared to suitable benchmarks and;
11. costs of running IFFIm.

1. Revenue Mobilisation: To what extent did IFFIm raise the necessary funds?

To date IFFIm has grant commitments from donors of $6.2bn in the form of legally binding pledges. This amounts to some $3.9bn in September 2006 value terms. This should enable IFFIm to disburse up to $4.3bn by 2026 (around ~92% of original expectations). The current ratio between programme disbursements and receipts from donors is 3.3. This clearly demonstrates the fact that IFFIm has allowed the frontloading of resources. The scope for frontloading has been restricted by the financial cushion IFFIm needs to retain to reassure bondholders they will be repaid, annual ceilings on expenditures which were imposed by donors (under the Finance Framework Agreement) and by GAVI's ability to utilise frontloaded resources.

IFFIm has undertaken 18 bond issues on 10 occasions in 5 markets, raising $3.2bn to date (this has now increased to $3.4bn following the March 2011 issue). The majority of this has been used to support GAVI programmes and allow IFFIm to meet its agreed liquidity targets ($1.2bn has been for refinancing purposes).

Diversity in pledges has increased with the recent addition of the Netherlands (in 2009) and Australia (in 2011). There are currently 9 donors (including Australia) but IFFIm is still heavily dependent upon the UK and France – which account for 47.8% and 27.6% (March 2011) of current pledges respectively - for its funding.

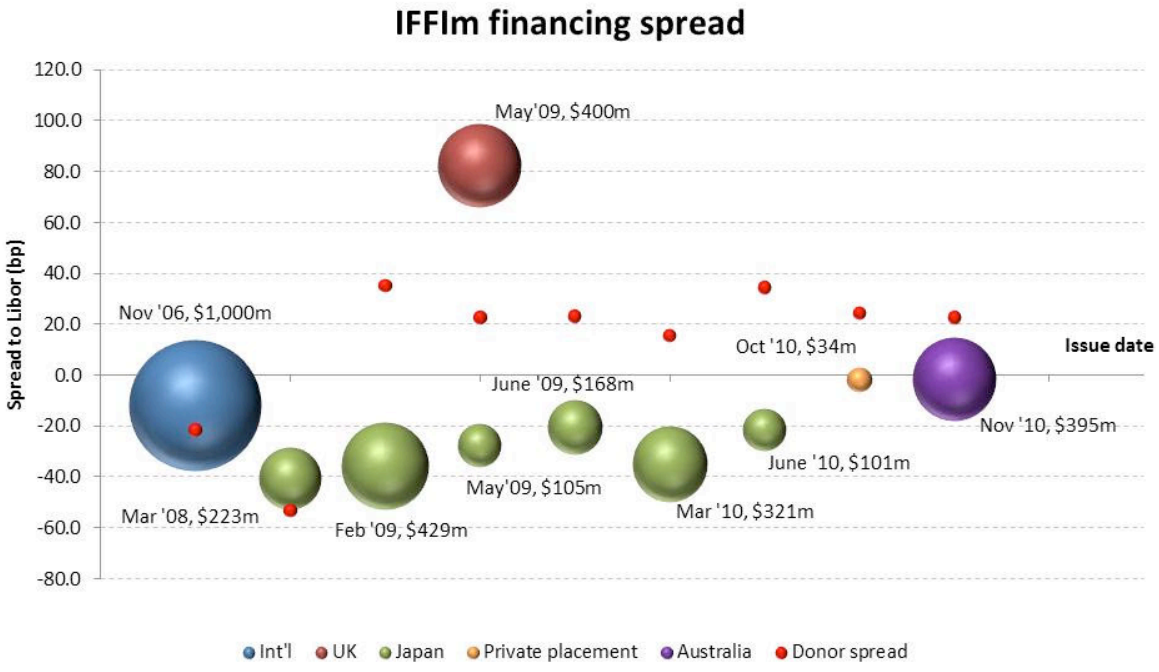
2. Financial Efficiency: To what extent did IFFIm raise funds efficiently?

IFFIm has unique characteristics, combining features of three types of established securities: supranational, Collateralised Debt Obligations (CDO) and Asset Backed Securities (ABS). Although access to the AAA marketplace has been important, it does not guarantee low borrowing costs as spreads[2] within the AAA market can still be extremely wide. Achieving a zero-risk weighting and MDB status have been critical in enabling IFFIm to access low cost funds within the AAA group. The presence of the World Bank as

[2] the difference between the actual cost of borrowing and the risk free cost of borrowing

Treasury Manager in the IFFIm structure has conveyed instant credibility and enabled bond underwriters to position IFFIm as a World Bank surrogate.

In terms of its funding policy IFFIm has managed to balance the need to diversify its funding sources and achieve financial efficiency with other objectives such as raising awareness of GAVI and issuing bonds in donor markets - but only where this did not compromise the primary objectives. The World Bank as Treasury Manager has enabled IFFIm to enjoy an extremely low cost borrowing programme. The figure below shows that IFFIm's all-in cost of borrowing has usually been below the weighted average of IFFIm donors' borrowing costs[3].



As IFFIm has achieved supranational status this has given it the comfort of stable access to the market and enabled it to focus on achieving the lowest possible borrowing costs.

Overall, IFFIm has traded at a small premium to the World Bank and, in recent times, below the spread for the EIB and KfW – an impressive achievement. Its current average borrowing cost is far less than initial expectations[4] (and slightly less than the weighted cost of borrowing of the IFFIm donors (a benchmark subsequently adopted by the IFFIm Board). In most cases IFFIm has priced inside the weighted average donor spread[5] and on average has achieved pricing 12.4bp lower.

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3 The figure shows all in borrowing cost issue by issue. The size of the bubble reflects the size of the IFFIm issue. For each issue the corresponding weighted average donor cost is presented.

4 DFID anticipated IFFIm would borrow at 35bps over UK risk free with other benchmarks considered as LIBOR +10bp or the weighted average donor cost of borrowing)

5 In order to be consistent in comparing IFFIm's spreads to the donors, in most cases local currency sovereign debt spreads have been swapped into US$ Libor (US$ benchmarks are rare for European issuers) to normalise for yield curve

The table below shows savings achieved by IFFIm for each issue compared to various alternatives over the life of each bond issue thus providing an indication of the value added by IFFIm's funding programme. The total column on the right presents the cumulative savings to date. It shows, for example, that, at present, IFFIm's cost of raising funds has been some $13.1m less than that of the weighted donor basket. It has cost over $37.3m less than an original DFID expectation of raising funds at UK government bonds +35bp. Shaded cells reflect cases where IFFIm was more expensive than the comparator and shows clearly that IFFIm's relative performance has improved over time.

Estimates of Cost Savings due to IFFIm Financial Efficiency
in relation to comparators

Cumulative US$ cost differential vs selected comparables

IFFIm funding (US$m) vs	Nov '06	Mar '08	Feb '09	May '09	May '09	Jun '09	Jun '09	Jun '09	Mar '10	Jun '10	Jun '10	Oct '10	Nov '10	Total ($m)
Size (US$m)	1,000	223	429	400	105	38	85	45	321	71	30	34	395	
Tenor (yrs)	5	2	3	5	3	3	4	15	3	4	10	5	5	
Donors	4.8	0.6	-9.1	11.3	-1.8	-0.5	-1.4	-3.3	-4.9	-1.5	-2.0	-0.4	-4.8	-13.1
UK	6.1	1.6	-6.9	18.9	-1.5	-0.4	-0.3	-1.9	-4.7	-0.7	-1.4	-0.1	1.8	10.6
IBRD	4.1	0.0	0.1	1.2	0.0	0.0	0.0	1.1	0.0	0.0	0.3	0.1	1.2	8.2
EIB	3.1	-0.2	-4.6	0.3	-0.9	-0.3	-1.0	-1.9	-1.9	-0.4	-0.4	-0.3	-3.0	-11.3
KfW	2.1	-0.2	-4.6	-1.3	-0.9	-0.3	-1.0	-1.9	-1.9	-0.4	-0.4	-0.2	-2.2	-13.1
AfDB	-3.4	-0.2	-4.6	-2.2	-0.9	-0.3	-1.0	-1.9	-1.9	-0.4	-0.4	0.0	-0.3	-17.5
US$ benchmark*	NA	-1.3	-11.0	4.2	-2.0	-0.6	-2.2	-7.6	-3.9	-1.1	-1.2	-0.1	-1.3	-28.3
vs UK+35bp	-11.4	0.1	-11.4	12.4	-2.6	-0.8	-1.5	-4.2	-8.1	-1.7	-2.5	-0.7	-5.1	-37.3
vs L+10bp	-10.9	-2.2	-5.9	13.4	-1.2	-0.4	-1.3	-0.5	-4.3	-1.0	-0.5	-0.2	-2.3	-17.4
v Libor flat	-5.9	-1.8	-4.6	15.2	-0.9	-0.3	-1.0	0.1	-3.3	-0.8	-0.2	0.0	-0.3	-3.7

* World Bank estimate of spread IFFIm could have achieved in the US$ benchmark market (min $1bn issue)

This success has been driven largely by access to the Japanese Uridashi market which has offered extremely low spreads. We estimate that, to date, access to the Uridashi market has resulted in cost savings of over $25m compared to IFFIm's next best funding alternative. Whilst IFFIm probably could have used this source exclusively it was decided to issue in a number of other low cost markets to protect it against a possible loss of access to the Uridashi market.

In short, funds have been accessed at exceptionally low rates despite the need to trade off the cost of funding with the need to ensure greater diversity in funding. Furthermore, IFFIm's performance in terms of borrowing costs has improved over time in relation to its peers. Cost savings have partially or fully offset IFFIm running costs depending on the assumptions used[6]. We also estimate that the savings achieved through the World Bank's

differentials. The US$ spread to Libor may not always be close to the local currency swap spread (margin below domestic Libor at which the government can borrow) e.g. in March '08 the UK's US$ swapped spread was L-77 but the local currency swap spread was L-110. If donors compare IFFIm's cost of borrowing to their local currency swap spread they will get a different result.

6 Total IFFIm running costs to end of 2009 amounted to some $23.2m – and are likely to be in the region of $30m by end 2010 (accounts not currently available). Cost savings compared to initial DFID expectations of $37.3m exceed this – cost savings compared to the donor average of $13.1m amount to some 43.7% of the estimated $30m figure

ability to place IFFIm in the Uridashi market exceeds total treasury management fees paid to date.

One risk with this strategy is the focus on relatively short dated instruments given the lower spreads this entails. Initial expectations were of fewer, larger bonds being issued on the grounds that numerous, short dated offering have higher issuance and related costs. In practice, the lower cost of funding on the short end has more than offset underwriter's fees and fewer, longer-dated offerings would have been significantly costlier. The IFFIm Board has challenged the World Bank to explore longer dated funding alternatives and whilst some progress has been made, due to the significant cost premium in raising long-dated funds, the bulk of the financings have been in maturities of five years or less.

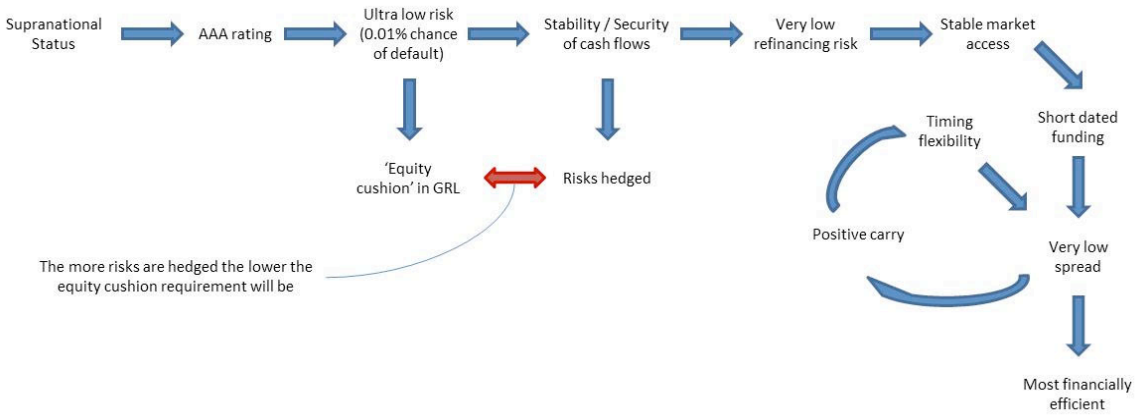
Surprisingly the main risk to IFFIm's AAA status has proved not to be related to the credit ratings of recipient countries but the credit ratings of the key donors – notably its vulnerability to a possible UK downgrade.

Essentially, IFFIm has paid the upfront costs of gaining access to important funding markets but has been unable to fully utilise those markets because it does not have a sufficiently large funding programme. IFFIm could be scaled up significantly in size without paying much more in marketing and other costs and still be able to access spreads which are attractive. Diversification of funding sources would also be easier because IFFIm would not be constrained by the minimum size requirements of the benchmark market.

3. Financial and Risk Management: To what extent were liquidity and risks well managed?

IFFIm has implemented sound financial and risk management policies consistent with maintaining its AAA status. The figure below illustrates the key links between sound financial management and credibility and access to low cost funds on a regular basis.

The Virtuous Cycle of Financial Efficiency



This evaluation judges IFFIm's liquidity policy to be fully effective in meeting the requirements of investors and the rating agencies. IFFIm is required to hold at least 12 months worth of debt service repayments. Despite its conservative investment policy IFFIm

has achieved a positive carry of some $7.5m on its liquidity holdings since inception (due, in large part, to its low borrowing costs). Early concerns from some donors related to IFFIm holding excess liquidity and receiving funds in advance of need have, as a result, largely been assuaged. IFFIm has rarely held funds in excess of its minimum needs (taking into account estimated programme disbursement requirements). Managing liquidity is particularly challenging with IFFIm faced on one side by market uncertainty and, on the other, by the fact that GAVI faces considerable uncertainty in assessing its own funding needs (given the country demand led nature of its business).

IFFIm has followed the World Bank's conservative approach to investment management. The fact that IFFIm is able to fund itself at sub-Libor rates is primarily due to these extremely conservative, risk averse policies and the management of its liquid assets is a key part of those policies. Such policies inevitably leave IFFIm open to the accusation (usually with the benefit of hindsight) that it is foregoing almost assured higher returns. Foregoing potentially higher but more risky, and potentially volatile, returns is nevertheless a price to be paid for ensuring continued supranational funding levels. The World Bank's investment management has outperformed against the relevant benchmarks. This has, in turn, contributed to IFFIm's positive carry and ensured that IFFIm suffered only minor negative returns during the financial crisis when other MDBs – such as the Inter American Development Bank (IADB) - suffered significant losses as a result of employing more adventurous investment strategies. IFFIm's conservative approach to investment management has also supported its AAA rating.

In terms of risk management an effective hedging strategy is essential in order to protect the value of IFFIm's assets, and hence its AAA rating. In particular, IFFIm has needed to hedge its interest rate and currency exposure as comprehensively as possible. Not all of the risks faced by IFFIm are hedgable but where options have been available IFFIm has chosen the alternatives which provided the greatest degree of certainty at reasonable cost. The HLFC poses a particular challenge[7] but in practice, the hedging policy implemented by IFFIm has proven to be effective due to the stable and low number of GAVI eligible countries in IMF arrears (though there is no guarantee that this will continue). The widespread, but necessary, use of hedges and derivatives to manage risks has made accounting especially challenging. IFFIm has strived to address this as far as possible by increasing the transparency of its accounts whilst recognising that complexity is an inherent feature of its business.

Under the terms of the Treasury Management Agreement (TMA) the World Bank has developed and maintained a gearing ratio limit model which is reviewed annually and the gearing ratio limit recalculated on a quarterly basis. The gearing ratio sets the maximum leverage IFFIm can incur consistent with the default probability for AAA ratings; the limit is currently 69.7% thus requiring IFFIm to retain an asset cushion of 30.3% which cannot be tapped until sufficient donor payments are received that bonds can be repaid. The model was originally intended to have a far greater influence on IFFIm's credit rating but, in practice, more emphasis has been placed on political commitment and the major donors'

[7] Donor funding is dependant upon the HLFC which is based on the number of GAVI eligible countries in protracted arrears. As this figure is uncertain IFFIm does not know how the amounts it needs to hedge

credit ratings. The model is intended to mitigate the risk to IFFIm's credit rating originating from the HLFC, and it continues to serve this purpose. However, IFFIm's credit rating is also exposed to the large weighting of two donors versus IFFIm's total capital, their political commitment and their credit ratings. This is difficult to mitigate without further pledges from other AAA rated donors that would lower IFFIm's dependency on the UK and France.

4. Were costs reasonable and justified?

Operational costs (including the Treasury Manager's costs) amounted to some $22.1m from IFFIm's inception in late 2006 to the end of 2009. In 2009 IFFIm governance costs ran at just under $3m – of which the GAVI administrative support fee and legal fees accounted for $0.8-$0.9m each. The Treasury Manager's fee added just under $2m and GFA costs amounted to just under $1.3m in 2009.

This represents an estimated 0.60% of the present value of pledges. There are no obvious comparators to assess whether this figure it reasonable. Total costs amounted to some 0.95% of bond proceeds (to end 2009) whilst costs as a share of outstanding debt declined from 0.52% in 2006 to 0.30% in 2009.

IFFIm Running Costs – compared to donor pledges

$000	2006	2007	2008	2009	Total
IFFIm Board	1,595	2,160	2,786	2,985	9,526
GFA	1,707	1,398	1,288	1,279*	5,672
Treasury Management Fee	1,904	1,298	1,779	1,965	6,946
Total	5,206	4,856	5,853	6,229	22,144
% of PV of Pledges**	0.14	0.13	0.16	0.17	0.60

* excludes a $1.1m procurement fee for the purchase of meningitis and yellow fever vaccines paid by the GAVI Alliance to UNICEF which is included in GFA accounts as both income and expenditure

**$3,673m as at October 2009

Costs are now increasingly captured in the accounts though there is still a substantial "uncharged" component (e.g. reduced fee rates from the legal teams; World Bank subsidies of the systems development costs and the use of the World Bank's swap credit lines) and funds are not necessarily transferred (the GAVI Secretariat estimates costs and then provides its support as a donation). Such transparency is welcome. Including such costs would make the true costs of running IFFIm somewhat higher (at most $26m since inception depending upon the assumptions made). Bond issuance costs amounted to a further $13.8m to the end of 2009.

5. Governance: Were arrangements relevant and effective?

1. IFFIm Structure

IFFIm operates as UK based charitable company within an elaborate legal framework defined by a series of founding documents: the Master Definitions Agreement, Finance

Framework Agreement (FFA), Procedures Memorandum, Treasury Management Agreement (TMA) and Administrative Support Agreements. These provide a sound governance and legal framework for the operation of IFFIm consistent with good practice principle.

Designing the IFFIm governance arrangements required a large investment of time and resources as did the completion of the FFA. The structure was a tailored solution to meet multiple donor objectives and the FFA has provided well defined legal obligations and procedural mechanisms for the various entities involved. As a result the mutual obligations and responsibilities between IFFIm, GFA, the World Bank and the GAVI Fund were very clear at the outset.

The evaluation finds that the structure has proved robust and generally worked well with major adjustment to the founding documents only being required to accommodate the new status of the GAVI Alliance as a Swiss Foundation (and not due to shortcomings in the actual FFA). New grantor donors have been easily accommodated. It is a significant achievement that most of the tax, accounting, regulatory, credit rating, legal and market requirements that were required could be built around these four entities and their relationships with the grantor donors.

The number of entities and transactions makes the structure appear complex but the underlying decision making process and the primary relationship between the principals within the Governance structures are relatively straightforward. The evaluation suggests that the structure looks more complex than it actually is. There are substantial transaction and operational costs associated with it but these are a necessary consequence of a governance structure required to ensure that the multiple objectives of the grantor donors could be met. There may be scope for streamlining – for example through the removal of GFA which is currently under discussion - but there are risks associated with this and costs and benefits of such action need to be carefully weighed.

IFFIm has met its reporting obligations to the UK Charity Commission and has produced audited accounts as required. There is an ongoing challenge to ensure that the complex financial transactions can be presented more transparently for non specialists. Where appropriate, the annual donor meetings could benefit from more involvement from donors' Treasury colleagues.

The GAVI Board does not have oversight of IFFIm but there is a regular flow of information to the GAVI Board about IFFIm's performance and activities. The IFFIm Board briefs the senior executives of the GAVI Alliance who, in turn, brief GAVI Board members. From time to time the IFFIm Chair has also presented to the GAVI Alliance Board. These arrangements could be more structured and formalised to ensure a more systematic information flow to all GAVI Board members. A more substantial change could involve the IFFIm Chair becoming a member of the GAVI Board. However, there may be legal implications if the two organisations are more closely linked and this would need careful consideration. Stronger links between the GAVI Audit Committee and the IFFIm Audit Committee would further strengthen accountability.

2. The IFFIm Board

The structure has been set up to require an active decision making role by the IFFIm Board in policy approval and funding decisions. The Board are also required to manage the affairs of IFFIm and to demonstrate diligence as trustees of the Charity. Donors have emphasised the important role of an independent Board in overseeing the financial policies and setting the parameters for bond issuance.

The need for IFFIm to have a Board was established in the Founding documents and GAVI appointed a Board using best practice approaches. The IFFIm Board has met just under 50 times in five years which is higher than the initially planned four meetings per year. Interviews confirmed that the earlier expectations of the workload were underestimated.

Feedback from grantor donors and other stakeholders is positive about the role played by the Board and the level of professionalism and personal commitment shown. The Board is considered to be well led and the contribution to the successful establishment and operation of IFFIm is fully recognised. There are a number of ways in which the IFFIm Board has made operations more effective. Improving awareness in the financial community of GAVI's mandate has, for example, been greatly assisted by Board members engaging more substantially in raising awareness of GAVI and IFFIm.

The Treasury Management Agreement sets out the legal relationship between the IFFIm Board and the World Bank in relation to policy and Treasury Management functions. Under the TMA, the role of the IFFIm Board is to review, amend and approve policy and strategy proposals put forward by the Treasury Manager including the Funding strategy, Risk Management strategy and the Investment Management and Liquidity Policy. Discussions with the Board, examination of the IFFIm Board minutes and interviews with Bank and Secretariat staff, indicate that the IFFIm Board have fulfilled the requirements of the FFA and TMA by close scrutiny of policy submissions and by approving each bond issue. The policy making process has evolved into the World Bank preparing proposals (draft papers containing scenarios and options) for Board discussion and further development.

This approach has resulted in an effective policy debate and scrutiny of the Treasury Management functions by IFFIm. However, it has also meant that the World Bank has been providing more inputs for advice and information than was initially anticipated.

There are several explanatory factors. Firstly, there was limited experience as to how the policy process would work at the outset and the approach has been established over time and through experience. Secondly, the IFFIm Board requires to be fully informed before it makes decisions and on occasion this has meant a significant amount of background information being provided by the World Bank. A third explanatory factor has been a difference in view over the extent of delegation that should be made under the TMA.

IFFIm legal advisers told the evaluation team that the TMA provides the flexibility to allow delegation of bond issues but does not *require* such delegation. In their view, as a matter of contractual authority, the IFFIm Board can delegate decision making about individual funding transactions and bond issues but in practice it has chosen not to do so. The IFFIm Board has closely scrutinised and approved the terms of each bond issue but, depending on the situation, it may well give more discretion in an actual execution to the Treasury

Manager. Board minutes indicate that this was the case for the Uridashi recent issue. As a matter of course all proposals for future transactions get reviewed on a quarterly basis in the light of Treasury Management reports provided by the World Bank.

The World Bank view is that the TMA is not operating as initially envisaged in some respects. In their view whilst it is clear that the Board is responsible for setting policy the TMA provides for the World Bank annually to present the IFFIm Board with a strategy. If approved the World Bank should then have the authority to execute the strategy including all individual transactions[8].

The professional and business relationships between the IFFIm Board and the World Bank and the GAVI Secretariat are nevertheless effective and the partnership between the IFFIm Board and the World Bank has evolved onto a firm footing. There have been differences of opinion and "creative tension", especially in the initial stages, but these have been dealt with through debate and discussion through an active learning process. Examples include:

12. World Bank advice: Dialogue about market access for Uridashi bonds and the World Bank's own issuance led to an IFFIm bond programme in Australian $ and the issuance of longer dated maturity Uridashi bonds.
13. World Bank fees: There was a discussion of possible cost reductions at the outset; the Bank's Board requires it to operate on a cost recovery basis. Oversight by the IFFIm Board has ensured greater awareness of the costs incurred.
14. Liquidity Management: Dialogue relating to alternative ways of investing IFFIm's liquidity.

Better forecasting of costs, less ad hoc reporting and reliance on streamlined regular reporting and the provision of dedicated GAVI and World Bank staff to help service the relationship have considerably strengthened the partnership.

Given the difference of view on how the TMA should operate and the fact that the current arrangement ends in September 2011 it would be valuable to review the experience to date and how the arrangements are working in practice.

1. IFFIm Policies

The finance, investment, liquidity and risk management policies adopted by the IFFIm Board have been conservative and in line with donor expectations. The evaluation has also assessed the policy framework to be consistent with good practice of MDBs generally and with the operating principles, guidelines and practice of the World Bank.

During the evaluation we consulted with donors who confirmed that the governance structure had been established to minimise their engagement in policy. However, they expected to be consulted if there was any major change in direction. The evaluation has not

[8] In the 2009 Treasury Manager's review of Financial Policies it recommended that "the IFFIm Board move from a case-by-case assessment of funding transactions, to consideration of an annual funding framework, as envisioned in the TMA, while maintaining a regular process for Board consultation and input over the course of each year."

found any such cases where this would be warranted but the recent IFFIm Board decision to execute a swap overlay[9] does raises interesting questions such as how to judge to whether the degree of risk being adopted by IFFIm remains consistent with donor wishes, what triggers should be used to inform donors of policy changes and the conditions under which discussions on these issues might take place.

2. To what extent did key stakeholders add value?

Both the World Bank and the IFFIm Board have added significant value in different ways. For example, the World Bank intervened at a late stage of the IFFIm design process, adopting an honest broker role based on their understanding of both the donor environment and financial markets, to engineer important amendments to the FFA. These included a shift from a "just in time" financing model to one which provided legally binding, long term commitments and also a streamlining of the Relevant Events (which allow donors to halt payments) to ensure the markets did not perceive the arrangements as signalling a lack of donor commitment. The Bank has also lent huge credibility to IFFIm in its role as Treasury Manager and introduced IFFIm to the Uridashi market which afforded it considerable protection during the financial crisis. Having the World Bank as Treasury Manager has been one of the most important factors in IFFIm's success to date; indeed IFFIm may not be possible at all without the World Bank's participation.

The IFFIm Board has carried out an effective scrutiny role – requesting the Treasury Manager to prepare and present new or modified financing options. For example, though the Board challenged the case for going into the Uridashi market the Board had sufficient breadth of expertise to acknowledge its merits. They also subsequently pushed for longer dated maturities – not a typical feature of the Uridashi market – which has happened to a limited extent. The Board has also pushed for more transparent reporting which has resulted in a refined quarterly monitoring report and they also supported the development of an Explanatory Note which has been well received by donors.

3. What were donors' objectives, expectations and perceptions?

Donors supported IFFIm for a range of reasons – largely based around the views that both innovative financing and GAVI as an organisation had key roles to play in accelerating progress towards the MDGs. Our interviews suggested that some were broadly interested in supporting the innovative financing agenda – often for largely political reasons. Some, though still supporting IFFIm, also had reservations about the frontloading concept and how IFFIm fit into the overall vision for financing GAVI going forward.

9 The swap overlay involved IFFIm taking on a limited degree of financial risk in investing its liquid assets The IFFIm Board asked the World Bank early in 2010 to look at investment options for its 12 month liquidity. The Board formed an independent view to undertake a swap overlay after considering the World Bank advice and options presented in December 2010. The issue is discussed in more detail in section 5 and in annex 14.

For some countries – such as the UK – the need to get development spending up quickly was seen as important. For some of the funders – the Dutch and Nordics – who were already exceeding the 0.7% target, this was not an issue.

Donors placed different emphasis on costs – some were rather more willing to accept higher borrowing costs as a price to pay for a new finance model which could be justified if returns were acceptable. Other donors were more sensitive about the cost implications.

There was no common donor position on how they felt IFFIm had performed. In general, donors seemed to be largely satisfied with IFFIm's performance. They were generally highly complimentary about the Board and the Treasury Manager performance. Some suggested that whilst they initially expected a rather less hands on Board they were happy about current arrangements. The IFFIm donor meeting was seen as being helpful – but some donors thought the attendees did not have the right technical background to challenge the Board more effectively. The majority of donors expressed the need for a low risk approach characterised by the conservative World Bank financial management and risk policies but, at the same time, some also suggested a willingness to test more adventurous investment approaches.

4. What impact did the financial crisis have?

Ostensibly, the financial crisis has had little direct impact on IFFIm. It has had continuous access to the market at an affordable cost and IFFIm's conservative liquidity policies meant that it has not been forced into the market on an emergency basis. IFFIm has experienced some increase in spreads but is still largely perceived as a World Bank surrogate. Alternative approaches, had they been allowed, such as using a private sector Treasury Manager adopting different, less risk averse, financial and risk policies could have severely undermined IFFIm's performance. Although spreads have widened IFFIm has been largely shielded from this by issuing into the Uridashi market and by the relative spread improvement in relation to its peers.

The main impacts of the financial crisis have been indirect. A key concern was the potential effect of a UK downgrade on IFFIm's status (despite the fact that, in theory, the gearing ratio limit incorporates this risk) which, to date, has not materialised. There have also been far broader effects – in terms of impact on overall donor funding levels – and the increased challenge GAVI faces in attracting funds from a smaller pot of development assistance than might otherwise have been the case. The financial crisis is also likely to have affected country capacity to provide domestic funds for immunisation though such effects are difficult to quantify.

5. What are IFFIm's tipping points?

Key tipping points which could undermine IFFIm would include the losses of AAA and supranational status and the loss of the World Bank as Treasury Manager or any events which make this more likely. IFFIm's close association to the World Bank is only achieved through a contract (the TMA) and a loss of confidence in the bond market could see IFFIm fall out of the "virtuous cycle" described earlier. The removal of the World Bank as TMA or, to a lesser extent, even adoption of policies not considered by investors to be consistent with the World Bank's conservative policies might also contribute to this. The recent swap

overlay will be of interest to investors as it is the first case in which the Board has not chosen to accept the World Bank's preferred option. Though the World Bank considered the choice made by the IFFIm Board as relatively low-risk there is a possibility that such instances may start to send adverse signals to investors and donors if repeated and involving transactions which imply a higher degree of risk. The IFFIm Board have reiterated their commitment to do nothing to jeopardise the credit risk of IFFIm.

Other tipping points – beyond IFFIm's control - might include the downgrading of key donors' credit ratings or even outright default and the resurgence of recipient country IMF arrears. The shift from raising new funds to refinancing existing debt may make it difficult to use "the GAVI story" to raise money and may make it difficult to attract investors at the same spread levels which IFFIm has enjoyed to date.

6. Has IFFIm produced any externalities?

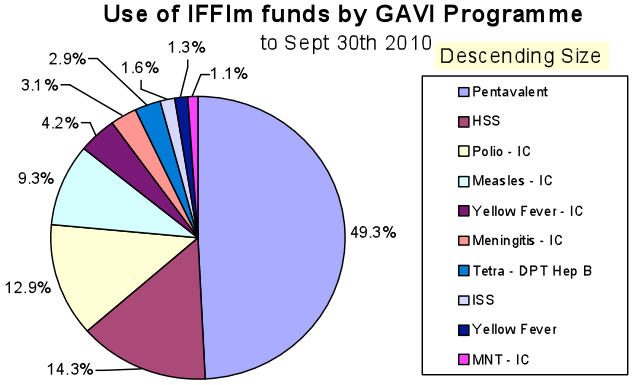
IFFIm has certainly achieved impacts beyond those specifically targeted for immunisation. The Measles Initiative – supported by IFFIm – has provided a channel through which other health benefits can be delivered such as bed nets to protect against malaria, de-worming medicine, and vitamin A supplements. The Global Polio Eradication initiative has also been used as a channel for supporting Vitamin A supplementation as well as other services. Although much of GAVI's support for health system strengthening has been rather immunisation specific strengthened health systems can provide a platform for the delivery of health services as a whole. Within immunisation increased access, supported by IFFIm funds, has brought many countries to coverage levels where herd immunity can be expected to protect those un-immunised – though the level of impact this might have had is difficult to tell as the evidence base is, in general, very weak.

7. What have the implications of IFFIm been for GAVI?

1. Use of Funds and Impact on GAVI Spend

IFFIm has had a huge impact on GAVI's spending power. Since 2006 IFFIm has accounted for some 64.0% of GAVI spend and it has accounted for 49.2% of total spend since GAVI's inception. It has enabled GAVI to move from being a niche player – spending less than $200m a year – towards its ideal 'cruising altitude' of over $1bn per annum. However, future funding from IFFIm - based on current donor pledges - is now in decline just as GAVI is embarking on a very ambitious programme. This raises major concerns about financial sustainability for GAVI.

Funds have been spent on a range of activities … mainly pentavalent vaccine and 5 investment cases



IFFIm funds appear to have been almost completely additional for GAVI (i.e. they have not been at the expense of core funding). Concerns that the easy availability

of IFFIm funds might cause GAVI to slacken its efforts to raise funds from other sources are not borne out by the evidence.

To date (end September 2010), GAVI has spent just over $1.5bn of IFFIm funds. Around half of this has been spent on the pentavalent vaccine (DPT3-Hib3-HepB) which has allowed significant increases in access.

IFFIm spending was frontloaded - largely through a series of investment cases (polio, measles, yellow fever, maternal and neonatal tetanus (MNT), meningitis A) which have been implemented by other partners such as UNICEF and WHO.

2. Effects on Predictability

IFFIm has provided GAVI with predictable funding. The FFA sets out the maximum amount that can be drawn down annually. Within these constraints GAVI sets out its requirements for IFFIm funds on a regular basis. Discussions with key finance staff in GAVI makes clear the importance they place on the *quality* of IFFIm funds as opposed to just its *quantity*. The flexibility of IFFIm funds and the ability to "time shift" (providing funding to GAVI as and when needed) in addition to frontloading it has delivered has provided a useful counterweight to less predictable core funding. It has meant, for example, that GAVI has not had to use its reserves which would have affected its investment income. In some cases GAVI's projections of needs have proved optimistic resulting in IFFIm providing some excess liquidity. This is an inevitable reflection of the demand led nature of GAVI's business and the positive carry has meant it has not been an issue.

There is a further important question of whether predictability for GAVI is translated into predictability where it really matters – at the country level. The GAVI phase II evaluation found that "recipient countries consider GAVI to be a relatively stable and predictable source of finance for routine immunisation expenditure" although the HSS evaluation found some evidence that funds were not always provided to countries in a predictable manner. Finally, there is the issue of whether GAVI actually *uses* the predictability the IFFIm funds provide to achieve its mandate particularly in terms of achieving its market shaping objectives. In short, predictability has been useful for GAVI but active steps need to be taken to make sure its potential is better utilised.

8. Vaccine Market Impact

IFFIm funds were expected to have an impact on vaccine markets through frontloading funds - thereby accelerating demand and volumes purchased – essentially accelerating market maturity. The other anticipated means of impact was via advance contracting, made possible by the predictability and assurance of the IFFIm funds. More detailed specifics of market needs for specific vaccines, and the question of how frontloading and advance contracts would improve the market situation for relevant vaccines, were not elaborated in the IFFIm proposal. "Advance contracting" can take many different forms and the specific form envisaged was not spelt out. There was also little detail on expected results, although one donor did expect a 30% reduction in the cost of the pentavalent vaccine by 2015.

We focused our analysis on four markets: measles, polio, and maternal and neonatal tetanus (MNT) were covered as they were not assessing in the GAVI Phase II evaluation. Pentavalent was assessed as 50% of IFFIm funds were spent on this vaccine category and the original IFFIm proposal had specific intent to influence this market. In addition to this the pentavalent market had changed since the GAVI Phase II evaluation. Health systems strengthening however, this was not covered as a "product category" though it should be recognised that investment in health systems can have catalytic effects by facilitating new vaccine use thus promoting demand/uptake and, in doing so, indirectly accelerating market maturity of the vaccine lifecycle.

In the polio vaccine market, IFFIm funds were used to develop, test and monitor use of monovalent oral polio vaccine-(mOPV) and bivalent (bOPV) products. This has contributed to enhanced security of mOPV , bOPV and trivalent oral polio vaccine (tOPV) supplies as evidenced by new supplier entry. IFFIm also funded eradication programmes and this played a key role in the intensification of the initiative. It is reasonable to assume that this had an indirect impact on maintaining supply security. The market impact of the IFFIm funds set aside for the stockpile is already evident, even though the stockpile has not yet been drawn upon due to delays in achieving key eradication milestones. Having funds dedicated to this use has enabled specific and concrete discussions to take place with manufacturers related to the structure of the stockpile and related arrangements. Knowledge of the stockpile investment has played a significant role in sustaining the supply of tOPV needed to maintain eradication and routine immunisation activities with this product, despite the increasingly short lifespan for OPV products. IFFIm investment was also critical to the rapid development and licensure of the new bOPV vaccine in 2009 which has been central to the striking progress towards eradication in 2010.

For measles, IFFIm funds directly raised the volumes needed for immunisation by 70 million doses to 260 million in 2007 (the extra amount needed for catch up campaigns to vaccinate 1 to 15 year olds in 47 countries). IFFIm paid for the expensive part (catch up immunization of 1 to 15 year olds) and now countries only need to vaccinate the cohort born after every campaign, which they can do more sustainably now. IFFIm raised the volumes of measles vaccines procured not only through funding the "catch up" campaigns in 2007 but also by influencing other markets; "catch up" campaigns were introduced in India and China after seeing the success in IFFIm funded countries. This has increased measles vaccine demand and has therefore maintained incentives for producers to remain in the market.

IFFIm's MNT investment case was intended to "rapidly achieve and sustain MNT elimination in 36 Vaccine Fund-eligible countries." The rationale for the MNT project was not based on market impact, but solely on frontloaded health impact.

It is clear that IFFIm funding changed the pentavalent market size substantially and it is no coincidence that supply dynamics changed alongside. Other factors were also influential in increasing demand and market size, e.g. the 2006 WHO Strategic Advisory Group of Experts (SAGE) on Immunization recommendation. IFFIm strengthened the signal and gave additional confidence to countries to take up the vaccine and to producers to invest. Economic modelling and producer interviews reveal that the incremental demand financed by IFFIm funding was what enabled the market to support more than two producers. Price reductions only came once the market could support more than two producers and price reductions are now ahead of at least one donor's specific expectations. It is possible that

IFFIm's impact could have been stronger if the additional financing had come with explicit communication or rules about how the money would be allocated, e.g. which products would be purchased and in what quantities and over what timeframe.

Although there was an intention to use IFFIm funds to enable "advance contracting", the IFFIm proposal was not clear whether this would be different from UNICEF's usual contracting model - "good faith agreements" over three years with intent to buy specific quantities from specific producers. UNICEF did enter into less traditional "firm commitments" for the pentavalent vaccine both pre and post IFFIm. The firm commitment to buy with IFFIm funds was for half of the awarded volume but a small proportion of overall demand, and it resulted in a small price discount, which was valid for the entire quantity purchased from the supplier.. By the time IFFIm funds were available, the market had become a duopoly and competition was on the near term horizon, therefore advance "firm contracting" of a longer duration or for more significant volumes might have had limited static access benefits but would have risked dynamic market efficiency.

In summary, the incremental funding provided by IFFIm allowed the market to support more producers than would otherwise have been the case. This resulted in greater competition and reduced prices. Expert interviews suggest that many middle-income countries are now considered more likely to adopt the pentavalent vaccine now that its price is headed below US$3 per dose for the poorest countries and hence IFFIm's funding may therefore have benefits beyond the GAVI-eligible countries.

9. Have advocacy and communications efforts been appropriate?

IFFIm's advocacy and communication efforts have brought demonstrable added value in a number of key areas including by having clear messages on innovative, socially responsible investment in a single development purpose; raising awareness around bond issuances; ensuring development messages reach new audiences; communication and advocacy efforts by the IFFIm Board and Board Chair in particular; the association with the World Bank; and donor advocacy and communication. However, management arrangements need to be improved ensuring communication is central to IFFIm strategy, a more robust approach needs to be taken for communication planning and measurement, and increased efforts need to be made to communicate both to donors and investors as IFFIm moves into a new or expanded phase of operation.

10. Expected Results and Health Impact

As GAVI appears to have spent the IFFIm funds on additional activities (and not substituted for core funding) the question of how IFFIm has changed GAVI's results is basically down to the results achieved by the IFFIm funded investments.

The health impact of IFFIm funded investments is difficult to measure. Beyond measuring impact there are also questions about the extent to which benefits achieved by programmes which IFFIm co-finances with others - some of which were established well before IFFIm was established - should be attributed to IFFIm.

GAVI relies on its partners to estimate the health impact of the interventions it supports. Measurement of the impact of its regular programmes can be carried out using a number of approaches including peer review models for its core windows of support. Each of the methods used has weaknesses but new models are being currently being developed and we understand there will be a rapid improvement in the quality of models over the next 12 to 18 months. It will be important to reassess impact estimates when these models become available.

Current approaches include:

15. an annual assessment carried out by WHO which estimates future deaths averted based on estimated coverage rates using peer reviewed models;
16. the Long Range Cost and Impact Model (LRC&I) which is generally used as a forward planning tool and uses simple coefficients of deaths averted by vaccine to project impact;
17. the LiST (Lives Saved Tool) model developed by the Johns Hopkins School of Public Health and.
18. investment case specific estimates made by implementing parties.

Figures derived from the WHO model suggest that IFFIm will have averted some 2.08m future deaths[10] by the end of 2011 (of the 5 million future deaths averted by GAVI as a whole). We estimate this by attributing benefits in proportion to the IFFIm share of spend on the various GAVI programmes. The LRC&I model suggests that IFFIm may have averted just over 1.3m future deaths by the end of 2010 and is likely to avert a total of between 2.5 and 3.5m future deaths over its lifetime. We estimate the longer term benefits based on a range of scenarios using different assumptions on how remaining IFFIm funds might allocate its funds between programmes – pentavalent, pneumococcal and rotavirus and programmes where there is no definite, measurable direct impact such as health systems strengthening. Using the LiST tool we estimate that if 60% of future resources are spent on the pentavalent vaccine IFFIm is likely to save around 1.6m lives by 2030 (this is actual deaths rather than future deaths but excludes Hepatitis B (Hep B) which accounts for around 60% of future deaths averted according to the WHO model). In short, though the models differ the results are broadly consistent.

Overview of Estimates and Projections of Deaths Averted

Programme	**Model /Investment**	**Estimated deaths averted**	**Coverage/Notes**
Core GAVI Programmes	WHO	2.08m future deaths by end 2011 (1.73m end 2010)	pertussis, Hib, Hep B, rotavirus and pneumococcal
	LRC&I Model	1.3m future deaths by end 2010	as above
	LiST	1.6m actual deaths averted by 2030/0.25m actual deaths by 2010	excludes Hep B

[10] The number of deaths which will eventually be averted form the cohort immunised in the year in question. i.e. future deaths in 2010 will include deaths that would have actually taken place in 2011, 2012, 2013 etc.

Programme	Model /Investment	Estimated deaths averted	Coverage/Notes
Investment Cases	Measles	0.86m	Based on assessments by relevant programmes and original investment case estimates (adjusted as necessary)
	Polio	0.04m	
	Yellow Fever	0.687m	
	MNT	0.171m	
	Meningitis	0.022m	

For health system strengthening we make the conservative assumption that the investments do not add *additional* benefits but are required to enable the benefits outlined above to be achieved.

The investment cases raise further questions about impact and attribution. The evidence base for the impact of some of the investment cases is extremely weak though efforts are often underway by WHO and UNICEF to improve them. Peer reviewed models are generally not available. It is particularly difficult to estimate impact of efforts to combat yellow fever; the estimates of deaths averted by the Measles Initiative are heavily dependent on the initial estimate of measles deaths which is open to considerable uncertainty. We also note that investment cases in particular make little reference to country contributions to costs in attributing results which has the potential to provide a misleading picture. Country contributions are not routinely measured but can be substantial (spending by Nigeria on measles was cited as an example). It is often assumed that programmes can be scaled up at marginal cost by donors. In practice, this is unlikely to be the case. The Immunisation Services Support (ISS) evaluation, for example, found that unit costs rise significantly as coverage rates rise.

Overall we adopt a very conservative approach to estimating and projecting health impact and assume that the investment cases avert, at a minimum, 250,000 future deaths which is well below figures currently cited. Given the considerable uncertainty relating to these figures we consider it sensible to use assumptions which we can be reasonably confident do not exceed the real figures. We would suggest GAVI encourages efforts by partners including WHO and UNICEF to improve their assessment of impact and takes a cautious approach to attributing results.

We also note that some of the diseases targeted in the investment cases are nearing the elimination or eradication stages meaning that health benefits are far less important than other benefits. Cost savings in GAVI eligible countries from polio eradication (if it is achieved) are comparable, and may exceed (depending on country policies post-eradication) expected levels of total GAVI funding over the next decade. The release of these donor funds represents a considerable opportunity for GAVI. (Meningitis and measles also offer some potential for eradication in the medium to long term). We would therefore caution GAVI against placing too much focus on deaths averted which - although a clear, simple concept - ignores other important benefits. We would also highlight the potential for GAVI to try and secure part of any “eradication dividend” by persuading donors who previously contributed to the Global Polio Eradication Initiative, and will no longer need to do, so to transfer funding to GAVI.

We also note that some of the investment cases are particularly well suited to frontloaded funding. Investing in global public goods - such as eradication of a disease, for example, is

an excellent fit for frontloaded funds (you buy now so you don't have to pay later). Support for stockpiles to safeguard against, and deal with disease outbreaks, is also a particularly appropriate use for IFFIm funding. In such cases IFFIm provides a form of insurance policy and flexibility is more important than frontloading.

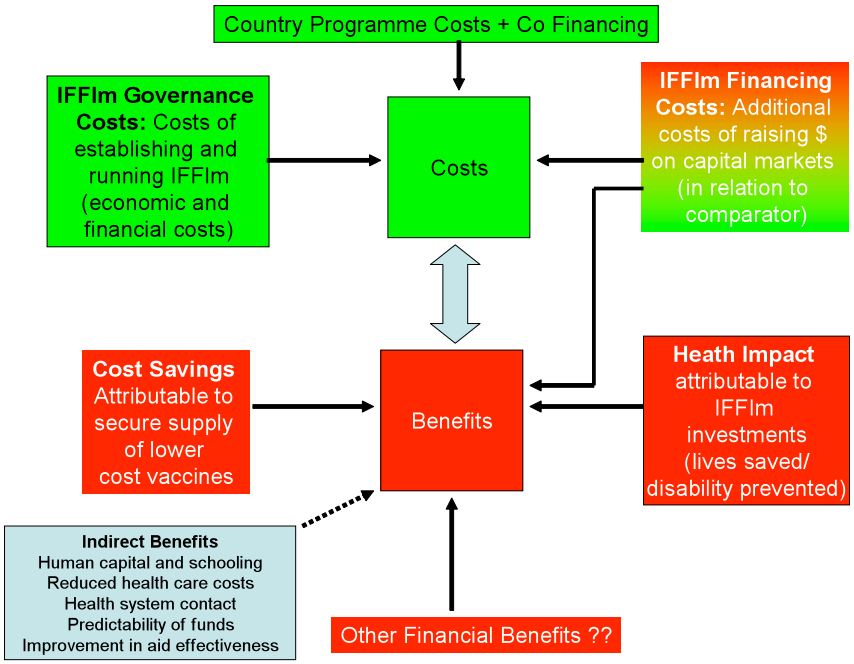
For the purposes of the overall cost benefit analysis (see below) we assume that at least 2.75m future deaths averted can be attributed to IFFIm (2.5m, the lowest figure resulting from the scenarios run using the LRC&I model on GAVI's New and Underused Vaccines (NVS) programmes plus a minimum of 0.25m from the investment cases as outlined above).

1. Overall Cost – Benefit Assessment: what is our overall assessment?

In terms of assessing the overall impact of IFFIm funded investments one key question is to identify the appropriate counterfactual. Should the IFFIm results be compared so a situation in which there would otherwise have been no additional funding for GAVI or should we assume that in the absence of IFFIm, GAVI would have spent similar amounts of money but spread over a longer period of time?.

Our assessment is that we should use the former given that IFFIm funding appears to have been largely additional. We do, however, look at the latter as part of our analysis.

Schematic: Costs and Benefits associated with IFFIm



A fully accurate cost benefit analysis is not possible as detailed data on some costs, such as country costs, are not available. The analysis also excludes indirect benefits such as treatment costs averted, productivity and fiscal benefits (though evidence of their existence is available, is documented in some of the investment cases and the impact can be substantial).

We estimate total costs to be of the order of $6bn set out as follows. Operational costs are estimated at some $7m per annum (including the value of pro bono support and subsidies) totalling $150-170m over IFFIm's lifetime. Investment costs are estimated at $3.9bn to which an arbitrary $2bn is added to cover country level costs. Additional costs associated with raising revenue (related to IFFIm's financial efficiency) are negligible in terms of the overall analysis.

We estimate the value of health benefits - based on at least 2.75 million deaths averted and valuing each disability adjusted life year (DALY) saved at $500, - as being at least $20.9 bn. This implies a benefit cost ratio of just under 3.5:1. In practice, the actual figure is likely to be far higher. As such we conclude that the IFFIm funded investments appear likely to help generate extremely good returns even using very conservative assumptions.

The table below shows the estimated benefit cost ratio for different levels of deaths averted based on different assumptions about how deaths averted are translated into DALYs. It shows, for example, that if 3 million deaths are averted, DALYs are discounted at 3% per annum and valued at $500 per DALY benefits exceed costs by a factor of 3.8:1[11].

Estimated Benefit Cost Ratios – based on different ways of valuing health benefits

	Undiscounted DALYs		Discounted DALYs	
	per capita income		per capita income	
m deaths averted	500	1000	500	1000
0.2	0.71	1.42	0.25	0.51
0.4	1.42	2.83	0.51	1.01
0.6	2.13	4.25	0.76	1.52
0.8	2.83	5.67	1.01	2.03
1	3.54	7.08	1.27	2.54
2	7.08	14.17	2.54	5.07
2.75	9.74	19.48	3.49	6.97
3	10.63	21.25	3.80	7.61
3.75	13.28	26.56	4.75	9.51

11 This further assumes 1 death averted saved 70 DALYs and that DALYs are not age weighted

	Undiscounted DALYs		Discounted DALYs	
4	14.17	28.33	5.07	10.14
5	17.71	35.42	6.34	12.68

Red – costs exceed benefits. Green – likely range of results
Methods for translating lives saved into DALYs are outlined in the main report

In order to "break even" we estimate that IFFIm funds would need to avert around 800,000 deaths. Even our lowest estimates suggest that health impact is likely to far exceed this. IFFIm funds has almost certainly already more than achieved the benefits necessary to justify the total costs in terms of *future* deaths averted (and probably gone a long way to averting the necessary number of *actual* deaths).

The main reason for these results is the huge benefit associated with the proposed investments. The costs of running IFFIm and the efficiency with which IFFIm operates are largely irrelevant in terms of the overall cost-benefit equation. This is not to suggest that efforts to reduce running costs and improve efficiency of IFFIm are not important – just that they have very little effect on the overall cost-benefit results.

We also note that the usual methodology used for valuing health benefits – in which a DALY is valued at the recipient country's average per capita income –unfairly penalises GAVI. This is because GAVI focuses its resources on the poorest countries much more than other donors. Ideally, GAVI should get *additional* credit for achieving results in extremely difficult settings. If one were to value DALYs at $1,000 and use undiscounted DALYs – perfectly reasonable assumptions - the benefit cost ratio for 2.75m deaths averted would increase to 19.5:1.

2. Key Lessons

The key strengths of IFFIm's structure and operating characteristics are that it has:

19. successfully demonstrated a proof of concept;
20. proven to be financially efficient having achieved a very low cost of financing and a diversified funding base;
21. achieved and sustained supranational status in the capital markets;
22. been a robust, flexible model in a very challenging environment;
23. delegated responsibilities in line with partners' comparative advantage and benefited particularly from the credibility/authority brought by the World Bank as Treasury Manager as well as its efficient financial and risk management;
24. attracted committed and highly effective people onto the Board;
25. provided good publicity and advocacy opportunities for GAVI.

The key weaknesses of the model and approach adopted are that:

26. it has not fully utilised the potential the model offers in terms of frontloading and predictability;

27. it has incurred relatively high start-up costs for its current size (though much of this has been covered through pro bono contributions) and has not been able to take advantage of potential economies of scale (due to the funding constraints posed by limited donor pledges);
28. it is not easily replicated;
29. is not easily understood by governments/development community;
30. only 70% of the funds are available to be frontloaded (due to the need to retain a financial cushion);
31. poses significant sustainability challenges especially for an organisation such as GAVI which is expanding its activities rapidly.
32. it is difficult to present the accounts in a clear, simple manner (given the need for hedging and use of derivatives and the ways in which they are accounted for under international accounting standards);
33. it has been highly dependent upon a small number of donors;
34. uses a structure that combines a pro active Board and a conservative World Bank managed approach – ensuring an appropriate balance can be difficult to get right and can cause friction;

The current model - as it stands - may not be directly replicable but does offer major lessons:

If the intention is to test a proof of concept it is important to clearly set out, at the outset, precisely what the model is expected to deliver. Whilst IFFIm does seem to have worked it would have been helpful to have set out a short, clear list of performance indicators at the outset.

The model has been shown to be extremely powerful. However, GAVI has only been able to harness part of IFFIm's potential. The potential uses available to GAVI did not permit it to fully utilise the potential to frontload (although, as noted earlier, some of the investment cases were well suited to frontloading). In short, the model, though well used, was "over-powered" for GAVI – a reflection of the power of the model rather than any shortcomings in the implementation of IFFIm. Other development applications could, in principle, make greater use of the model's power by using the maximum amount of frontloading allowed by any GRL immediately. Increased scale would also allow for greater efficiency as it would allow fairly fixed costs are spread more widely. Whilst not infinitely scaleable the model could certainly be scaled to deliver $40bn per annum as envisaged in the IFF.

As shown in the figure – whilst IFFIm operates close to the frontier of what is possible (segment B in the figure) only part of the power of the IFF concept is being tapped. An IFF approach could deliver more if it were larger and resources were put to a use which was better able to utilise the potential to frontload. An IFFIm type model is perhaps best suited to institutions which are at a mature stage of their development or where the investment is of a "one off" nature. Employing it during/before a growth phase does not create, but will magnify, the funding/sustainability challenges.

An institution receiving frontloaded funding should not reduce its efforts to raise funds from other sources. It should also prioritise activities which serve to reduce any long term

financial implications and thus improve likely sustainability. In this respect GAVI appears to have performed well in terms of raising core funds. Rather than specifically earmark funds (with the exception of the investment cases) it has tended to put IFFIm funds into the general pot. Whilst this has given GAVI flexibility it has meant that funds have not been directed to activities which help assure sustainability.

IFFIm is likely to be particularly suitable for uses which have inbuilt sustainability features (i.e. uses which reduce or even remove ongoing recurrent costs). These might include diseases for which eradication is a possibility (where ongoing costs will fall dramatically after eradication), where recipient country income is growing rapidly (and countries are able to take on the financial burden themselves) or where the magnitude of funding requirements is known but the timing of funding needs is uncertain (e.g. emergencies such as dealing with disease outbreaks) when an IFFIm model can hold resources in an efficient manner and time shift funds as needed.

More generally, IFFIm type arrangements can be especially helpful for organisations where alternative funding channels are unpredictable (i.e. many organisations) and those where needs are driven by country demands (such as GAVI) and where predictable funds can be used to smooth funding patterns.

The model - as it stands - has a limited pool of potential funders - it is not attractive or feasible for some donors. Related to this the approach can appear complex – and difficult to understand. It is, therefore, difficult to sell such concepts to taxpayers – especially given concerns about dangers of financial engineering.

There is more freedom to make changes in the use of funds than in the structures required to deliver the funds. For the latter the structure is largely dictated by the system requirements. However, the two cannot necessarily be separated – the GAVI mandate was important in achieving the Eurostat ruling.

The small details can make a big difference. For example, the conditionality requirements significantly reduce the scope for frontloading. In the case of GAVI frontloading was further constrained by the annual spending limits. In practice, this has not been a major constraint as GAVI was not in great need of frontloading having had to generate a series of investment cases to utilise the revenue from the initial bond. Experience from IFFIm would suggest that with sound governance arrangements and selection of Board members the need to impose spending restrictions declines. At the same time the conditionality requirements will still constrain the ability of the model to frontload.

The IFFIm model only provides predictable funding to the implementing partner (GAVI in the case of IFFIm) but this does not *guarantee* predicable funding for the ultimate beneficiary (GAVI eligible countries in this case). Efforts need to be made to ensure that mechanisms are in place to ensure that this is the case. The evidence suggests that GAVI has performed well in this respect; this issue would, however, require close attention were an IFF- type model to be replicated for other uses.

The model has had unexpected benefits to the recipient which can go beyond just frontloading. GAVI finds the ability to “time shift” particularly useful and the flexibility of funds extremely helpful in terms of its financial management. The flexibility offered by IFFIm

funds, which allowed polio funds to be re-programmed to respond to changing events, also proved to be highly beneficial.

A new approach such as IFFIm is costly to set up. It is important to get it right to avoid costs down the line (FFA). Original expectations are often unrealistic (cost of services/narrow mandate/passive Board) and may need to be revisited at an early stage.

Key success factors have included:

35. the vision of the UK Government and the political commitment of sufficient members of the donor community to make it work;
36. a rigorous design process including the various iterations and considering various options;
37. particularly significant technical inputs from the UK Treasury, Goldman Sachs, the World Bank, the GAVI Secretariat and the various legal advisors;
38. the key honest broker role played by the World Bank;
39. the strong partnership between the key operational players (IFFIm Board, World Bank and GAVI) and their respective leadership and commitment;
40. flexibility and ability to deal with tensions which could have, and could still, undermine the model;
41. the ability to attract and retain MDB status, zero risk weighting and AAA ratings;
42. the exceptional quality of the underwriting banks and funding programme.

The flexibility required to make a complex undertaking such as IFFIm work leaves issues open for interpretation. It is important to identify and resolve such issues early and begin to fill in the gaps as you go along.

43. Introduction

The report is structured as follows. **Section 2** presents a brief background on IFFIm – its history, its rationale, its objectives and an overview of how it was set up. **Section 3** outlines the methodology and evaluation approach. **Section 4** focuses on corporate governance and considers whether IFFIm has been relevant and effective. **Section 5** focuses on IFFIm funding and financial and risk management policies. **Section 6** pulls together findings on a range of issues such as the degree to which IFFIm has been catalytic, the extent to which IFFIm has been affected by the financial crisis, possible tipping points and other issues. **Section 7** assesses the impact of IFFIm funding on vaccine markets. **Section 8** considers the evidence on health impact and attribution of results to IFFIm. **Section 9** presents our overall cost benefit analysis.

Recommendations are presented in a separate document.

1. Background to the Study

HLSP was commissioned by the GAVI Alliance Secretariat, at the request of the International Finance Facility for Immunisation (IFFIm) Company Board, to carry out an evaluation of IFFIm.

This evaluation assesses the extent to which IFFIm is an effective and efficient instrument to attract long-term, predictable donor funds and to frontload money to finance GAVI Alliance support for immunisation and health systems. The evaluation also assesses the extent to which IFFIm has contributed to enhancing GAVI's impact on immunisation and health. The key evaluation questions set out in the terms of reference are highlighted below.

Key Evaluation Questions

44. To what extent has the IFFIm experience to date supported the hypothesis of the International Finance Facility (IFF) regarding the ability of donor countries to make binding long-term commitments and to efficiently securitise these assets through the financial markets? In other words, to what extent does the model "work"?

45. To what extent has the IFFIm fulfilled its overarching objective of delivering significant financial resources for international development, by using capital markets in the short and medium term to leverage long term sovereign pledges?

46. To what extent have the funds raised been in line with original expectations in relation to diversity of donors, catalytic effect, and long term, predictable commitments?

47. To what extent is the IFFIm mechanism cost-efficient in meeting the liquidity needs of immunisation programmes, and how does the efficiency of IFFIm compare to that of other options that could be used to achieve similar results? What are the

strengths and weaknesses of the IFFIm as a financing mechanism, and what are the lessons learned for an expanded, extended or replicated IFFIm?

48. To what extent has the IFFIm been affected by the global financial crisis?

49. What are the risks associated with the IFFIm, including those pertaining to tipping points?

50. To what extent has the IFFIm governance structure been relevant and effective?

51. To what extent have the IFFIm's characteristics - including its shape, structure, operating framework, efficiency of various subcontractors and operating expense structure (non-interest expense of IFFIm) - been effective and efficient?

52. To what extent have IFFIm's approaches to interest rate hedging, currency hedging, liquidity management, leverage ratio, and credit rating issues been effective and efficient?

53. To what extent have the IFFIm advocacy and communication strategy been appropriate and effective? In relation to its advocacy component, to what extent has IFFIm reaped positive externalities in the financial community and in other communities outside development?

54. What are the strengths and weaknesses of the IFFIm structure and operating characteristics and what are the lessons learned for an expanded, extended or replicated IFFIm?

55. To what extent has the IFFIm contributed to accelerating the achievement of GAVI's goals (including deaths averted and reduced morbidity) in the past three years?

56. To what extent has the form, timing and character of the money delivered to GAVI made a difference in enabling GAVI to undertake its activities and fulfil its objectives?

57. What would GAVI's results have been without the IFFIm funds?

1. Background to the GAVI Alliance

The GAVI Alliance was launched in 2000 to increase immunisation coverage and reverse widening global disparities in access to vaccines. Governments in donor and developing countries, UNICEF, WHO, the World Bank, civil society, foundations, vaccine manufacturers, and research and technical institutions work together as partners in GAVI Alliance to achieve common goals, in recognition that only through a strong and united effort can higher levels of support for global immunisation be generated.

The GAVI Alliance mission is to save children's lives and protect people's health by increasing access to immunisation in poor countries. The GAVI Alliance Strategy positions GAVI's work within the broader context of child survival and the Millennium Development Goals. The Alliance also makes a major contribution to meeting global goals outlined in the

WHO/UNICEF Global Immunisation Vision and Strategy (GIVS) by supporting immunisation programmes and health systems in the world's poorest countries.

The strategy for 2011 to 2015 was recently approved by the GAVI Alliance Board. Key strategies are to

58. accelerate the uptake and use of underused and new vaccines;
59. contribute to strengthening the capacity of integrated health systems to deliver immunisation;
60. increase the predictability of global financing and improve the sustainability of national financing for immunisation;
61. shape vaccine markets.

The strategy also includes two cross-cutting areas: Monitoring and Evaluation, and Advocacy, Communication and Public Policy.

1. The Genesis of the International Finance Facility (IFF)

From the late 1990s there was an emerging consensus that more, but also better, aid was required if major progress was to be made in the development field. This was given additional impetus by the establishment of a set of challenging Millennium Development Goals (MDGs). The Zedillo report of 2002 subsequently estimated that an additional $50bn of aid would be required each year to meet these goals. This stimulated further thinking on innovative financing and its possible role in meeting outstanding financing needs.

The concept of using aid pledges to leverage private capital flows was initially proposed by the UK Chancellor in a speech to the US Federal Reserve Bank in 2001 The aim was to close the gap between existing pledges of $12bn that had been made by the EU, US and other donors at the Monterrey Summit in 2002 and the additional $50bn estimated to be needed annually to ensure the Millennium Development Goals (MDGs) could be met as planned by 2015.[12]

The International Finance Facility concept was developed by the UK Government as one of a number of proposals for innovative ways of raising additional development finance and securing value for money. The basic concept was set out in a UK Treasury paper in 2003 developed with input from Goldman Sachs:

... "A limited life entity designed to use securitisation to frontload aid flows and so deploy a critical mass of development finance over the next 10-15 years to allow the MDGs to be met by 2015. We envisage its overall life would be around 30 years; the bulk of its disbursement would take place in the years up to 2015"

UK Treasury Feb 2003

In the same year, the UK Government also made a public commitment to work closely with other Governments, business and non-governmental organisations to develop a more

[12] International Finance Facility –a technical note HM Treasury Feb 2003

detailed proposal and to build up support[13]. The facility was explicitly aimed at supporting the poorest countries in order to increase education and health care necessary for development.

The key design parameters included:

62. being built on long term donor commitments to make (future) "streams" of annual payments to the IFF for earmarked countries;
63. the IFF would borrow against the security of the income stream by issuing bonds in the international capital markets;
64. donors would be legally bound to make the payments;
65. the IFF would not be an agency for disbursement but would use existing effective bilateral and multilateral mechanisms to pool and coordinate these resources more effectively.

The possibility of applying the IFF concept to immunisation was raised at the World Health Assembly in 2004 and discussed at the G8 meeting in Gleneagles in 2005. The aim was to provide a relatively stable and predictable flow of development assistance for immunisation. The UK made an initial pledge of conditional annual payments of $1bn over 20 years and France, Italy, Spain and Sweden also agreed to take part[14.] Goldman Sachs continued to work with UK Government officials and the Global Alliance for Vaccines and Immunisation (GAVI) to finalise the operational structure. Initial scenarios envisaged different options for revenue mobilisation: $4bn; $6bn and $8bn.

GAVI had started up in 2000 as a non-juridical public–private association between UNICEF, WHO, the Gates Foundation and partner governments. It worked closely with the US based not for profit Vaccine Fund previously established by the Gates Foundation. In October 2004 an initial structure for IFFIm had been proposed by GAVI that envisaged using the existing GAVI Board (to approve country allocations) and Vaccine Fund (which received and disbursed donor funding for immunisation).[15] In addition, a debt issuance entity was to be created as a stand-alone legal vehicle independent of the donors, towards which donors could direct their commitments and make payments on these commitments. The main role of the vehicle would be to package the donor commitments and to issue notes to investors in the capital market. The debt issuance process was anticipated to involve a range of Treasury management functions.[16]

GAVI, for its part, was seen by potential investors as a credible partner, able to scale up access to immunisation rapidly but lacking the resources to do so, open to new ideas and willing to implement the pilot. Immunisation was also considered to have features consistent with the IFFIm concept. Firstly, immunisation is well recognised as offering particularly cost effective interventions. It also offers positive externalities in that some degree of protection is also afforded to those who do not actually receive a vaccination. In addition the fact that

13 Press notice 14 Feb 2003

14 Financial Times August 2005 : Novel UK funding for vaccines approved

15 Documents provided by the UK Government

16 IFFIm proposal document

benefits increase rapidly – due to herd immunity - once a certain level of coverage is achieved – make a strong case for frontloading support to achieve this earlier than would otherwise be possible. Immunisation aims to ensure more, healthier children survive and contribute to economic and social development. Finally, it is easier (though still not necessarily easy) to link outputs (immunisation coverage) with outcomes (deaths averted and reduced morbidity) than for many other health interventions.

The GAVI Secretariat (supporting the GAVI Board) would provide the interface between the entities to ensure effective operation but also crucially to keep overhead costs, especially staffing, to a minimum. In its final form, the International Finance Facility for Immunisation (IFFIm) had no staff of its own and it remains totally reliant on contracted services or GAVI support.

These arrangements were to be set down in a broad framework agreement to be agreed up front between IFFIm donors and the issuance vehicle. The issuance vehicle would use the World Bank or the Vaccine Fund to undertake basic treasury functions including balance sheet risk management and cash management.

There were a number of critical issues and donor requirements to be considered that had a major influence on the final design of IFF. At this stage the potential "grantor" nations had three key requirements. The first was for the three main credit rating agencies (Fitch, Standard and Poor and Moody's) to rate IFFIm "AAA". This was necessary to ensure that the costs of borrowing were kept as low as possible. The second was for the donor pledges to be expensed through the donor budgets as they were paid (as opposed to upfront) and ideally for the debt incurred through the frontloading to be kept off the public sector balance sheet. On this basis they would not be regarded as long term public debt or liability that would build up over time but would represent a series of obligations that would be accounted for in donor budgets in the years that they are paid.[17] The third was to try and make use of existing organisations according to their comparative advantages and also to provide economies of scale in financing and expenditure.

In November 2004 the UK Treasury asked the Office of National Statistics (ONS) [18] to classify IFFIm and advise on the question of how the donor pledges should be recorded within the national balance sheet. (Under normal European accounting arrangements multiyear commitments with no conditionality are reflected in the budget in full in the year the commitment is made). ONS subsequently gave preliminary advice and proposed that a ruling also be sought at a Europe wide level from the Committee on Monetary, Financial and Balance of Payments Statistics (CMFB). The CMFB opinion was made public and endorsed by Eurostat in August 2005. The Eurostat ruling confirmed the advice provided by the ONS that the borrowing of IFFIm should be considered as the borrowing of a non-government unit and not as the borrowing or debt of donor countries. Furthermore it was

[17] See explanation in IFFIM case study -Lessons for Development Finance from Innovative Financing in Health OECD Global Forum Brookings Institute October 2008

[18] The ONS decided on the classification of all entities and transactions for the purposes of producing the national accounts. The ONS has an obligation to consider any new entity where the UK Government has an active role in its creation or restructuring.

decided that the government pledges in the context of the IFFIm initiative should be recorded as government expenditure when the pledges are actually made to GAVI.

This ruling required that, IFFIm had to be legally and organisationally independent from the donors. It was proposed at the time that IFFIm would be a limited company. The role of Government was to be limited to annual pledges.[19] A key aspect was that grantors did not have the power to appoint IFFIm Directors. Furthermore that there was no commitment by a donor Government to cover the interest and capital payments of IFFIm and that the conditionality of the payments by governments placed the bond holders at genuine risk[20].

The UK Government concluded that:

66. IFFIm should not be consolidated on to the UK Government balance sheet through DFID or any other public body;
67. this approach was consistent with the National Accounts treatment of IFFIm's borrowing by an international organisation in the rest of the world;
68. a Government liability should be recorded in the form of a provision at some yet undetermined point.

The Eurostat ruling did not set any precedents for any future IFF as it applied only to the specific IFFIm proposal by GAVI and any subsequent extensions (This has clear implications for the possible replication of other IFFIm-type approaches). It was understood that IFFIm was not the entity that would fulfil the initial donor requirements to mobilise an additional $40bn per annum. It was explicitly seen by donors as "effectively a smaller-scale immunisation specific pilot scheme for the larger IFF".[21]

A key objective of the donors was therefore to try out IFFIm as a "proof of concept" which could demonstrate the validity of the concept whilst making an important contribution to the funding gap required to deliver the MDGs. A second objective was to do so as cost effectively as possible. Potential "launch" donors recognised that this would require low bond issuance costs and also a streamlined and low cost organisation structure. An alternative approach would have been to have permanent IFFIm staff but donors did not want this.

Detailed design work on IFFIm continued throughout 2005 and by the end of the year the World Bank had become involved as a potential Treasury Manager. Following a ruling by the Basel Committee on Banking Supervision in 2006 IFFIm was classified as zero risk weighted as is common with multilateral development banks. IFFIm was incorporated as a charitable company in the UK in June 2006 one month after the GAVI Fund Affiliate achieved the same status. The founding documents that provide a legal agreement between the various entities - grantor nations, GAVI Fund, the GAVI Fund Affiliate (GFA),

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19 National Accounts Classifications: The International Finance Facility for Immunisation (IFFIm) Martin Kellaway and Helen Shanks August 2005

20 Decision of Eurostat on deficit and debt: Accounting implications of the "International Finance Facility for Immunisation" initiative STAT/05/98 Date 02/08/2005

21 Ibid ONS 2005

IFFIm and the World Bank - were signed by all parties in September 2006 and provided the legal and procedural basis to commence programme approval and bond issuance.[22]

A timeline of key events is at **annex 1**.

1. Rationale for IFFIm

IFFIm was established in response to a number of constraints:

69. there was a significant gap between financing needs for immunisation and the related health system to deliver child health services and resources available from normal sources in developing and donor countries;
70. vaccine prices were too high and supplies too irregular. IFFIm funding was seen as a way of increasing market volumes, attracting new investment into vaccine markets and ultimately reducing prices and improving market stability and therefore reducing the overall financing needs in the long term;
71. the lack of predictability in resource flows was creating unnecessary inefficiency as it prevented effective planning and sustained expansion of primary health care coverage.

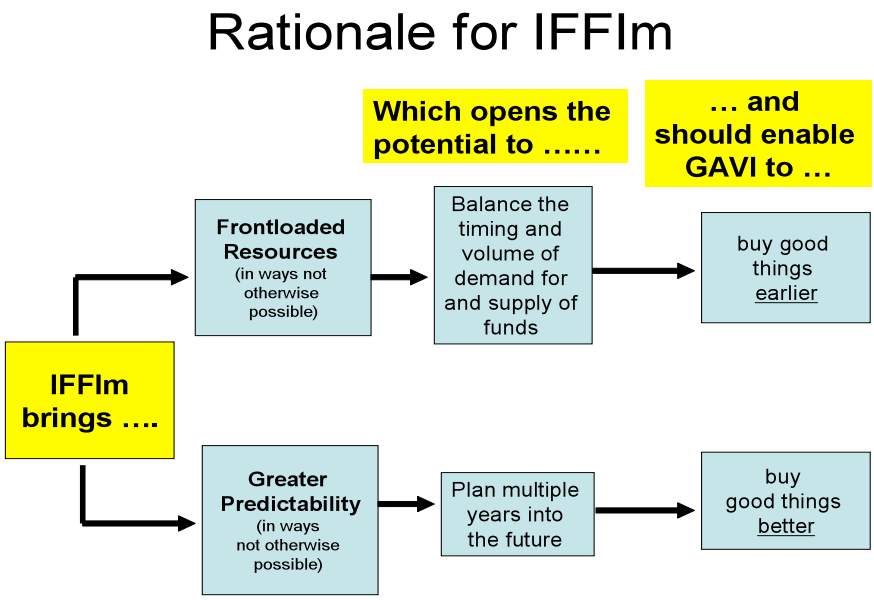
IFFIm was intended to address these constraints through:

72. **Frontloading resources:** By bringing expenditure forward IFFIm was expected to allow short term funding gaps to be covered and hence rapid gains in child health to be achieved. By accelerating market development, including reducing vaccine prices, IFFIm would also contribute to closing long term funding gaps;
73. **Greater predictability:** The IFFIm structure addresses predictability concerns by requiring donors to make legally binding commitments over a long period of time rather than relying on more unpredictable contributions to regular resources.

IFFIm was intended to help deliver results as set out in figure 1.

[22] Founding documents is a generic term used throughout this report to refer to the Master Definitions Agreement; the Finance Framework Agreement; Procedures Memorandum; Administrative Support Agreement; Treasury Management Agreement.

Figure 1

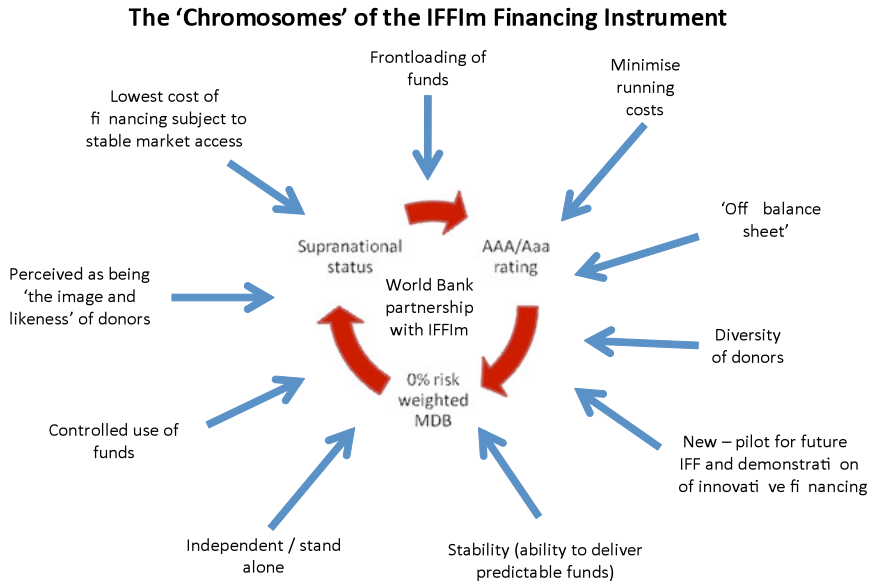


IFFIm, therefore, aims to provide a combination two key funding characteristics that are not commonly available with traditional international development funding mechanisms: (a) the provision of long-range, multi-year income pledges; and (b) access to capital markets when funding is needed for programmes.

1. Key Design Features

Figure 2 illustrates the key design features of the IFFIm:

Figure 2: Key Design Features of IFFIm



The key design requirements or 'Chromosomes' of IFFIm determined the structure in place today

The relationship between the IFFIm Board and the Treasury Manager sits at the core – with the maintenance of its AAA credit rating, through achieving supranational status and a 0% risk weighting essential for effective and efficient implementation.

Some of the design factors shown reflect donor choice – others were essential legal preconditions for a viable structure. So, whilst IFFIm was designed to operate as the "image and likeness" of donors – it was required to be operationally independent. Key requirements from donors (and GAVI) included the need for IFFIm to deliver frontloaded, predictable funds, low running costs, low borrowing costs and the controlled use of resources (annual ceilings were placed on expenditure of IFFIm funds). Off balance sheet funding was required by some donors – some degree of donor diversity was needed for political reasons and well as to secure regulatory approval. There was also a wish to pilot new concepts (given the perceived failure of traditional approaches).

The specific objectives and targets of IFFIm were not set out very explicitly. Although donors such as DFID did have a range of internal performance indicators (which have been shared widely) the IFFIm proposal submitted to the GAVI Board only referred explicitly to targets for raising revenue and health impact. There is also a lack of clarity over objectives – for example whether market shaping was ever an intended objective.

2. Who supports IFFIm and why?

Currently a total of 9 donors are supporting IFFIm. They differ widely in relation to a number of characteristics:

Size of their contribution: the vast majority of IFFIm funding comes from the UK and France who together account for around three quarters of total pledges. Table 1 shows how the share of funding has evolved over time.

Table 1: Donor pledges for IFFIm (Hedged Present Value)

*

	Oct 2006		Mar 2007		Dec 2007		Dec 2009		Oct 2010	
	US$m	%	$m	%	$m	%	$m	%	$m	%
UK	1,426	60.1	1,426	59.8	1,426	45.9	1,426	44.5	1,696	46.2
France[23]	335	14.1	335	14.0	1,055	34.0	1,055	32.9	1,055	28.7
Italy	398	16.8	398	16.7	398	12.8	398	12.4	398	10.8
Netherlands							100	3.1	100	2.7
Spain	161	6.8	161	6.8	161	5.2	161	5.0	161	4.4
Sweden	27	1.2	27	1.1	27	0.9	27	0.9	27	0.7
Norway	24	1.0	24	1.0	24	0.8	24	0.8	223	6.1
RSA			12	0.5	12	0.4	12	0.4	12	0.3
Total	2,372		2,384		3,105		3,205		3,673	

Source: HLSP based on data from the World Bank

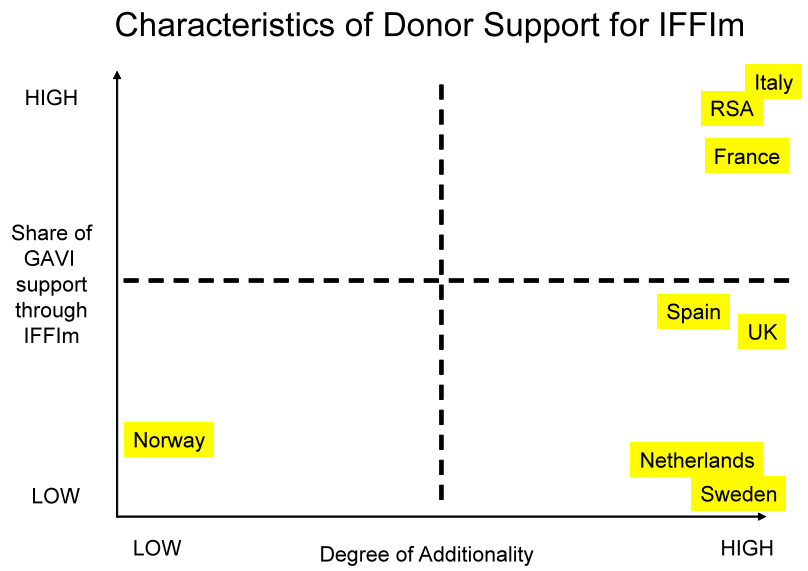
Share of GAVI support channelled through IFFIm: some donors (Italy, South Africa and, to a lesser degree, France) fund GAVI almost exclusively through IFFIm. Some (UK and Spain) share their support roughly equally between IFFIm and core funding whilst others (Netherland and Sweden) provide the bulk of their support to GAVI in the form of core funding;

The degree of additionality in support: for most donors support to IFFIm is additional to that of their core funding – Norway is an exception. (This is discussed in more detail in section 5);

Current donor "performance": some of the donors currently fall well below the 0.7% of GNI target for development assistance. For such countries IFFIm can be seen as a way of boosting their support to higher levels in the short term. Italy, Spain and France would fall under this category. The UK plans to meet this target in the near future. The Netherlands, Norway and Sweden have comfortably exceeded this target for some time.

[23] Support from France was through two agreements. One with Agence Francaise de Development (AFD) amounted to 372.8m euros ($472.9m) the other through Ministry of Economics Finance and Industry (MINEFI) for 867.2m euros ($1,246.8m)

Figure 3



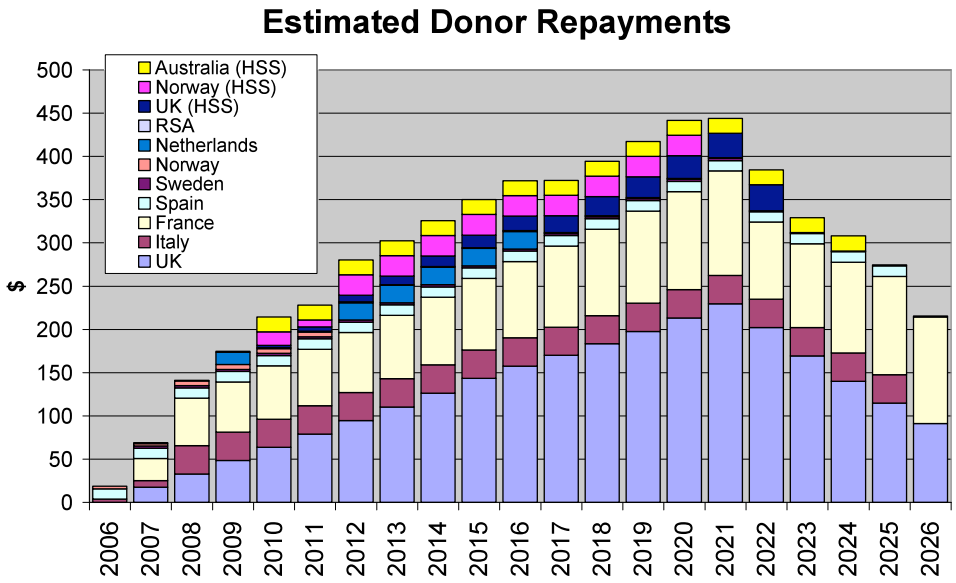
Sources: Share of GAVI Support through IFFIm – GAVI Secretariat:
Degree of Additionality HLSP analysis see section 5.2

74. **Rationale for supporting IFFIm**; reasons cited by donors in interviews varied from a strong ownership of the IFFIm model, to wanting to signal a strong commitment to support innovative financing initiatives, to a wish to support international health, as a whole, to a more specific wish to show support for GAVI and its mandate;

75. **Timing of their contribution**: the original expectation was that countries would make equal repayments over an extended period. In practice – some donors (e.g. UK) have heavily back loaded their support – while others (e.g. Norway) make repayments over a relatively short time horizon. The overall pattern of expected repayments – based on our analysis of the individual grant agreements - is shown in the figure 4[24].

[24] Under the original agreement some funds were earmarked for HSS. This was subsequently dropped with the Board agreeing a minimum floor for spending on HSS for GAVI funds as a whole at the November 2010 Kigali Board meeting. Figures for Australia are estimated – agreement has not yet been signed

Figure 4



Source: Grant Agreements[25]

A number of the donor staff interviewed suggested that IFFIm had made their own lives much easier as they did not have to go back each year to their respective finance ministries argue their case.

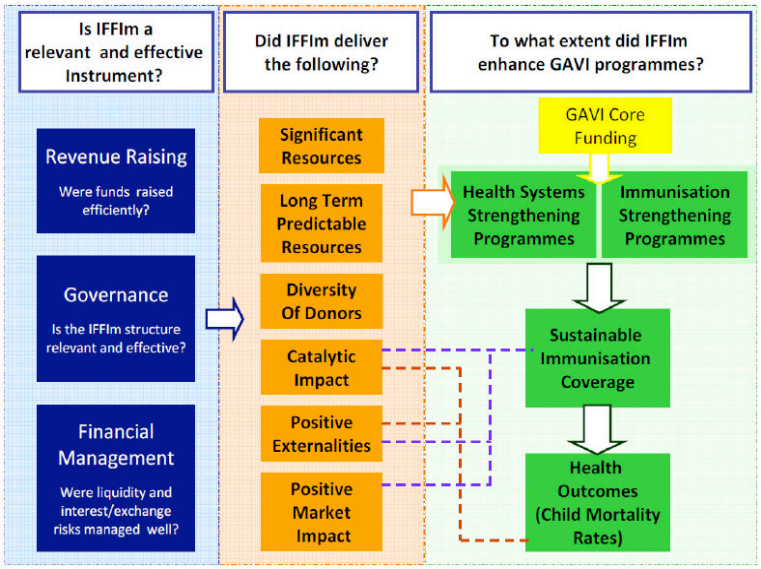
25 To note the grants originally earmarked for Health Systems Strengthening have now been unearmarked

76. Methodology

1. Evaluation Framework

The evaluation framework below sets out the key evaluation questions.

Figure 5: Evaluation Framework – Key Evaluation Questions



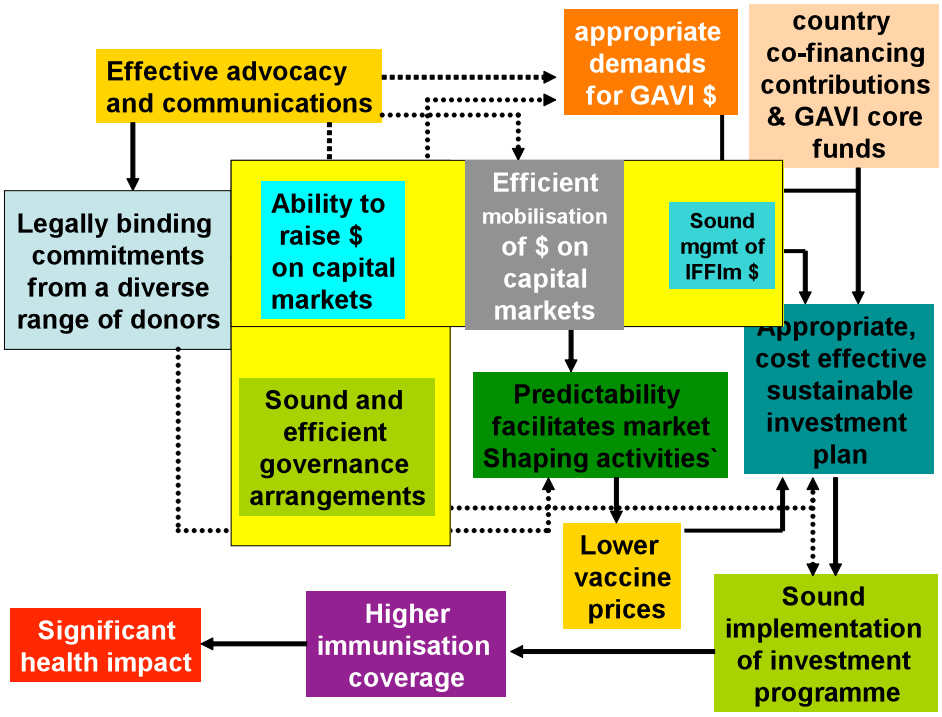
A list of more specific questions related to the different components is at **annex 2.**

2. Causal Pathway

The causal pathway set out in figure 6 below sets out how IFFIm was expected to deliver results. We would emphasise the importance of other players e.g. role of GAVI Board (we take a wider view of governance arrangements) and countries (who need to develop sound plans and providing some co financing to ensure programmes are sustainable). The chart does simplify somewhat (e.g. sound management of IFFIm funds and evidence of IFFIm health impact feed back into advocacy).

We make the clear distinction between **IFFIm as a mechanism** (contained within the shared area) and the **use of funds raised by IFFIm to generate health benefits** (the overall pathway) as these are two rather different, though both very important, issues.

Figure 6: Expected Causal Pathway



3. Key methods

In terms of methods we used a mix of literature review, data collection and analysis and structured and unstructured interviews with a range of key stakeholders. We also commissioned a survey of bond dealers working in the Uridashi markets in Japan which the World Bank carried out on our behalf.

Interviews were carried out with a range of key stakeholders representing the GAVI Alliance, the World Bank, the IFFIm and GFA Boards, entities providing key services, rating agencies, WHO and UNICEF and donors. The aim was to speak to a representative sample of those who had been involved in the design, implementation and financing of IFFIm.

We addressed a number of key hypotheses as set out in **table 2** below.

Table 2 Hypotheses Tested by the Evaluation Team

1.	IFFIm 'filled a void' in terms of providing aid flows which bridged the funding gap for immunisation in a way in which traditional aid flows could not have done
2.	Donor funding for IFFIm has been additional to existing GAVI core funding
3.	IFFIm was a significant achievement in terms of getting multiple donors to coordinate their aid and focus it on vaccination
4.	IFFIm has been able to attract the diversity of funding initially anticipated
5.	IFFIm funds have been allocated in line with GAVI's mandate, on cost effective interventions which have, or are likely to, deliver substantial health impact
6.	IFFIm funds have provided GAVI to the critical funding mass needed to attract new vaccine producers, resulting in increased supply security and reduced pricing.
7.	IFFIm funding has allowed GAVI to "make good" on the AMC commitment and can claim some credit for the AMC's market impact on the pneumococcal vaccine. (note also catalytic effect)
8.	The nature of IFFIm funding (predictable, frontloaded finance) has enabled UNICEF to work in new ways with industry e.g. new methods of procurement management and/or contracting such as change in duration or degree of volume commitments
9.	This has resulted in quantifiable benefits (e.g. supply security or price reduction)
10.	GAVI has been catalytic in terms of influencing the actions of other stakeholders in international health (for the better)
11.	Under the circumstances, IFFIm was the only workable model available
12.	The complex IFFIm structure is a product of the negotiation/compromise necessary to get all sides to commit and works well
13.	IFFIm could be replicated in its current form for a different purpose e.g. broader development
14.	The outsourced model is sound. An open and transparent process was used to contract the Treasury Manager. Its subsequent performance has been good.
15.	Without the World Bank taking on the Treasury Management role in the way it did IFFIm could not have achieved what it did and may not even have been possible at all
16.	The IFFIm Governance framework was based largely on a UK legal and institutional framework which has limitations
17.	Immunisation is an ideal testing ground for the IFFIm concept. Other uses are possible but are less well suited
18.	IFFIm is "overpowered" for issues such as immunisation (and probably for other purposes)
19.	GAVI did not make full use of the IFFIm model
20.	GAVI made too little use of the potential benefits from predictability.(see vaccine market section)
21.	Governance arrangements appear complex but work effectively.
22.	This is down largely to the personalities involved -GAVI is vulnerable to the turnover of Board members.

23.	GFA provides effective oversight of IFFIm but other approaches might be possible.
24.	Combining the IFFIm/GFA Boards could improve efficiency
25.	Accountability of IFFIm Board could be clearer
26.	The IFFIm Board has operated effectively benefiting from institutional independence and has relied on the quality, skills and personal commitment of Board members
27.	The linkages between IFFIm and GFA/GAVI are sound
28.	Trustee reports and financial statements accord with requirements but could be more transparent
29.	Administration and other support provided to IFFIm by the GAVI Alliance and its partners are provided in a transparent manner
30.	The high risk nature of investing in IFFIm (including its long term legally binding nature) meant that donors introduced greater restrictions on IFFIm's operations than were strictly necessary.
31.	The bond issuing process created positive externalities.
32.	IFFIm identified the risks it was exposed to, had the correct policies in place and took the correct steps to minimise those risks
33.	The bond issuing process was conducted professionally by relevant experts and took advantage of all the advice/information available at the time
34.	There was (and is) a tension between the aim of raising money efficiently using the capital markets and satisfying GAVI/IFFIm's other non-financial objectives.
35.	IFFIm got this balance about right
36.	Funds were raised in a cost effective manner
37.	The IFFIm model is robust (having survived the financial crisis intact)
38.	IFFIm has benefited from considerable support from third party service providers in the form of subsidised services or pro-bono work
39.	IFFIm was a product of its time which could not be recreated now due to a changed regulatory landscape
40.	IFFIm has been used successfully as a vehicle to improve awareness about GAVI
41.	The advocacy and communication strategy has targeted the right people

Interviewees were asked a series of questions drawn from a more detailed list of questions aimed to test these hypotheses (and set out in **annex 2**). Interviewees were also given time to express their general views of IFFIm progress and performance. In some cases repeat interviews were carried out. A list of those interviewed is at **annex 3.**

The key data sources are set out in the respective sections. We sought, where appropriate, to triangulate the data where it was provided by an interested party.

1. Limitations of the Study

The evaluation was limited by a number of factors:

42. Firstly, and most importantly, the HLSP proposal was prepared on the basis that the phase 2 evaluation would have already assessed the impact of GAVI spending and that our role would be largely restricted to assessing the IFFIm contribution to this i.e. that the task would largely be one of attributing results to IFFIm. This did not prove to be the case. This broadened the scope of our work and would have ideally required additional inputs and different skills.

43. Faced with the additional task of assessing health impact the team were constrained by the lack of, and poor quality data and shortcomings in the models currently used to assess health impact. These are discussed in the relevant section. We were not able to access the original data on expected health impact.

44. We initially expected to be able to use primary data from Bloomberg to carry out most of the analysis of the financial efficiency of IFFIm. In practice, this did not prove to be possible. As a result we had to seek external information where possible to verify the data provided. (This is discussed in more detail in section 5).

45. We were not allowed access to some of the key documents[26] – notably the French audit and the HSBC report commissioned by the IFFIm Board which covered some of the areas considered as part of this evaluation.

46. Finally, some stakeholders were not willing to put their views on the record. We have respected these wishes.

In broad terms we are fairly confident that the findings on financial efficiency – based largely on quantitative judgements - are reliable. The findings on corporate governance rely far more on qualitative judgements and perceptions and opinions of those interviewed. We have attempted here to focus on the facts and triangulate where possible to ensure findings are reliable. We have relatively little confidence in the robustness of the findings on health impact.

Given that one of the aims of this evaluation is to compare the cost and benefits of IFFIm (in which health benefits play a key role) our general approach here has been to use highly conservative assumptions. This has included the rather unorthodox use of arbitrary assumptions to flag up important issues where there is no real evidence base for making any assumptions. We have done this ensure that risk of overestimating benefits and underestimating costs are at sufficiently low levels for us to be confident that our broad conclusions about the impact of IFFIm funding are sound, We recognise that this might be rather unfair to those managing these programmes. However, we consider it essential if we are to provide a robust assessment of the merits of IFFIm – it also places an onus on

[26] Due to client confidentiality requirements, the report commissioned by the IFFIm Board and prepared by HSBC could not be made available to the evaluation team.

the beneficiaries of IFFIm funds to provide more reliable estimates of impact than exist at present.

1. Choice of Counterfactuals

The identification of a plausible counterfactual is a key component of any evaluation process. Simply assuming nothing would have happened had IFFIm not been established might lead to misleading conclusions about its impact. The actual choice of counterfactual is largely a matter of educated guesswork. We distinguish below between counterfactuals which relate to the issue of IFFIm as a mechanism and those that relate to GAVI's use of its funds.

1. Counterfactual: IFFIm as a mechanism

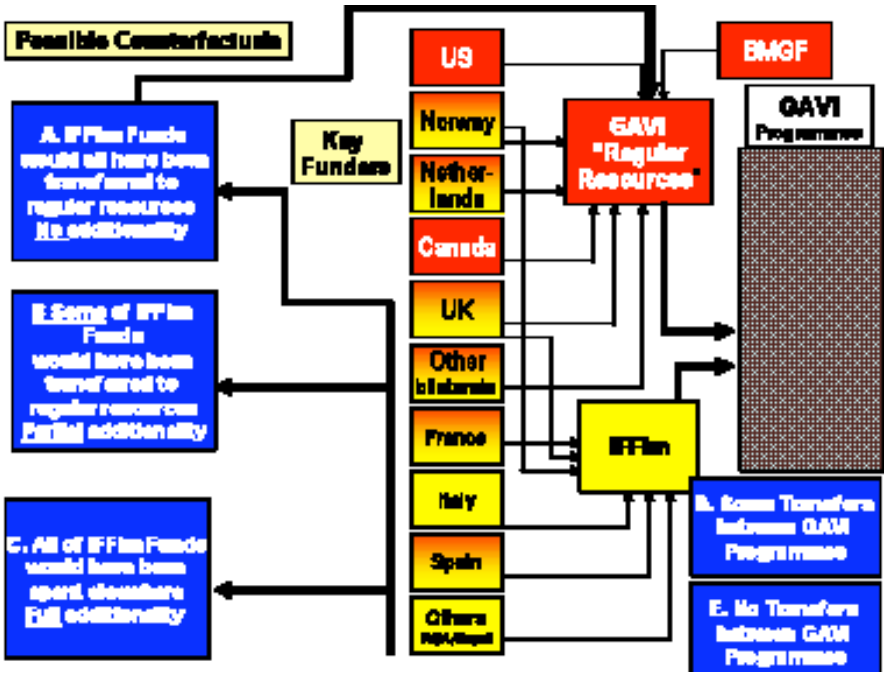
Were there other ways of raising IFFIm type amounts of frontloaded and predictable funds? In principle, donors could have increased their aid budgets in line with their international obligations to provide 0.7% of GDP as development assistance. Similarly a single donor might also have borrowed the money individually and donated it to GAVI. Whilst both of these approaches could potentially have raised the necessary volumes of resources they would not have been able to deliver IFFIm level predictability. More importantly they would not have achieved off balance sheet financing – which was seen as a pre-condition at the time. A model in which the World Bank, or another multilateral development bank, securitised donor pledges could potentially have done both.

We do not consider any of these options as true alternatives given that IFFIm was established for the very reason that these options were not considered to be viable at the time. Having said this we do investigate what the implications of such "theoretical" alternatives might have been as such constraints need not necessarily apply in future.

2. Counterfactual: Use of IFFIm Funds

At the outset we felt it unlikely that IFFIm would have provided entirely additional resources for improving health in poor countries. For some donors IFFIm funding might have been additional to their core funding to GAVI – in others cases it might have substituted for it. The possible choices of counterfactual are shown in the schematic below. It distinguishes between donors which only provide core funding (in red), to those who support both IFFIm and core funding (red and yellow) and those that only fund IFFIm.

Figure 7: Choice of Counterfactuals



It shows three scenarios related to the donor response (A, B and C which range from IFFIm support having no additionality to full additionality) and two broad scenarios related to the GAVI Alliance response (D and E which range from no change in allocation by programme to significant changes e.g. between new and traditional vaccines).

Our assessment based on analysis of donor contributions to GAVI pre and post IFFIm and discussions with senior staff in GAVI suggest that what has actually happened is a combination of C and E. Donor pledges for IFFIm have been almost totally additional and IFFIm has allowed GAVI to undertake additional activities rather than substitute for existing ones. Evidence for this is presented later in **section 5.2**.

On the basis of this we take the main counterfactual to be that in the absence of IFFIm GAVI's spending would have remained broadly in line with its actual core funding and it would have funded the same activities that are currently core funded.

One counterfactual we considered was to assume that – in the absence of IFFIm donors might have provided the same amount of money but over a longer period of time (consistent with counterfactual A of no net additionality). We do not consider this an appropriate counterfactual but assessed its impact anyway through illustrative modelling of the effect of different levels of frontloading on health impact as we felt this may be of some interest.

47. Corporate Governance Aspects

1. Options and Alternative Structures

The IFFIm model, as it stands, is described in **section 2**. From the outset of the design process the aim was to get a working structure rather than look at alternatives; Goldman Sachs had initially proposed that IFFIm should be designed so that it would be accepted as a supranational issuer. As a result, IFFIm needed to be rated AAA which in turn required that a majority of donors be AAA. As ONS had previously pointed out, if IFFIm was a single Government entity, it would cost more to undertake advance borrowing than if the individual state undertook the task itself. By targeting AAA participants it was thought possible to borrow at a rate acceptable to the donors and to deliver the planned critical mass of aid.

The most important influence on the costs and feasibility of borrowing was the need to obtain AAA ratings from the credit rating agencies. The ratings of the sovereign grantors were critical to this decision as was the participation of a Treasury Manager with established credibility in the markets and strong AAA ratings. The rating agencies have confirmed to the evaluators that the ratings of IFFIm are directly linked to those of the UK and France.

MDBs have some well known common characteristics including being formed by a group of countries who are typically shareholders of the Bank and led by a Board of Directors appointed by them to ensure the effective delivery of development finance to poor countries. The proposed structure and regulated charitable status of IFFIm did not fully match these characteristics. However, IFFIm's designers aimed to meet the requirements for being accepted as an MDB by demonstrating:

48. strong political support from donors;
49. simple, transparent cash flows;
50. participation of a Treasury Manager with the requisite experience and AAA credit rating;
51. confidence in its financial governance;
52. an interest in innovative financing;
53. not for profit character;
54. expertise in development finance.

The third of these effectively constrained GAVI and the grantors to organisations that had the highest standing in the capital markets and were virtually "bombproof" against bankruptcy or any unforeseen events including an economic downturn. This meant considering a structure which included existing MDBs (the World Bank and Regional Development Banks) or possibly also highly rated private sector investment banks (only banks with strong AAA ratings would have qualified). In practice, though, it was recognised by GAVI that the World Bank was the front runner organisation to be included in the emerging new structure as it had a long experience in the capital markets and that it:

"manages its finances according to conservative policies and standards and will ensure that IFFIm conforms to similar standards." GAVI officials Quoted in OECD Global Forum 2008

After an open recruitment process in which the European Investment Bank (EIB) was also invited to tender, the World Bank was taken on as the Treasury Manager under the framework of a Treasury Management Agreement signed on 29thSeptember 2006.

The IFFIm design process did not, therefore, allow for much analysis of alternatives as the task was seen as developing a practical structure to deliver the desired outcome. Earlier in the process there had been two main options in the initial 2004 GAVI proposals which were considered for the basic IFFIm structure:

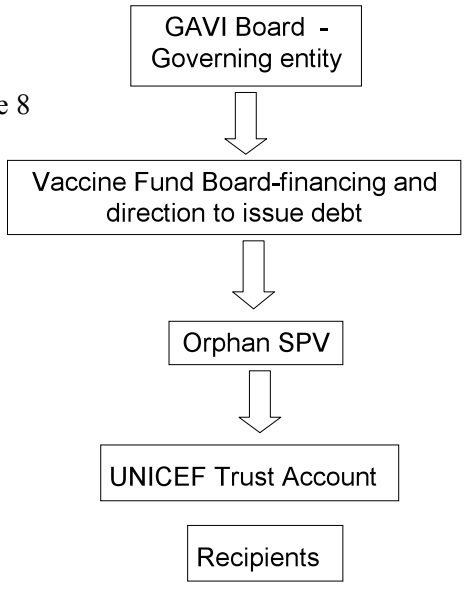
(i) World Bank as manager of the Special Purpose Vehicle (SPV): This could either take the form of the World Bank owning the SPV by taking the debt incurred directly on to its balance sheet or by the Bank providing services via a third party contract.

(ii) The Vaccine Fund as Manager of the SPV: In this option the SPV would be an "orphan vehicle" managed by the Vaccine Fund with the Treasury Management Services being provided by private sector third parties.

By 2005 Option (i) had become the preferred choice with a structure that involved the World Bank providing contracted services to an independent IFFIm which was designated as a multilateral development institution rather than an SPV.

The initial structure being proposed was as shown in figure 8.

Figure 8



Some consideration had been given to the World Bank taking more direct responsibility by taking the donor funds onto its own balance sheet and securitising them but the Bank was not willing to do so. An earlier Bank paper[27] raised concerns that it would be difficult to insulate shareholders against negative impacts such as increased funding costs given the market confusion and name dilution that could result. These comments were, however, related to the much larger IFF being planned at that time. The World Bank was also concerned about the effects on its own balance sheet and a possible requirement for recapitalisation. Most significantly, grantors did not regard this option as innovative nor could it have acted as a proof of the IFF

[27] Aid Effectiveness and Financing Modalities Sep 2004

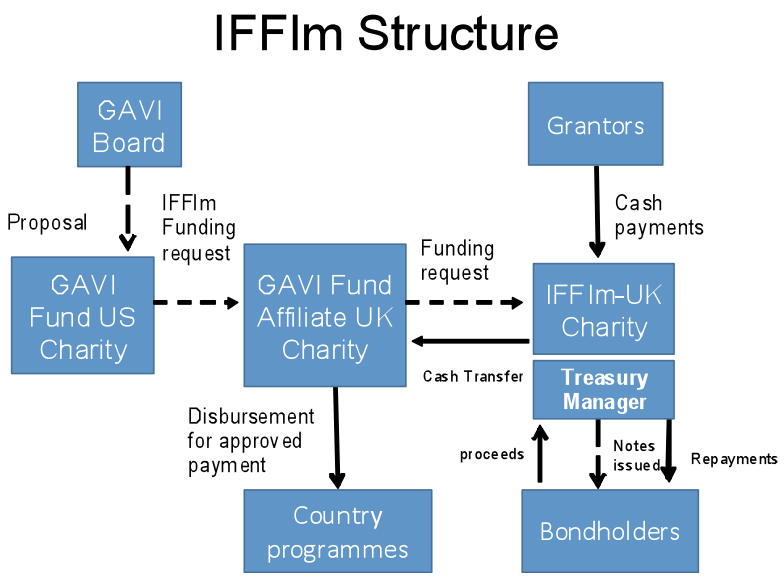
concept. Once the basic structure was in place and the Finance Framework document was being drawn up, further consideration was given to a range of possible legal forms and jurisdictions for the new entities of GFA and IFFIm.

1. The Governance Structure of IFFIm

The current structure is described in detail in **annex 4** which also explains how the original donor objectives and requirements determined the form that IFFIm eventually took. Figure 9 below shows the core relationships at the heart of the structure (for ease of exposition it does not include the deed of grants from donors).

There are four independent entities (the GAVI Fund (later novated to the GAVI Alliance), GFA, IFFIm and the World Bank) plus the various grantor Governments all operating within the Finance Framework Agreement to deliver additional immunisation funds to the GAVI Alliance.

Figure 9



The key decision process involves three stages: first GAVI uses established procedures to approve a country programme; second, the GFA reviews the request and makes a decision to allocate funds to the GAVI programme; third, IFFIm decides to raise funds through bond issuance on advice of the Treasury Manager.

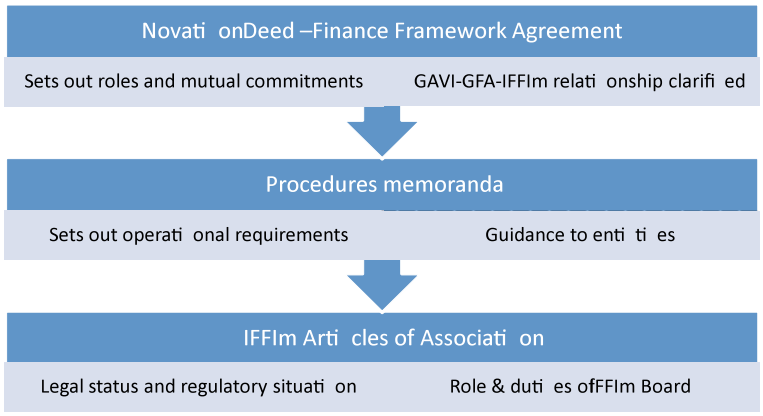
It is a significant achievement that the most of the tax, accounting, regulatory, credit, rating, legal and market requirements that were required could be built around these four entities and their relationship with the grantor donors.

1. Relevance and Effectiveness of the Structure

The Governance structure is a unique and bespoke design to meet the requirements established at the outset by the grantor nations. Interviews with donors confirmed that the founding documents were designed to avoid any direct donor involvement in day to day to management. The structure therefore ensured that the IFFIm Board had full authority to oversee the Treasury Management and Administrative functions that were to be delegated to the World Bank and GAVI. As **figure 10** shows, the Finance Framework Agreement sets out the roles, obligations, mutual commitments and relationships between the various parties. The procedures memorandum attached to this sets out the operational requirements and procedures to be followed including templates for the documentation underlying the business processes. IFFIm's Articles of Association set out the role and duties of the IFFIm Board under English law.

Figure 10

Governance framework



There are three issues we have considered in assessing its relevance and appropriateness:

55. Is the structure fit for its intended purpose?
56. Has it provided an effective legal and administrative framework for all parties?
57. Is it cost effective?

Our discussions with the parties involved in the FFA indicate that the framework has operated largely as intended. The Founding documentation has proven to be robust and has only been altered to "novate" the GAVI Alliance into the arrangements. To some extent this justifies the costs of preparation of the documents and the lengthy process of development and negotiation.

The founding documentation required some important amendments early in the drafting process. Prior to the World Bank's engagement as Treasury Manager, they advised in February 2006 that the draft Framework documentation needed to more strongly support

the claim that the IFFIm is a new variation on standard supranational entities. They effectively acted as an "honest broker" to the IFFIm working group in proposing changes designed to make IFFIm's credit and processes clear and simple for investors and to demonstrate the political commitment of the sovereign donors.[28]

The World Bank proposed changes to the payments structure and to the treatment of "Relevant Events". The effect of these proposals was material as without these changes the first bond issue would be backed only by a limited set of donor pledges (just enough to cover that bond). This crated the risk that donors would never add any additional pledges. The World Bank argued that investors would be unwilling to perform the necessary due diligence to invest in a new issuer if they felt that it might never issue more than one bond. As a result it was feared that IFFIm would have higher cost of funding similar to that of an SPV rather than a supranational body. "

The design of the structure has fulfilled expectations-- but this has come at a price. The development and finalisation of the structure, and the associated Founding documentation, was inevitably resource intensive due to the necessity of negotiating a legal framework acceptable to all the parties involved. However, it is difficult to see how this could have been avoided given the design parameters the technical team had to work with. Also it can be argued this was a necessary investment to attain a AAA rating which, once achieved, was responsible for a substantially lower cost of borrowing than would otherwise have been the case. The fact that the FFA has proven to be robust has averted some of the transaction costs which might otherwise have been expected of innovative arrangements such as this. There was also a substantial saving in start up costs due to the fact that organisations like Goldman Sachs were prepared to provide time on a pro bono basis.

It is possible that the design work could have been done at lower cost if less expensive legal advice had been sought. In reality, the innovative nature of the instrument required the best available advice and high advisory costs were unlikely to have been a major factor at the time. These trade-offs are more relevant now that experience with IFFIm has been built up and operations are running smoothly.

The up-front design work on IFFIm required resources from the UK Government, the World Bank, Goldman Sachs and the lawyers working for GAVI who took on much of the early drafting of the FFA and the associated legal advice. Our interviews suggest that the elapsed time involved for development was around two years in total. GAVI met the costs of drawing up the Founding documentation. GAVI legal advisers have estimated that their costs were just over £1m but there was an element that was uncharged (fees were charged at 75% of market rates). IFFIm's lawyers reviewed and negotiated the drafts prior to finalisation and GFA lawyers were also involved in the finalisation of the Framework Agreement. Goldman Sachs' time was not costed because it was provided pro bono and the cost of UK and World Bank officials' time was not recorded.

[28] Rationale for Proposed IBRD Revisions to IFFIm Documentation , World Bank Feb 2006

It has not been possible, therefore, to accurately assess the overall costs of the initial design work though they are likely to have been substantial.

The clarity of the Founding documents and the supporting procedures as well as the commitment of the IFFIm and GFA Boards has undoubtedly helped the various entities to make the arrangement work efficiently. However, several stakeholders perceive the structure to be complex and transaction intensive. The evaluation suggests that the structure looks more complex than it actually is but that there are indeed substantial transaction and operational costs associated with it. However, these are a necessary consequence of a Governance structure required to ensure that the multiple objectives of the grantor donors could be met.

An example is the requirement under the Framework Agreement for IFFIm to take an independent view on proposed funding programmes even though these have already been approved by the GAVI Board. It is also the case that the structure has imposed unavoidable operational costs associated with multiple sets of lawyers, accountants and auditors for all the entities involved. There are also costs associated with the financial support services provided by the GAVI Secretariat to GAVI, GFA and IFFIm, to prepare the accounts in the appropriate UK GAAP format and to integrate them into a single integrated presentation to GAVI. The ongoing resourcing of meetings (reportedly up to 45 meetings annually across the Governance structure as a whole) can be demanding for the Secretariat. The legal costs associated with the IFFIm Governance structure are shown in Table 2. This information has been sourced directly from the two law firms in the case of IFFIm and GFA and from the GAVI Secretariat in the case of the GAVI Alliance. All the costs are shown in US$ for ease of comparison and include actual costs charged. This information has been sourced directly from the two law firms in the case of IFFIm and GFA and from the GAVI Secretariat in the case of the GAVI Alliance. All the costs are shown in US$ for ease of comparison and include actual costs charged

Table 2: Cost of Legal Advice $m

	2004	2005	2006	2007	2008	2009	2010
IFFIm*			1.382	0.871	1.196	0.673	0.460
GFA*			1.218	0.837	0.633	0.484	0.484
GAVI	0.472	0.581	1.786	0.267	0.246	0.127	0.282
Total	0.472	0.581	4.386	1.975	2.075	1.284	1.226

*converted to US$ from sterling at average rates for the year in question using data from Federal Reserve Bank. Annual amounts based on figures submitted by the law firms.

There were some unforeseen problems around the approval procedures. Planned procedures and the flow of documents were found to be clumsy and transaction intensive. For example, the initial process for managing country specific programme liabilities meant that GAVI, GFA and IFFIm had to record and manage these individually. As GAVI adjusted budgets in line with IRC recommendations, it meant that GFA and IFFIm had to approve follow on amendments to relevant programmes. This meant a whole slew of

documents had to be re-signed by the entities involved when funds had to be reallocated. The process has now been streamlined to minimise the additional documentation.[29]

The costs involved in the governance structure are very small in relation to the funding raised by IFFIm. Board costs have been tightly controlled and are much reduced because the Chairs and Directors provide their services on a voluntary basis but travel and other support costs are necessarily incurred. The World Bank operates on a cost recovery basis and subsidises system development costs. The legal teams continue to charge at a significant discount to their commercial charge out rates. The GAVI Secretariat provides unpaid "in kind" support but the Board policy is to account fully for the "fair value" of these costs. As shown in table 3 the total running costs of IFFIm (including the Treasury Management Fee) has amounted to some $22.1m. This relates to less than 0.2% of the present value of donor pledges on an annual basis. In cumulative terms costs to the end of 2009 have accounted for 0.6% of the present value of donor pledges. More detailed information on governance costs is presented at **annex 5**.

Table 3: Operating Costs of the Governance Structure

$000	2006	2007	2008	2009	Total
IFFIm Board	1,595	2,160	2,786	2,985	9,526
GFA	1,707	1,398	1,288	1,279*	5,672
Treasury Management Fee	1,904	1,298	1,779	1,965	6,946
Total	5,206	4,856	5,853	6,229	22,144
% of PV of Pledges**	0.14	0.13	0.16	0.17	0.60
Costs as % of annual proceeds	0.52	..	2.63	0.57	0.95
Cost as % of Average Outstanding Debt	0.52	0.49	0.49	0.30	..

Source: GFA and IFFIm accounts 2006-2009

* excludes a $1.1m procurement fee for the purchase of meningitis and yellow fever vaccines paid by the GAVI Alliance to UNICEF which is included in GFA accounts as both income and expenditure

**$3,673m as at October 2009

Compared to the preliminary budget prepared in April 2006 (shown in the first two columns of table 4) it is clear that actual operating costs have turned out to be considerably higher both for the Treasury Manager and the legal adviser. This may reflect an initial expectation by the IFFIm Board that the World Bank would offer services at a reduced rate. The final contract also included a contribution by IFFIm to the development of new treasury systems that were required to meet IFFIm requirements. At the inception of IFFIm it was hoped that further IFFs would be created and so the World Bank heavily subsidised the cost of developing its systems (80% subsidy on treasury systems and 50% on trust account systems). It is beyond the scope of this evaluation to form an opinion on whether the development costs could or should have been lower. However, there was a

[29] See New Programme Liabilities Procedure GFA Board Meeting Feb 2010

clear need for some systems development work to handle IFFIm and at the time when the decision was made to invest in systems the clear expectation was that the cost would be spread over additional IFFs. In any case, since the World Bank is heavily subsidising the systems development costs, there is no incentive for these costs to be inflated. Underwriting charges were also much higher than expected – this is discussed in section 5

Table 4: Projected and Actual IFFIm Board Operational Costs $ m

	2006 Projected start up**	2006 Projected ongoing**	2006	2007	2008	2009
1. GAVI Admin *(estimate)			0.004	0.021	0.075	0.84
2. Treasury Managers Fees	1.1	1.2	1.9	1.3	1.78	1.97
3. Legal Advisers	1.6	0.2	1.12	0.97	1.38	0.88
4. Accountancy	1.2	0.5	0.29	0.37	0.35	0.33
5. Rating Agency	0.3	0.2				
6. Underwriting	1.2 ***	0.8	1.61	0.25	3.88	8.09
Annual total						

*provided by GAVI Secretariat
** source: Slaughter and May: IFFIm Board meeting preliminary budget documents 18 April 2006
*** assumed a first year issuance of US$ 500m and second year of US$ 550m

A recent French Government Audit of IFFIm[30] has highlighted the complexity of the governance structures and questioned the continued relevance of the GFA. This work has usefully highlighted the importance of considering options for streamlining the existing structure. There would seem to be a realistic prospect of dispensing with GFA and using the GAVI Alliance (which did not exist when IFFIm was first established) to receive donor pledges .and to disburse funds. The GAVI Alliance is already the disbursement agent for IFFIm funds. The GFA was originally required to create a GAVI counterpart for the donors. It was not possible to use the Vaccine Fund (latterly renamed the GAVI Fund) due to the public support test for US 501 (c) charities which limits the amount of foreign contributions that an entity can receive.

The GFA also had some perceived advantage to the donors in offering an independent entity to approve and monitor programmes. Views vary on whether this arrangement is still necessary. The majority view from our interviews was that the tax constraint may no longer hold and that changes in the status of the GAVI Alliance might allow GFA to be dispensed with and that the GAVI Alliance (previously the GAVI Fund) could now be used. We understand that this is under internal review. It would be desirable to streamline the Governance structure if the benefits from so doing outweighed the costs as it would then reduce the overall transaction and support costs involved. The annual savings need to be compared to the costs of changing the existing Foundation documents and disturbing existing well established procedures that could introduce uncertainty for investors. Not all of GFA costs would be removed as another entity would have to carry out some of the GFA's current duties. This would most likely be either GAVI itself or an expanded IFFIm. It will be important that the feasibility and legality of dispensing with GFA is fully examined before proceeding to adapt the structure. The evaluators understand that an assessment process is currently underway by the Secretariat. The governance structure is supported

[30] This document has not been seen by the evaluation team but the main points concerning IFFIm were discussed with French Government officials

by the GAVI Secretariat which provides an essential “glue” by helping to ensure that the GAVI Alliance Board is kept fully informed and can bring together a coherent picture of the pipeline of programme requirements, the grantor pledges made to IFFIm and the disbursements from IFFIm to GFA.

The structure requires that decisions and procedures by the various entities are coordinated and undertaken in a timely fashion. A lot of effort is required by the four organisations (GAVI-GFA-IFFIm and the World Bank) to ensure that there are adequate information flows across the structure. In the case of IFFIm there is a need to meet accountability and reporting requirements to the UK Charity Commission and the IFFIm donors and to keep GAVI informed of IFFIm’s revenue mobilisation efforts so that it can plan and implement its programmes effectively. There were initial problems in aligning reporting systems and accounting requirements between the Bank-IFFIm and the Secretariat but these have now been resolved. The IFFIm Board also took steps to refine the Annual Trustees reports to the Charity Commission.

The Secretariat provides a range of support services to IFFIm and GFA. Most importantly they assist IFFIm to transfer the financial reporting and accounting information provided by the Treasury Manager in the US GAAP format into UK GAAP to enable IFFIm to prepare financial accounts in the form required under English law. They also provide all the data on programme disbursements which feed into the results information that IFFIm provides to its donors and the general public.

1. Institutional Effectiveness

1. Legal Status and Accountability

IFFIm was created under English law as a charitable company with associated obligations and regulatory requirements as set out under the Companies Act 2006, Charities Act 1993 and the Trustee Act 2000. The Articles of Association of the Company set out the powers, duties and reporting obligations of members and Directors and the basis for conducting proceedings. The Directors are also Trustees of the Charity. The GAVI Alliance became the sole member of IFFIm charity in 2009 replacing the GAVI Fund.

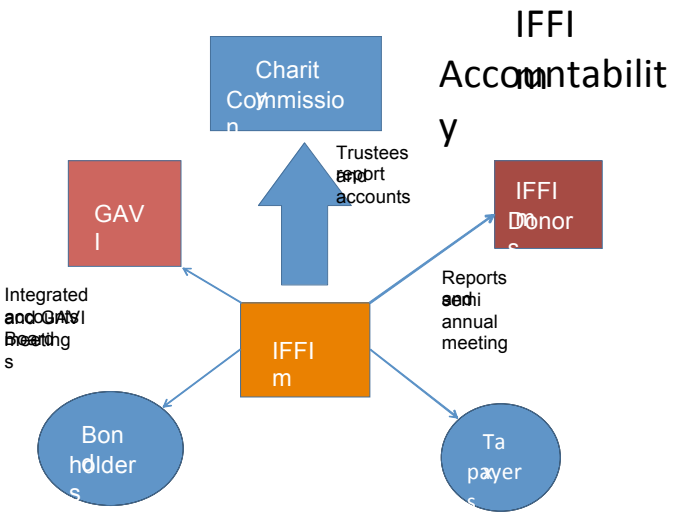
The Articles of Association are the third tier in the IFFIm Governance arrangements. They provide a conventional framework of accountability and these include a number of important checks and balances. For example, the articles set out the conditions under which Directors could be disqualified which would in practice arise if under section 72 of the Charities Act, a Director was deemed unfit by the Charities Commissioner. The Articles also contain a clearly stated policy on conflict of interest and Board members are required to absent themselves after declaring an interest.

It is theoretically also possible for GAVI as the sole member to call a Board meeting to address any issues of concern (including potentially the removal of Directors) and to seek a resolution for action on any relevant matter. In practice, GAVI plays a passive role as a sole member even though they have the same status as a shareholder would in a limited liability company.

The current accountability links for IFFIm are set out in the **figure 11** below which shows both the legal reporting obligations and the commitments to other stakeholders. IFFIm legal advisers emphasised the following accountability links:

58. Under Charity law the Trustees are answerable to the Charity Commission;
59. As Directors the IFFIm Board is accountable under Company law and answerable to the Department of Enterprise;
60. To bondholders for the terms and conditions of their bonds;
61. To the donors through the finance framework agreement (FFA).

Figure 11



Having charitable company status underlined that IFFIm had a strong regulatory and accountability framework. Charity law requires the preparation of an annual Trustees report and financial statements for the Charity Commissioners. Grantor donors require IFFIm to hold a bi annual meeting which provides a forum for feedback and review of IFFIm performance. This is not a policy or decision making structure. IFFIm provides reporting to the donor meeting on:

62. Capital market activity;
63. Pipeline of funding requirements from GAVI;
64. Any legal or governance issues such as expansion of the Board;
65. Communications and advocacy.

The donor meeting is held in parallel with a GAVI Board meeting wherever practical and all the donors we consulted were content with the feedback and discussion forum being provided.

Donor grantors also envisaged that the GAVI Board would provide some oversight and monitoring of GAVI performance. Donor participation in GAVI was seen as a key measure for addressing institutional, risk and accountability issues. It was also anticipated that an IFFIm donor representative would be an important component of the Governance

arrangements and that the GAVI Board as a whole take a view on the overall performance of IFFIm in terms of the costs of its financial operation and the efficiency of treasury management. General concerns would be raised by the IFFIm donor representative.

The GAVI Fund (later the GAVI Alliance after novation) was expected to produce standardised reports for IFFIm donors and non IFFIm donors that identified IFFIm and non IFFIm funds that had been allocated to programmes and the uses to which they both would be put. This would include a financial report with a supplement for IFFIm donors that would "examine the financials around the transaction (debt, bond/loan repayments, treasury management functions etc").

IFFIm has produced the annual Trustees report and financial statements as required under Charity law and a meeting has been held annually with Charity Commission officials. The IFFIm Board has been conscious of the complexity of the financial transactions they deal with, and of the need to make their reports and accounts as transparent and as easily understandable as possible. They have worked with the GAVI Secretariat to improve the format and to enhance the presentation of key data.

The evaluators assessed the accountability arrangements by examining the reports that were being produced by GAVI and IFFIm and discussing the accountability arrangements with the IFFIm Board, the donors and the Charity Commission.

This revealed that:

(i) the IFFIm Board has fulfilled its statutory duties under the Charities Act and has taken active steps to ensure that the reporting was aligned with the specific requirements of the Charity Commission. They have consulted the Charity Commission and had instructed the GAVI Secretariat to adapt and improve the reporting structure.

(ii) The Charity Commission were happy with the quality of reporting they received whilst acknowledging that the complexity of the financial transactions involved inevitably made the reports and financial statements less accessible to non finance/capital market specialists. This meant that, in practice, their regulatory role was difficult to fulfil but they quoted other similar organisations (Wellcome Trust) where they faced similar challenges.

(iii) The bi annual donor meetings were well regarded by participants and the quality of reporting was of a high standard. A useful purpose was served in communicating the overall performance of IFFIm. Nevertheless, the depth of dialogue with donors on financial and capital market policies and practice or on the effectiveness of the Treasury Manager was inevitably constrained by the largely development background of the donor representatives.

(iv) The GAVI Alliance Board does not perform an oversight role of the IFFIm Board. In practice, it has been very important to maintain the independence of the various entities to avoid any legal consequences such as GAVI Board members having liability for IFFIm decisions. A more relevant issue has been the quality of information shared by IFFIm with the GAVI Board. The IFFIm Board exchanges information and briefs senior GAVI Alliance executives regularly who in turn brief

GAVI Board members. The Chair of IFFIm has also attended GAVI Board meetings on an informal basis and in the first few years of its operation made presentations to the GAVI Board on capital markets and bond issuance. The quality of the information provided has been very high. However such reporting has not been institutionalised into a systematic reporting system with specific performance measures. Some (but not all) donor stakeholders would like to see these links made stronger including having a more formalised arrangement for feedback from IFFIm to the GAVI Board.

The intention should be to ensure the GAVI Board are kept abreast of IFFIm performance and resource mobilisation and that they can have a dialogue over key aspects of that performance. It would also assist GAVI Board members to have a more complete picture of future available funding and in particular to the expected tailing off of IFFIm flows unless new pledges are sustained. The general impression from interviews was that GAVI Board members had not fully grasped the importance of this.

The evaluators have also considered the possibility of the IFFIm Chair being represented on the GAVI Board. This would help to address these concerns but it would be important to consider the legal implications. The Alliance and IFFIm are considering identifying a cross member.

1. Functions and Organisational Structure of IFFIm

The Foundation documents define the functions, responsibilities, procedures and activities that IFFIm are expected to carry out as part of the legal agreement between the grantor Governments and the various entities. The FFA makes it clear that an active role is required from IFFIm and this was confirmed to the evaluators by the GAVI legal advisers. Amongst other things, IFFIm is required [31] to:

66. Consider a written request by the GFA to accept an assignment or transfer from the GFA in relation to the grant agreements of grantor states (see section 3 of the FFA);
67. Assess programmes for approval and, if approved, to fund them (see para. 3.5 FFA);
68. Inform the Treasury Manager of the potential timing of disbursements (see para. 5.2);
69. Approve programmes (IFFIm is under no obligation to approve the maximum amount permitted – see para. 5.10 of FFA);
70. Authorise the Treasury Manager to raise funds and enter derivatives transactions (See section 6.1);
71. Establish and maintain the IFFIm account with the Treasury Manager –para. 11.3.

The Treasury Management Agreement (TMA) with the World Bank sets out the basis for the services to be provided and the responsibilities of IFFIm. The Bank was to provide:

[31] See Deed of Novation, Amendment and Restatement

"services with respect to Grant payments, financial policy advice, funding transaction services, risk management services, investment management services, account administration services ...."

Whereas IFFIm would:

..."determine all matters of policy ....IFFIm... shall (i) approve the IFFIm strategies, including the IFFIm Funding Strategy, the IFFIm Risk Management Strategy and the IFFIm Investment Management and Liquidity Policy....(ii) approve the IFFIm Gearing Ratio Limit (iii) determine the aggregate levels of Approved Programmes.....approve any modifications to the obligations of the Grantors under Grant Agreements and ....determine what steps...to take in the event of any non compliance by a Grantor with its obligations under a Grant Agreement."

The Articles of Association of IFFIm Co set out the role of the IFFIm Board but does not provide any details on the business of the company. However, the terms of reference of the individual Directors[32] set out the role and function of IFFIm Co in more general terms:

-"to rapidly accelerate the availability of funds for immunisation"...

By

-" issuing bonds in the capital markets and so converting long term Government pledges into immediately available cash resources"

The role of the Board is also set out as:

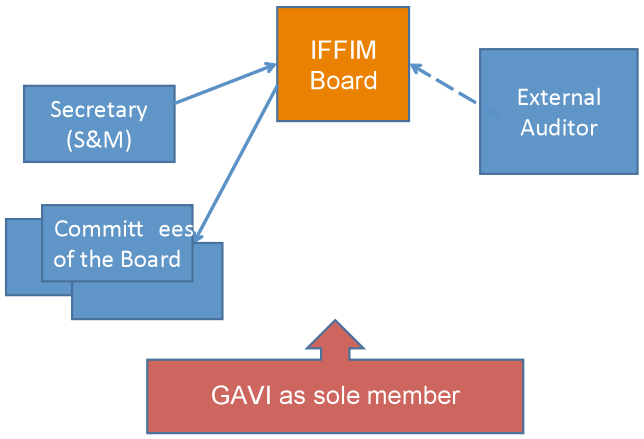
72. Reviewing GAVI immunisation programme funding requests;
73. Mandating the World Bank as Treasury Manager to arrange borrowing transactions to fund immunisation programmes;
74. Monitoring IFFIm's investment portfolio and liquidity;
75. Overseeing IFFIm's Governance and policies;
76. Assessing IFFIm's efficacy as an innovative financing mechanism supporting international development.

IFFIm has no shareholders and the GAVI Alliance is the sole member for the purposes of maintaining Charitable Company status. The sole membership has no operational significance. The Board of Directors does not have any staff of its own and is supported in its work through the contracted services provided by the legal advisers Slaughter and May, Deloitte's then KPMG as external auditor and by the World Bank under the TMA. The GAVI Secretariat provides accounting, communications and other support services through an Administrative Support Agreement (ASA). Committees of the Board are formed as required and the most important of these is the Audit Committee (see next section). **Figure 12** below illustrates the way IFFIm works as an organisation:

[32] IFFIm Board of Directors terms of reference Jan 2009

Figure 12

IFFIm Board - Corporate Governance



The evaluators reviewed the IFFIm Board minutes and it was clear that the Board has operated consistently within the parameters of the FFA and the procedures memorandum annexed to it. These documents include templates for various processes and have been refined over time to reflect operating experience. As with any new arrangement, there was also a need to deal with the practicalities of making it work effectively.

Feedback from interviews suggests that the level of input from the IFFIm Board may have been underestimated. One useful indicator of this is that the original job description for Directors set out in the Economist advert envisaged that only four IFFIm meetings would be required a year.

Our interviews and examination of the IFFIm Board meetings indicate that the level of input has, in fact, been considerably higher. According to the records seen, the IFFIm Board of Directors have convened 50 meetings (mostly telephonic) since 2006 and there have also been sub Committee meetings as follows:

Table 5: IFFIm Director Meetings

	2005	2006	2007	2008	2009	2010 (TO AUGUST ONLY)
Number of IFFIm Board meetings	1	14	9	11	10	5
Meetings of Committees of the Board		4	2	3	3	3

Interviews with the IFFIm Chair and the other Board Directors have confirmed that workloads for individuals were higher than anticipated. Given that the time of the Directors is all provided on a pro bono basis and that the role was part time and voluntary, this indicates the high level of personal commitment from Board members. Board members confirm their personal commitment is as much related to the developmental mission towards which IFFIm is contributing as well as to the interesting challenges that the role creates.

Feedback from donors and other stakeholders is positive about the role played by the Board and the level of professionalism and personal commitment shown. The Board is considered to be well led and the contribution to the successful establishment and operation of IFFIm is fully recognised. The evaluators also examined the minutes of the Board meetings which indicated:

77. Well organised and structured meetings with clear resolutions being reached;
78. Adherence to the FFA procedures;
79. Effective delegation to Sub Committees (once Board numbers permitted);
80. Observance of a conflict of interest rule where Directors declared an interest in a specific decision and played no part in the resolution reached.

The minutes also indicated the nature and range of the business areas and the decisions made by the Board. For example, since 2006 the Board has:

81. Overseen tendering exercises for support services and reviewed start up and operational expenses[33];
82. Challenged the World Bank about the level of their costs and, after due consideration, these were accepted by the Board [34];
83. Dealt speedily with requests for disbursement from GFA and revised procedures as needed;
84. Reviewed, discussed and then agreed financial, investment and risk management policies with the Bank as required in the TMA;
85. Provided direction to the Bank on individual bond issues and markets (e.g. the target maturity of bond issues);
86. Provided direction to the Bank on liquidity policy and the gearing ratio.
87. Examined options for higher investment returns;
88. Pushed for greater transparency on performance and spending including quantifying the impact of IFFIm spending separately. Monitored overall performance by assessing the Quarterly reports from the Bank.

The evaluators have carried out a detailed review of IFFIm financial, investment, risk management and liquidity policies agreed by the Board and executed by the World Bank (see **section 5**). It is clear from this work that the Board has thoroughly examined the options and influenced the development of financial policy including the push for longer

33 Meeting of nominated Directors 17 Feb 2006

34 Meeting of IFFIm Board Feb 2008

dated funding. It has also ensured the liquidity policy was implemented as and that an appropriate hedging policy was adopted.

The support shown by the Board to the global marketing of the aims of the GAVI Alliance and explaining the role of IFFIm was also considered a major contribution by those we consulted. Feedback from bondholders also suggests that it has been useful for the IFFIm Board to be involved in the road shows which accompanied some of the initial bond issues. This aspect of the role was not envisaged to be so demanding at the outset in the initial terms of reference for Board members.

The initial plan was to have six Directors with the Chair recruited and appointed by the GAVI Alliance and thereafter for the Chairman to lead the recruitment and selection process. It was anticipated, at the outset, that the Board would require a skill mix that included the health sector and systems; multilateral development institutions; capital markets; accounting/audit and legal capability.

The Articles require that the Board consist of a minimum of three members but is currently at its full complement of six. In practice, the level, content and frequency of Board meetings has confirmed that the size of the Board is about right. Any larger and the Board would become unwieldy and any smaller would make it difficult to achieve a quorum or to set up sub Committees. It will be important to try and maintain a Board which includes at least one member with direct knowledge of health systems in developing countries.

The current skill mix of the IFFIm Board is broadly consistent with the initial plans except that there is no longer a health specialist. It could also be argued that the complexity of the accounting and financial reporting requirements and the legal aspects of capital markets might require an even stronger representation of these skills on the Board. The skill mix could be reconsidered as current Board members come to the end of their tenure. Maintaining a Board of the current quality and capability will be an ongoing challenge for IFFIm especially if IFFIm moved into a maintenance phase when it focuses mainly on bond refinancing/repayments rather than new pledges and resource mobilisation for vaccination.

The IFFIm Board draws on the Articles as the basis for its operation but has no explicit corporate governance policies or procedures on replacement of Directors, conflict of interest and standards and has not yet drafted its own terms of reference. This is not regarded as a priority because the areas concerned are considered to be covered in the existing Founding documents, the Articles of Association and the terms of reference for Directors. With limited time and resources attention has been focussed on launching and operationalising IFFIm and ensuring its effectiveness. The evaluators do not demur from this judgement but nevertheless, good practice on Corporate Governance suggests that when time permits the Board should draw up the following:

89. Agreed terms of reference which are explicit about the role and responsibilities of IFFIm as an organisation including the policy and monitoring role in relation to the World Bank;
90. Ethical and professional standards expected by the organisation and to be observed by individual Directors;

91. Recruitment and appointment policy and up dated job descriptions with a more accurate reflection of the tasks and time involved;
92. Declaration of potential conflict of interest by Directors and related procedures.

Discussions with the IFFIm Chair and the GAVI Secretariat indicated that a process is already underway to recruit a replacement for the current Chair. GAVI have also instituted a performance assessment process which will help the Chair to systematically review Board and Directors performance to learn lessons for the future. It will be important to have the policies set out above in place when existing Board members are replaced to ensure that existing experience, good practice and lessons learned are fully institutionalised.

1. Policy and Strategy

The Treasury Management Agreement sets out the legal relationship between the IFFIm Board and the World Bank in relation to policy and Treasury Management functions. Under the TMA, the role of the IFFIm Board is to review, amend and approve policy and strategy proposals put forward by the Treasury Manager including the Funding strategy, Risk Management strategy and the Investment Management and Liquidity Policy. [35]

Discussions with the Board, examination of the IFFIm Board minutes and interviews with Bank and Secretariat staff, indicate that the IFFIm Board have fulfilled the requirements of the FFA and TMA by close scrutiny of policy submissions and by approving each bond issue. The policy making process has evolved into the World Bank preparing proposals (draft papers containing scenarios and options) for Board discussion and further development).

This approach has resulted in an effective policy debate and scrutiny of the Treasury Management functions by IFFIm. However, it has also meant that the World Bank have been providing more inputs for advice and information than was initially anticipated.

There are several explanatory factors. Firstly, there was limited experience as to how the policy process would work at the outset and the approach has been established over time and through experience. Secondly, the IFFIm Board requires to be fully informed before it makes decisions and on occasion this has meant a significant amount of background information being provided by the World Bank. A third explanatory factor has been a difference in view over the extent of delegation that should be made under the TMA.

IFFIm legal advisers told the evaluation team that the TMA provides the flexibility to allow delegation of bond issues but does not require such delegation. In their view, as a matter of contractual authority, the IFFIm Board can delegate decision making about individual funding transactions and bond issues but in practice it has chosen not to do so. The IFFIm Board has closely scrutinised and approved the terms of each bond issue but depending on the situation, it may well give more discretion in an actual execution to the Treasury

[35] Treasury Management Agreement Section 5.1, 5.4 and 5.5

Manager. Board minutes indicate that this was the case for the Uridashi recent issue. As a matter of course all proposals for future transactions get reviewed on a quarterly basis in the light of Treasury Management reports provided by the World Bank.

The World Bank view is that the TMA is not operating as initially envisaged in some respects. In their view whilst it is clear that the Board is responsible for setting policy the TMA also provides for the Bank annually to present the IFFIm Board with a strategy. If approved the World Bank has the authority to execute the strategy including all individual transactions. The Bank considers that the TMA does not provide the IFFIm Board any role in relation to individual transactions. Its expectation was that the Bank would do for IFFIm what it does for its own capital market operations - namely that the Bank's own board approves policies and monitors/oversees programs and transactions but does not engage in transaction details.

The finance, investment, liquidity and risk management policies adopted by IFFIm have been conservative and in line with donor expectations (see **section 5**). We also assess the policy framework to be in line with good practice of MDBs generally and within the operating principles and guidelines of the World Bank. This is consistent with donor expectations.

During the evaluation we consulted donors who confirmed that the governance structure had been established to minimise their engagement in policy. However they expected to be consulted if there was any *major* change in policy direction.

The evaluation has not found any such cases where this would be required. However, a recent transaction - a swap overlay - is an interesting example which raises the question as to when, or if, such consultations might be warranted. In this example the Board had asked for investment options for $1bn of liquidity to be held against the maturity of the inaugural bond. Two alternative scenarios to the status quo were put forward by the Board: the first was depositing the funds at commercial banks for 11 months; the second was using a swap overlay to convert the interest rate exposure on the funds from 3 month Libor to a fixed 11 month rate. The World Bank recommended the status quo but the Board chose option two. This was a departure from existing policy at the time and practice up to that point but was within the authority of the IFFIm Board (who have the authority to amend the investment policy). Although the World Bank's preferred option was not taken forward and it offered to present options under a modified investment strategy, because of the limited amount of risk involved and the fact that the transaction still fell within the World Bank's prudential guidelines it was willing to execute the transaction.

Whilst we do not believe the transaction in question to have been material in terms of IFFIm's overall finances this case does raise the question about when decisions on strategy or policy might trigger early, or even prior, consultation and what constitutes an acceptable level of risk. The swap overlay is discussed in more detail in **section 5**.

2. Management and Contracting of Support Services

The IFFIm Board has contracted services from the World Bank, the law firm Slaughter and May and the auditors Deloitte's (KPMG from 2008). A competitive tender was initially undertaken by GAVI for both legal and auditing services and was planned for Treasury Management as well. In the event, the first two were successfully completed and appointments made as planned. No other bidders came forward for the Treasury Management services. The European Investment Bank (EIB) had shown some interest but in the event they failed to submit a complete bid.

The FFA makes it clear that IFFIm is not to have any staff of its own and this reflected the desire of the grantor nations to create an innovative financing vehicle that conducted the securitisation through contracted services provided by a Treasury Manager. The grantors were prepared to consider alternative Treasury Managers and, in theory, these tasks could have been carried out by the EIB, the regional Development Banks (Asian or African Development Banks) or even commercial banks with sufficient standing. Other options could have been to unbundle the TM services and contract out some component e.g. investment management to an alternative provider. This remains an option but does have cost and management implications. According to the World Bank, under the FFA as it currently exists IFFIm cannot appoint a private sector entity to be Treasury Manager.

1. Treasury Management Services

In reality, the lack of bids meant that there was only one realistic option available for the Treasury Manager. The IFFIm Board did consider using the private sector but it is unlikely that IFFIm would have received MDB status without the Treasury Manager itself being an MDB, thus there would have been significant funding cost implications (indeed the consequences for IFFIm of having a commercial bank as TM during the financial crisis could have been disastrous). Any private sector option would also have included a profit element - rather than providing services at cost (with some elements highly subsidised) – and would therefore have been more costly.

The FFA has kept IFFIm "lean and mean" but this has also meant that the Board has been totally reliant on externally contracted services or those provided as a "donation" by GAVI. It has been argued that if GAVI were able to provide additional staffing resources in support of IFFIm, it could reduce the need for external advice and that this might be a cost effective option. However, the feasibility of setting up in house treasury management is doubtful and much of the legal and audit input needs to be independent. It has also been suggested that it would be more efficient to have GAVI staff dedicated to IFFIm work. However this would lead to a "balkanisation" process where GAVI staff were focussed on GFA or IFFIm or Alliance work and would reduce flexibility.

The relationship between the IFFIm Board and the Bank experienced some initial tension. The inability to conduct a competitive tendering process meant that the IFFIm Board were obliged to negotiate a contract directly with the Bank in which the Bank is reimbursed on a cost recovery basis (as agreed with its Board). The IFFIm Board queried the basis of the proposed cost of services and sought additional information including a more detailed breakdown. They also asked the Bank to consider offering a reduction of their normal charges which was contrary to the Bank's stated policy of charging cost recovery which is

explicitly referred to in the TMA. The Bank's Board requires the Bank to operate on a cost recovery basis and in the original RFP the Bank made clear the uncertainty around costs[36] One of the problems seems to have been the fact that in the early years Bank invoices were received with little or no prior warning that they would exceed the original estimates. The excess of actual expenses over that initially budgeted in the first few years is likely to have been caused by three factors:

93. the IFFIm Board took a considerably more proactive role in the determination of the funding strategy and required more advice and support than had been anticipated by the World Bank in their estimates;
94. GAVI was interposed between the World Bank and the IFFIm Board and became extensively involved in the bond marketing process and;
95. the World Bank was required to give substantially more accounting policy and technical advice to IFFIm than had been anticipated. The situation has now improved with quarterly estimates in advance and comparisons of actual invoice amounts to estimates.

Another significant area of contention in the World Bank's invoices is the system development and IT costs. The complex nature of IFFIm requires specialist systems to track and report the cash flows and transactions; no other international trust fund at the World Bank issues bonds, especially under two different sets of accounting rules.

The lack of any competitive tendering meant it was important for the Board to challenge the actual costs being incurred but there are several reasons why Bank costs are likely to have been acceptable to donors:

96. The World Bank is a non-profit organisation and only charges on the basis of cost recovery;
97. The World Bank has absorbed the majority of the systems development costs;

Based on our experience of capital market operations we consider it highly likely that outsourcing any of the Treasury Manager functions to the private sector would involve considerably greater cost e.g. the capital markets advisory function alone would probably cost more than the World Banks entire annual fee. At $2m per year the World Bank's fees are 5.2bp of the PV of donor pledges (as at September 2010) or 6.3bp of the $3.2bn in bonds raised to date. It should be noted that the TMA does not currently allow for a private sector entity to be appointed as Treasury Manager

The Board is very satisfied with the quality of advice received from the Treasury Manager and the execution of bond issues. There have been some ongoing relationship issues about the timeliness of policy advice but this is largely a reflection of the difference of

[36] " the innovative nature of the IFFIm makes it impossible at this early stage to estimate precisely the professional staff time required to deliver these services. Accordingly, our preference would be for the IFFIm Co. Board to work on the basis of the expected range of costs, but to be billed for start-up and the first year of regular implementation based on actual World Bank expenses, as reflected in our cost accounting system and subject to examination by IFFIm's external auditors."

approach between the World Bank and the IFFIm Board. The Board expected an immediate response to proposals in line with a comparable commercial service provider whereas the Bank has a number of competing priorities which has made this difficult to achieve.

The professional and business relationships between the IFFIm Board and the World Bank and the GAVI Secretariat have evolved over time. There have been differences of opinion and "creative tension" especially in the initial stages but these have been dealt with through debate and discussion in an active learning process. Examples of this include:

98. World Bank advice: Dialogue about market access for Uridashi bonds and the World Bank's own issuance led to an IFFIm bond programme in Australian $ and the issuance of longer dated maturity Uridashi bonds.
99. World Bank fees: The discussion of possible cost reductions and the World Bank position on cost recovery at the outset of the TMA. Oversight by the IFFIm Board has ensured greater awareness of the costs incurred.
100. Liquidity Management: IFFIm has always had a policy for short term liquidity but did not have a policy for longer term

The partnership between the IFFIm Board and the World Bank has evolved onto a firm footing and is effective. Better forecasting of costs, less ad hoc reporting and reliance on streamlined regular reporting and the provision of dedicated GAVI and World Bank staff to help service the relationship have improved matters considerably. Given that the current TMA expires in September 2011 and the continuing differences in view on how the TMA should be interpreted it would be valuable to review the experience to date and how the arrangements are working in practice in relation to the TMA.

Both IFFIm and the World Bank have shown flexibility in their working arrangements. There has been much greater capacity since the GAVI Secretariat and the World Bank have provided extra staff to service the relationship and established more direct communication channels. For example, the World Bank Treasury team now talk more regularly with the Board.

1. Legal Services

The relationships with IFFIm legal advisers and the auditors have generally been more straightforward. The IFFIm Board scrutinises the bills against initial budgets and the Chair maintains a personal control through signing off the payments. However, now that the arrangement for these support services have been operational for some years the Board could consider whether a re-tendering process is needed to ensure that value for money is being achieved.

The Board has retained the services of their legal advisers throughout the period. One of the stipulations of the World Bank taking the Treasury Manager role was that IFFIm use the same auditing firm as the World Bank in order to streamline the flow of information. This meant that initially Deloittes were appointed as the IFFIm auditor. In the second year of IFFIm's operation the World Bank changed their auditor to KPMG in pursuance of its mandatory auditor rotation policy. This resulted in IFFIm being obliged to change their auditor to KPMG as well.

2. GAVI Secretariat Support

IFFIm relies on the GAVI Secretariat for a range of support services including legal services, governance, banking arrangements and finance. Some support is also provided for communications including the IFFIm website. Initially this arrangement was informal but an Administrative Services Agreement (ASA) has been drawn up.

From 2009, the IFFIm accounts have included an estimate of the value of the services received from GAVI as "donated services". This is calculated on the basis of a comprehensive cost allocation model to calculate a single administrative support amount. The calculation is based on a percentage of the overhead costs of GAVI and the staffing involved and so should be a reasonable reflection of the monetary worth of these services. No payment is actually made to GAVI for these services.

The value of services provided by the Secretariat in earlier years, though substantial, was not fully costed. Initially, IFFIm included only a nominal sum for GAVI services in the annual accounts. For example, in 2008 IFFIm donated some services and billed for others. Only US$ 75,000 was recorded in the IFFIm accounts for that year. This was an inaccurate reflection of the actual costs involved (i.e. there was an unidentified subsidy being provided by GAVI). This anomaly was subsequently identified and corrected by the Board in 2009 to avoid understating the resources involved.

The ASA does not include any commitment by GAVI to provide a defined level of services nor are the inputs specified in any way either in terms of staff time or financial resources. In practice, the IFFIm Board approves an annual administration budget and, in theory, this has to be taken into account by GAVI Secretariat Heads of Department in their forward planning and commitment of staff time.

In practice, the GAVI Secretariat has many responsibilities and has to carry out a range of core functions for the Alliance. Recent audits and staff surveys[37] have indicated that staff are often stretched to provide all the services required. This could create problems for IFFIm and availability of sufficient support from finance staff has been an issue in the past. This is part of a wider GAVI issue – the Secretariat is generally recognised as being overstretched. Reimbursement of staff inputs would be only of limited assistance as there is little scope for increasing staff numbers to cope with additional workload given the strong wish to keep the organisation "lean and mean". This contrasts, for example, with the position of the World Bank where there is greater flexibility to take on more staff should the workload expand.

In general, IFFIm Board members are very positive about the support they receive from the GAVI Secretariat although there have been some minor concerns about the need for a more speedy response, for example, in relation to communications and publicity support. The IFFIm Board could consider moving to a more conventional service level agreement arrangement where they effectively agree a firm budget and deliverables with the GAVI

[37] Based on discussions with the Internal Audit Department GAVI Secretariat

Secretariat on an annual basis and pay for the services from IFFIm resources rather than retaining the existing donation arrangement.

2. Financial Reporting, Performance Management and Risk Management

1. Is financial reporting being carried out in an open and transparent way?

1. Accounting and Audit Arrangements

IFFIm has met its statutory requirements and produces a trustees report and financial statements as required to the standards and timeframe required by the Charity Commission. The complexity of the accounts necessarily makes them less accessible to non specialists but the Board has taken steps together with the GAVI and Bank accountancy staff to improve presentation and make them more intelligible wherever possible**. Annex 6** provides a more detailed analysis and only the main points are set out here.

All UK companies are required to prepare and submit annual financial statements compliant with UK GAAP. The World Bank as Treasury Manager is required to produce an annual reporting package for IFFIm however, since the World Bank operates on US GAAP, the reporting package supplied by the World Bank is prepared according to US GAAP and it must be translated to UK GAAP. The TMA explicitly references that the reporting package be prepared under US GAAP because these are the standards adopted adopted for the entire Bank reporting system. .

These procedures are cumbersome but are a result of a structure which involves entities that exist in different jurisdictions. IFFIm is bound by UK law to report in UKGAAP and produce an annual report in the form required by the Charity Commissioners. This meant that the World Bank and IFFIm had to find a way to align the accounting records as efficiently as possible.

Establishing these accounting arrangements required careful planning and additional resources to ensure that the records collected by the Bank were formatted in a way that could be easily transferred and understood by the GAVI Secretariat who had responsibility for the translation of the records into the UK GAAP format. These challenges were compounded by the limited staffing resources available to the Finance Division of the Secretariat. Staff turnover was also a problem.

In order to produce a comprehensive picture of the mobilisation of resources and their utilisation, the GAVI Secretariat produces an annual consolidated financial statement for the GAVI Alliance which incorporates the financial statements from GFA and IFFIm. The IFFIm Board signs off its own financial statements but this process adds an additional layer of accountability as the IFFIm financial statements are reviewed as part of the consolidated statement by the GAVI Audit Committee and the GAVI Board. The scope to further strengthen the links between the GAVI and IFFIm Audit Committees should be explored by both the IFFIm and GAVI Boards.

2. How effectively does IFFIm assess its performance?

When IFFIm was originally designed little attention was given to establishing performance benchmarks or indicators. There were implicit targets to "frontload" donor pledges by raising up to $4bn through bond issues and to do so at an acceptable cost to the donors. Performance was, therefore, to be largely measured by how much money was raised and disbursed and how much it cost to do so. In practice, a number of performance indicators have evolved over time and are set out in the Treasury Manager's Quarterly report. They appear to be widely accepted, are regularly reported on and are, in our view, sound measures. These include:

101. Borrowing costs (specifically the IFFIm borrowing cost in relation to the weighted average of the borrowing cost of IFFIm donors);
102. The cost of carry (the relationship between the interest IFFIm earns on its liquidity compared to the interest it pays on its borrowing) and, related to this, investment returns compared to suitable benchmarks and;
103. The costs of running IFFIm.

The IFFIm Board have encouraged the evolution of a more robust reporting framework and indicators to ensure they can monitor IFFIm performance more effectively and provide adequate feedback to the donor community at the bi annual IFFIm donor meeting. **Annex 6** sets out the reporting arrangements to donors in more detail. Our interviews suggested donors are broadly content with the level of information being provided and the opportunity to engage on IFFIm matters. At the same time, they recognise that there would be benefits from a deeper engagement on aspects of finance and investment policy and performance. This could be achieved by involving Treasury officials from grantor nations in a more systematic way.

Judged against best practice criteria (set out in **Annex 6**) the existing arrangements offer a reasonably good framework against which judgements about the performance of IFFIm can be readily made. Our interviews also suggested that the Quarterly report to donors and the annual IFFIm donor meetings cover the areas of performance that donors expect and no major concerns were raised during the evaluation. It would, nevertheless, be desirable for the donors to agree more explicitly than in the past, the targets and indicators against which they will collectively assess IFFIm performance and for the Board to consider whether they need to review the reporting from the Treasury Manager in the light of this.

The grantor nations, GAVI, IFFIm Board and the World Bank could also consider developing a single report that would bring together and link the costs of IFFIm (i.e. the inputs) to the funds raised (outputs) and to the additional immunisation spending and coverage achieved. The recent explanatory notes are an initial attempt to fill this gap but this could be developed further[38]. Providing a single report in one place on a website would assist feedback to the general public and would make it easier to provide an overall assessment of value for money by linking the costs of IFFIm to the benefits that were achieved.

[38] Explanatory Information Notes on IFFIm June 2010

The IFFIm Board and the TMA ensures accountability through regular scrutiny and reporting of performance and the costs of Treasury Management activities. This incentivises efficiency and improved performance. It may be possible to make these arrangements even tighter by further refining benchmarks or indicators for example, by adopting some specific target or benchmark relating IFFIm borrowing costs more directly to the cost of sovereign borrowing by grantor nations (one of the original objectives) .

Possible benchmarks could include:

104. Weighted average donor spread for borrowing costs +20bp;
105. Weighted average for France and UK +30bp;
106. Spread of World Bank +10bp.

Another possibility would be to adopt a positive carry benchmark for investment management.

1. Is the risk management strategy adequate?

The evaluators have reviewed the policy and practices available to IFFIm and the Bank and have concluded that the approach being taken is consistent with good international capital market practice

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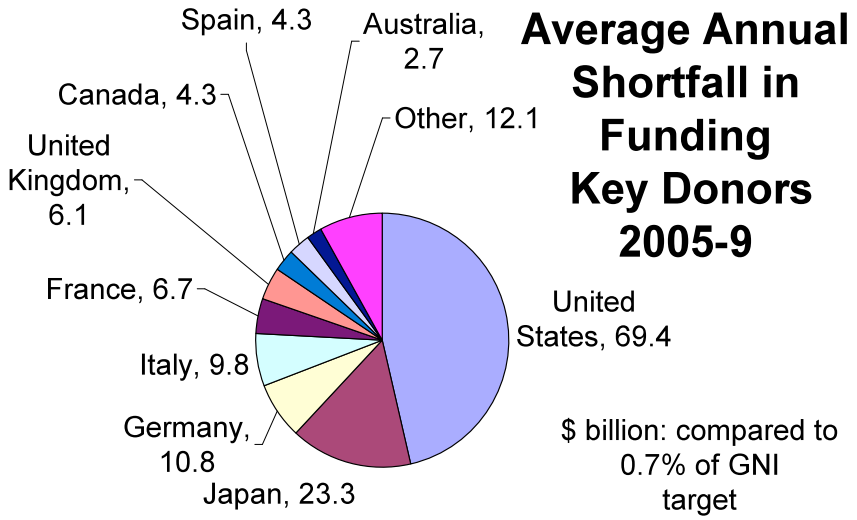
107. Analysis of IFFIm's Funding Arrangements

Before looking into the issue of how the IFFIm mechanism actually fared this section first considers whether other ways might have been found to secure funds with IFFIm's volume, frontloading and predictability features. Secondly, it looks at the issue of whether funding for IFFIm was actually additional or whether, in fact, IFFIm funds simply replaced donors' core funding for GAVI.

1. Could IFF/IFFIm-type funds have been raised by other means?

The IFF aimed to raise around $40bn per annum to accelerate progress towards the MDGs. Figure 13 shows that had donors met their commitments – dating back to the 1970s to devote 0.7% of their gross national income to development assistance - the IFF would not have been needed to raise the required funds.

Figure 13: Donor Performance against International Aid Commitments



Between 2005 and 2009 the aid disbursements of OECD countries fell around $150bn per annum short of their international commitments – nearly four times more than IFF was intended to deliver[39].

Almost 70% of this shortfall was accounted for by the US, Japan and Germany - none of which are IFFIm donors. Italy, France the UK and Australia were also failed to meet their

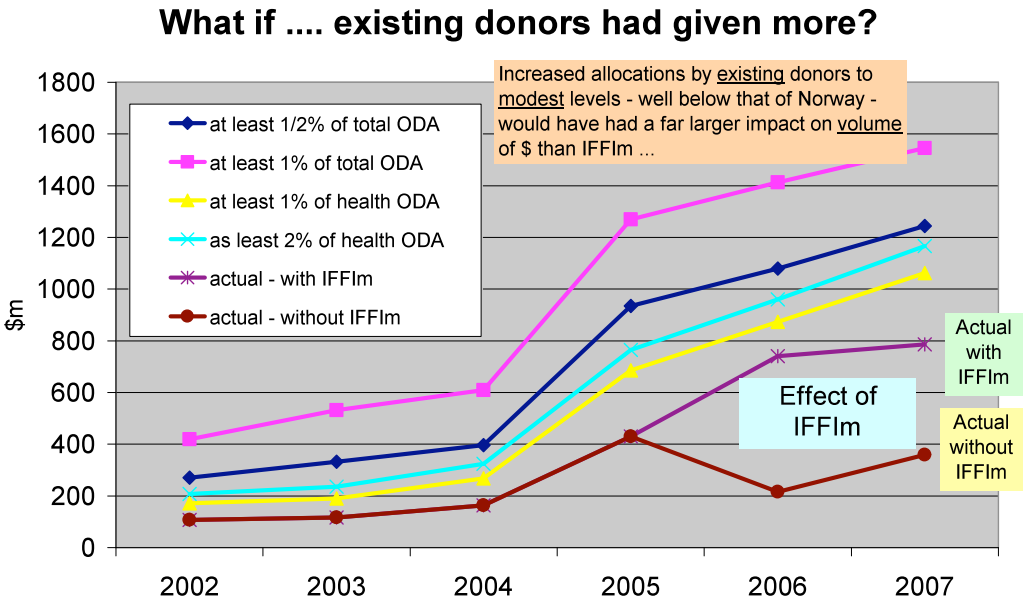
[39] Source: DAC Creditor Reporting System

commitments - unlike other IFFIm donors such as Sweden, Norway and the Netherlands who have constantly exceeded the 0.7% allocation.

A similar assessment can be made for GAVI. Could GAVI have secured similar amounts of funding through alternative routes? Though the view at the time was that donors would not be able to provide funds up front the evidence tends to dispute this. Figure 14 shows that existing donors (leaving aside donors not supporting GAVI) would only have had to reallocate a small proportion of their aid budgets towards GAVI to have more than secured the amount of funds delivered by IFFIm.

For example, if existing GAVI donors had allocated just 1% of their development assistance for health to GAVI this would have exceeded the revenue provided by IFFIm.

Figure 14: Assessment of whether GAVI could have attracted IFFIm-type resources from traditional sources



We would conclude, therefore, that had there been the same degree of political will to support development assistance, as a whole, and GAVI, in particular, as there was to support an IFF and pilot frontloading there would have been no need to have had the IFF in the first place. Furthermore, GAVI would not have had to take forward the IFFIm pilot to secure the resources it needed to expand its activities. (We do note that this ignores questions about the quality i.e. predictability of resources). On this basis we consider IFF and IFFIm to be, at best, a second best solution to the development financing problem – the key question for this evaluation is whether they represent an efficient second best solution.

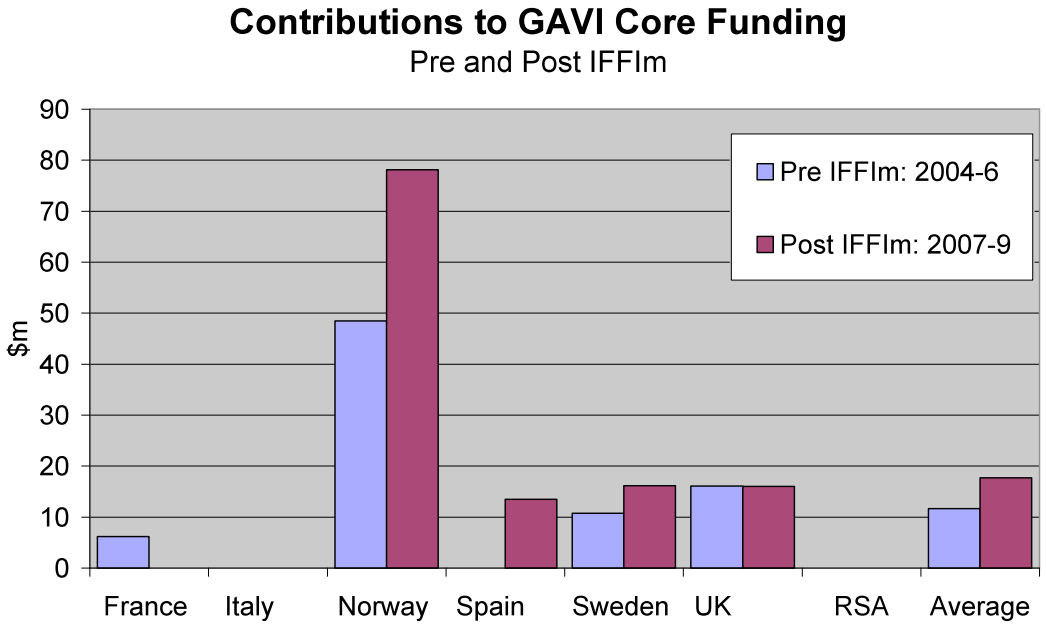
2. Was Funding for IFFIm Additional?

Additionality of donor support is an important, but not necessarily an essential condition, for IFFIm to be effective. (see **box 1**) .Our assessment is that support for IFFIm was almost totally additional to core funding for GAVI (i.e. it complemented core funding rather than substituted for it). We assessed this issue through interviews with donor representative and data on disbursements.

Box 1: "If donors' future repayments were deducted from future aid flows, the additionality of the IFFIm was nil, although the benefits of front-loading and predictability on immunization funding would still be realized" (p17 Case Study IFFIm – International Finance Facility for Immunization Oct 2008)

Figure 15 below shows that most IFFIm countries provided *more* core funding post IFFIm than they did pre IFFIm (France is an exception). Norway was the only donor where support for IFFIm was not additional as they fund IFFIm from an overall GAVI pot. We would conclude overall, therefore, that IFFIm support was almost totally additional for GAVI.

Figure 15: Assessment of IFFIm Additionality



Data on contributions by individual IFFIm donors - and an assessment of the additionality of their funding - is shown at **annex 7.**

3. To what extent has IFFIm provided frontloaded funding?

There are limits to the degree of frontloading offered by the IFFIm model. Some are inherent to the model itself – others are a matter of design choice. The degree of frontloading is dictated by:

108. The ability to raise funds up front on the capital markets,
109. The ability of GAVI to spend IFFIm resources rapidly and
110. The donor repayment profile.

The first is governed by the gearing ratio and the requirement by investors for IFFIm to retain a financial cushion to provide bondholders some reassurance that they will be repaid. The second is determined largely by donors and, in the case of IFFIm, has been enforced through annual ceilings included in the FFA. Frontloading is also constrained by the ability of the recipient institution – GAVI in this case – to absorb frontloaded funds. Finally, the profile of donor funding depends on negotiations between the donor and the GFA. As noted earlier some donors have back loaded their repayments. Discussions with GAVI senior management confirms that in the case of IFFIm the demand for funds has generally been the binding constraint not the ability of IFFIm to provide frontloaded funds.

Figure 16: Assessing the degree of frontloading provided by IFFIm

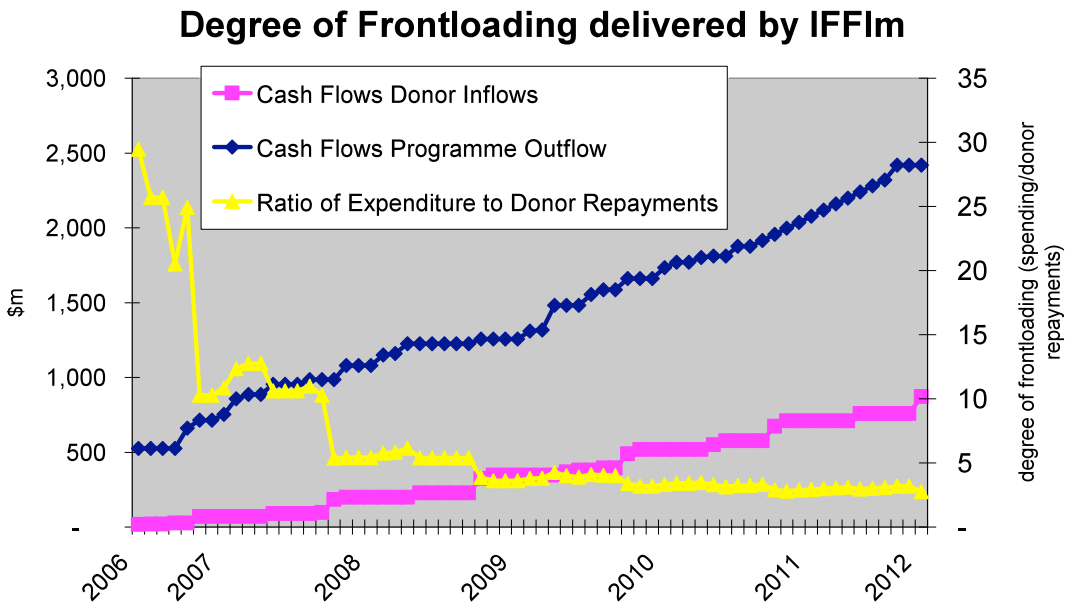


Figure 16 shows the relationship between programme disbursements and donor repayments. The current ratio is 3.3. This measure differs slightly from the leverage ratio traditionally used by IFFIm as it focuses on funds actually *spent* by GAVI rather than funds *raised* by IFFIm which we consider a more appropriate measure of actual frontloading.

1. Analysis of IFFIm Funding Strategy

1. Methodology and Data sources

The numerical data used in the analyses below is almost exclusively sourced from, or through, the World Bank. For the purposes of an accurate and reliable comparison of

funding spreads, it is necessary to select the appropriate bonds (most supranational issuers have several bonds for a given maturity horizon but some may not be liquid etc) and swap them into US dollars. Data providers such as Bloomberg cannot correctly identify benchmark bonds or reliably/accurately swap the spreads into US$ Libor.

Supranational investors do not, in general, trade their holdings but rather hold them to maturity. This means that most of the spread data is estimated based on indicative bids and offers from market makers. Equally, since the Uridashi market is a retail market, funding spreads are much less dynamic and hence there is much less granularity in this market. It is also worth noting that bond issues must be committed to well in advance of execution and so a comparison of spreads at execution is inherently slightly misleading (the fairer comparison would be spread at the time the bond issue was committed to, but this is impossible to measure). The funding spread comparisons are not presented as precise measurements but rather as 'realistic guides' to the relative levels.

The data provided by the World Bank has been thoroughly vetted and validated where possible (e.g. from press releases accompanying bond issues and alternative proxies such as swap spreads). Quotes from market participants largely originate from an anonymous questionnaire prepared by HLSP and submitted by the World Bank.

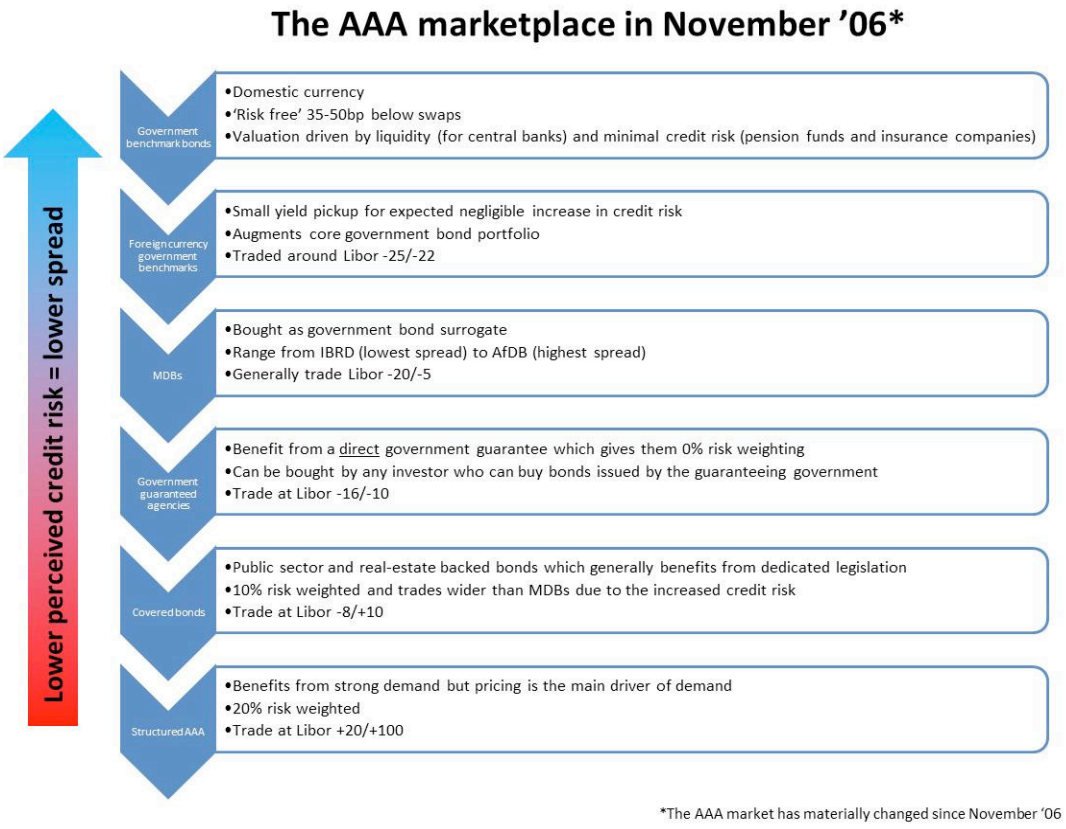
2. Background

In order to evaluate IFFIm's funding programme to date, it is important to understand the design process and how the expectations for IFFIm drove the structure and operating characteristics. A clear requirement of the donor governments was that IFFIm should be able to extract the full value of the highly rated donor pledges, i.e. IFFIm should be able to issue bonds at spreads not much wider than the donor governments themselves. This required IFFIm to be accepted as an investment alternative for the core investors in sovereign bonds, namely the central banks and sovereign wealth funds. AAA ratings are a necessary, but not sufficient, condition to be accepted as a Government surrogate issuer. During investor pre-soundings it was made clear that IFFIm would need to be accepted by the regulators (BIS and EC) as a multilateral development institution (supranational); the difference between trading as a supranational as opposed to a structured vehicle was 100bp or more[40] in 2006 (it would be even more now).

The AAA marketplace contains a wider range of spread levels than any other ratings class, from government benchmark securities at one end to structured AAA securitisations at the other. This is a result of the diversity of issuer types and the investor groups that buy them, the primary driver of which is regulation, reflected in the underlying risk weighting of the securities.

[40] Estimate from Goldman Sachs in their note entitled 'IFFIm Co.: Supranational or Structured SPV' 10 February 2006

Figure 17[41]: Borrowing Costs in AAA Markets

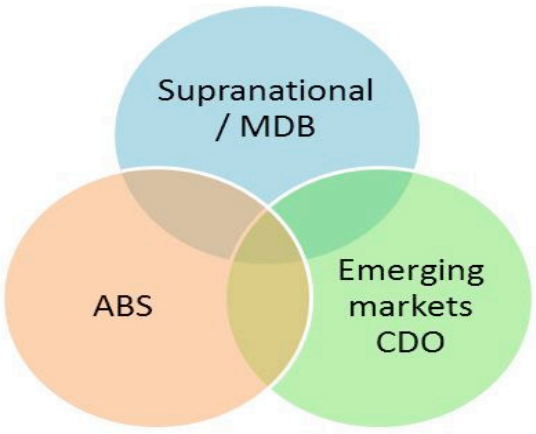


IFFIm did not fit entirely within any of the above issuer types; it was an entirely new structure with elements of three types of established securities:

Supranational / MDB: an institution, created by a group of sovereign states, with the common task of fostering economic and social progress in developing countries by financing projects, supporting investment and generating capital. MDB status is officially recognised for a small group of institutions by the EC. Common features of MDBs are sovereign ownership and control

What is IFFIm?

Figure 18



41 Spread data sourced from Goldman Sachs and the World Bank

(including the ability of the sovereign shareholders to suspend or wind up operations), a capital structure, statutory lending limits, AAA credit ratings, and 0% risk weighting.

IFFIm lacks several of the standard features of a supranational institution, such as paid-in capital structure and sovereign ownership and control, so it was very important that other elements of the IFFIm structure were as close as possible to supranational institutions.

Asset Backed Security (ABS): a security whose value and income payments are derived from and backed by a specified pool of underlying assets. The pool of assets is typically a group of small and illiquid assets that are unable to be sold individually. Pooling the assets allows them to be sold to general investors (a process called securitisation) and allows the risk of investing in the underlying assets to be diversified because each security will represent a fraction of the total value of the diverse pool of underlying assets.

It would have been easy for IFFIm to fall within the ABS segment of the market since the donor pledges could easily have been considered assets in isolation from the wider political commitment to IFFIm.

Emerging markets Collateralised Debt Obligation (CDO): structured ABS whose value and payments are derived from a portfolio of underlying debt assets. CDO securities are split into different risk classes, or tranches. Interest and principal payments are made in order of seniority, so that junior tranches offer higher coupon payments (and interest rates) or lower prices to compensate for additional default risk.

In simple terms, a CDO is a promise to pay cash flows to investors in a prescribed sequence, based on how much cash flow the CDO collects from the pool of bonds or other assets it owns. If cash collected by the CDO is insufficient to pay all of its investors, those in the lower layers (tranches) suffer losses first.

Ignoring donor credit risk, IFFIm is essentially a CDO on the recipient country pool with respect to their standing with the IMF. There are some small differences such as the fact that some recipient countries do not have any debt with the IMF but in principle, IFFIm (and hence bond investors) only get paid to the extent that recipient countries honour their debt to the IMF.

The major challenge for the World Bank and the bond underwriters was to successfully argue that IFFIm was the latest variation on supranational financing rather than either a structured ABS or an emerging markets CDO. The conditionality required to obtain ‘off balance sheet’ accounting treatment and the need for donor countries to retain an element of control over the use of proceeds presented conflicts with the goal of achieving supranational status. There were several important steps (in chronological order, there is possible dependence between earlier and later steps) on the road to achieving supranational status for IFFIm:

111. The World Bank proposed several changes to the payment structure of donor pledges and Relevant Events (see sections 1.3.7 and 4.2.1);
112. IFFIm was awarded Multilateral Development Bank status under EU legislation (allows a 0% risk weighting for investors regulated by EU rules);

113. The World Bank was contracted as IFFIm's Treasury Manager which conveyed credibility and positioned IFFIm close to the World Bank Group;
114. AAA ratings awarded by all three major rating agencies;
115. IFFIm classified as 0% risk weighted according to the Basel Committee on Banking Supervision (also linked to the World Bank acting as Treasury Manager).

1. Objectives of the funding programme

IFFIm's financial policies and strategies set out the following objectives, in order of priority, for the funding programme:

1. minimise long-term funding cost
2. ensure stable market access
3. raise public awareness
4. other objectives e.g. issue bonds into the capital markets of donor countries

The first two objectives can be considered 'must have' whereas the second two are 'nice to have'. The following tables summarise which objectives each bond issue addressed:

Figure 19: Key Objectives of Individual Issues

	$1bn inaugural bond	Mar '08 Uridashi	Feb '09 Uridashi	May '09 Uridashi	May '09 UK ISA / Institutional	Jun '09 Uridashi
'Entry Fee'						
- Spread paid	✗	✗	✗	✗	✗	✗
- Marketing effort	✓	✓	✓	✗	✓	✗
Lowest absolute cost	✓	✓	✓	✓	✗	✓
Lowest cost within the chosen market	✓	✓	✓	✓	✓	✓
Diversity of funding markets	✓	✓	✗	✗	✓	✗
Political / other	✗	✗	✗	✗	✓	✗

	Mar '10 Uridashi	Jun '10 Uridashi	Private placement	A$400m Kangaroo bond
'Entry Fee'				
- Spread paid	✗	✗	✗	✗
- Marketing effort	✗	✗	✗	✓
Lowest absolute cost	✓	✓	✗	✗
Lowest cost within the chosen market	✓	✓	✓	✓
Diversity of funding	✗	✗	✓	✓
Political / other	✗	✗	✗	✓

Source: HLSP based on discussions with World Bank.
Note: a green tick reflects the fact that this was an objective for the particular issue. A red tick reflects the fact that certain objectives were not targeted for a particular issue. This table does not attempt to assess performance against the objectives (this is done elsewhere).Rather it attempts to illustrate the fact that different issues had different objectives

5. The 'Entry Fee' refers to any new issuer premium element in the funding spread and the fixed cost of marketing IFFIm's credit to new investors; the same marketing effort is required for $300m as for $3bn;

6. Were IFFIm to be focussed solely on minimising funding cost, it would use the Uridashi market exclusively but since Uridashi is a retail market it cannot be considered reliable enough;

7. Without a benchmark reference bond it is unlikely that IFFIm could have entered the Uridashi market and so the inaugural bond was the lowest funding cost available at the time;

8. Although spreads in non-Uridashi markets are higher, IFFIm has sought the next most attractive alternative in order to reduce its dependency on the Uridashi market.

Each choice of market and timing for bond issues undertaken by IFFIm had clear objectives; the inaugural bond was needed to set a reference point without which other bonds issues may not have been as successful and the use of the Uridashi market was maximised within prudent limits. Other non-Uridashi bond issues were undertaken in the next most attractive venue and were priced competitively within those markets.

Overall, our conclusion is that the lowest cost funding was pursued, and achieved, until diversity of funding became a more important objective. Other objectives were met as a secondary consideration.

Figure 20: Overview of IFFIm Issues

Description	Date	Size (US$m)	Tenor (yrs)	Coupon (%)	spread to 3m L (bp)	US swap spread (bp)*	Underwriter
Inaugural bond	Nov '06	1,000	5	5.00	-11.75	-45.20	GS/ DB
Uridashi 1	Mar '08	223	2	9.90	-40.25	-75.80	Daiwa
Uridashi 2	Feb '09	29	3	2.60	-35.50	-60.00	Daiwa
	Feb '09	91	3	2.65	-35.50	-60.00	Daiwa
	Feb '09	310	3	6.26	-35.50	-60.00	Daiwa
UK ISA / Institutional	May '09	24	5	0.00	32.50	-45.75	HSBC
	May '09	376	5	3.38	86.00	-45.75	HSBC
Uridashi 3	May '09	105	3	1.00	-27.50	-51.81	Mitsubishi
Uridashi 4	Jun '09	38	3	3.51	-26.50	-50.00	Mitsubishi
	Jun '09	29	4	6.85	-28.20	-53.13	HSBC
	Jun '09	57	4	4.36	-29.00	-53.13	HSBC
	Jun '09	45	15	0.50	2.00	-32.06	HSBC
Uridashi 5	Mar '10	321	3	7.15	-34.75	-18.50	Daiwa
Uridashi 6	Jun '10	56	4	8.30	-26.70	-30.88	HSBC
	Jun '10	15	4	4.77	-26.70	-30.90	HSBC
	Jun '10	30	10	0.50	-8.00	-5.50	HSBC
Private Placement	Oct '10	34	5	5.50	-1.50	-25.25	TD Securities
Kangaroo Bond	Nov '10	395	5	5.75	-1.50	-23.69	CBA / RBC

* the spread to Libor at which US government bonds trade

Total issuance ($m)	3,175
Weighted avg maturity (yrs)	4.4
Weighted avg spread to 3m Libor (bp)	-7.2

Source: HLSP based on inputs from World Bank and GAVI

A detailed analysis of the individual bond issues and their relationship to the funding objectives is at **annex 8**.

1. Measuring IFFIm's cost of funds against expectations

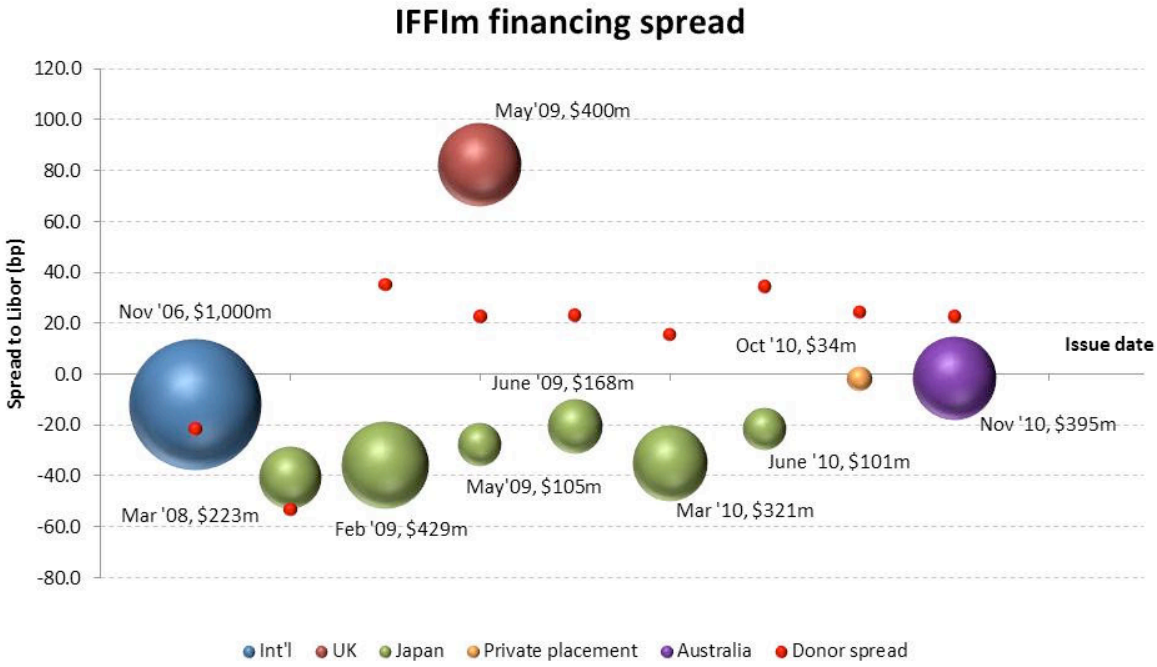
Although it was a clear design phase expectation that IFFIm would issue bonds at spreads not much wider than the donors themselves, as noted earlier, there were very few explicit performance targets. The UK's Department for International Development (DFID), in its original project documentation based its estimates on a base case assumption of IFFIm achieving 35bps above UK government bonds. Other documentation refers to base case assumptions of Libor and Libor +10. DFID was quite prepared to pay a premium – "take a hit" in the words of one interviewee – to raise funds through the IFFIm *route if the returns justified* it. Performance against the DFID indicators is set out in **annex 9**.

In practice, the Board has adopted a benchmark of the weighted average of the borrowing costs of IFFIm donors and this seems to have been broadly accepted by donors.

Outperformance by IFFIm against original expectations has led to increasing expectations which now incorporate many positives (the Uridashi market and the World Bank 'halo') which would not have been forecast at inception.

As an overall view, the chart below illustrates the pricing[42] IFFIm achieved compared to the weighted average spread of the donors (the size of the bubble represents the amount raised through each bond).

Figure 21: IFFIm Performance in relation to IFFIm donor borrowing costs



In most cases IFFIm has priced inside the weighted average donor spread[43] and on average has achieved pricing 12.4bp lower. IFFIm has priced below the average donor spread for all issues for seven out of ten bond issues.

[42] Figures refer to all in costs

[43] In order to be consistent in comparing IFFIm's spreads to the donors, in most cases local currency sovereign debt spreads have been swapped into US$ Libor (US$ benchmarks are rare for European issuers) to normalise for yield curve differentials. The US$ spread to Libor may not always be close to the local currency swap spread (margin below domestic Libor at which the government can borrow) e.g. in March '08 the UK's US$ swapped spread was L-77 but the local currency swap spread was L-110. If donors compare IFFIm's cost of borrowing to their local currency swap spread they will get a different result.

2. Measuring IFFIm's cost of funds against other alternatives

Quantifying the difference between IFFIm's actual funding programme and the next best alternative inevitably involves a certain amount of guesswork but an estimate is possible using a few simplifying assumptions:

9. IFFIm used the Uridashi market to the maximum extent that was prudent so where IFFIm has not used the Uridashi market, diversity of funding was the overriding priority i.e. Uridashi was not an alternative;
10. The US$ benchmark market always offers the next best funding level;
11. IFFIm is able to get the benefit of benchmark funding spreads despite its limitation on issue size (the benchmark market requires a minimum $1bn issue size).

Figure 22 below shows US$ savings compared to various alternatives over the life of each bond issue (e.g. $2m spread saving on a 3yr bond = $6m saving) and provides an indication of the value added by IFFIm's funding programme. The column on the right presents the cumulative total. It shows, for example, that over the life of IFFIm to date the cost of raising funds has been some $13.1m less than that of the weighted donor basket but around $10.6m more than it would have cost the UK to raise the funds. It has cost over $37.3m less than the original DFID expectation of raising funds at UK government bonds +35bp. Shaded cells reflect cases where IFFIm was more expensive than the comparator.

Figure 22: Estimates of Cost Savings due to IFFIm Financial Efficiency in relation to comparators

Cumulative US$ cost differential vs selected comparables

IFFIm funding (US$m) vs	Nov '06	Mar '08	Feb '09	May '09	May '09	Jun '09	Jun '09	Jun '09	Mar '10	Jun '10	Jun '10	Oct '10	Nov '10	Total ($m)
Size (US$m)	1,000	223	429	400	105	38	85	45	321	71	30	34	395	
Tenor (yrs)	5	2	3	5	3	3	4	15	3	4	10	5	5	
Donors	4.8	0.6	-9.1	11.3	-1.8	-0.5	-1.4	-3.3	-4.9	-1.5	-2.0	-0.4	-4.8	-13.1
UK	6.1	1.6	-6.9	18.9	-1.5	-0.4	-0.3	-1.9	-4.7	-0.7	-1.4	-0.1	1.8	10.6
IBRD	4.1	0.0	0.1	1.2	0.0	0.0	0.0	1.1	0.0	0.0	0.3	0.1	1.2	8.2
EIB	3.1	-0.2	-4.6	0.3	-0.9	-0.3	-1.0	-1.9	-1.9	-0.4	-0.4	-0.3	-3.0	-11.3
KfW	2.1	-0.2	-4.6	-1.3	-0.9	-0.3	-1.0	-1.9	-1.9	-0.4	-0.4	-0.2	-2.2	-13.1
AfDB	-3.4	-0.2	-4.6	-2.2	-0.9	-0.3	-1.0	-1.9	-1.9	-0.4	-0.4	0.0	-0.3	-17.5
US$ benchmark*	NA	-1.3	-11.0	4.2	-2.0	-0.6	-2.2	-7.6	-3.9	-1.1	-1.2	-0.1	-1.3	-28.3
vs UK+35bp	-11.4	0.1	-11.4	12.4	-2.6	-0.8	-1.5	-4.2	-8.1	-1.7	-2.5	-0.7	-5.1	-37.3
vs L+10bp	-10.9	-2.2	-5.9	13.4	-1.2	-0.4	-1.3	-0.5	-4.3	-1.0	-0.5	-0.2	-2.3	-17.4
v Libor flat	-5.9	-1.8	-4.6	15.2	-0.9	-0.3	-1.0	0.1	-3.3	-0.8	-0.2	0.0	-0.3	-3.7

* World Bank estimate of spread IFFIm could have achieved in the US$ benchmark market (min $1bn issue)

Taking the Uridashi market in isolation, the figure below quantifies the 'IFFIm value added' including carry gains:

Figure 23: Estimate of Value Added through access to Uridashi Markets and Liquidity Policies

Annual IFFIm 'value' (US$m)					
	2006	**2007**	**2008**	**2009**	**2010**
Uridashi spread			0.67	6.26	7.29
Return on liquidity	0.11	0.01	-0.18	6.39	1.32
Total	0.11	0.01	0.49	12.65	8.61

Annual Average (inception to Q4 2010) = $4.37m)

The value for the "Uridashi spread" is calculated by comparing the spread IFFIm actually achieved in the Uridashi market to the spread (as estimated by the World Bank) that IFFIm would have had to pay in the US$ benchmark market had this option been available. The "return on liquidity" reflects IFFIm's positive carry. Together they provide an indication of the value added by the Treasury Manager in terms of gaining access to the Uridashi market and market timing and its liquidity management. Basically, it shows that the value added exceeds total Treasury Manager costs – which amounted to just under $7m at the end of 2009.

Overall, the savings associated with IFFIm financial efficiency outlined above significantly offset the IFFIm governance and Treasury Management costs – estimated at $23.2m to the end of 2009.

1. Is IFFIm the right size from a funding perspective?

The deepest, most liquid market for supranational bonds is the US$ benchmark market but the minimum size requirement for a benchmark issue is ~$1bn and in order to attract investors' attention, regular (annual) issuance is required. Generally, outside the Uridashi market, the US$ benchmark market offers the lowest funding spreads.

During the design phase it was hoped (scenarios of $4bn, $6bn and $8bn were prepared) that IFFIm would have assets of $8bn. In practice, IFFIm has had a little under $4bn of assets and is constrained in the amount it could borrow by the Gearing Ratio Limit and political sensitivity to excess liquidity. The World Bank created a bespoke 'scaled down' funding model for IFFIm in response to the smaller size but arguably IFFIm is on the edge of 'critical mass' for the following reasons:

12. in order to maintain diversity of funding sources, IFFIm needs to be able to offer sufficient issuance volume to interest investors in multiple markets;
13. the cost of maintaining IFFIm's profile with investors is relatively fixed so a smaller funding programme is proportionally more expensive;
14. professional fees (lawyers, accountants etc) are relatively fixed, so smaller transactions are relatively more expensive;
15. at its current size, IFFIm needs a bespoke funding programme but if it were bigger it could more easily be managed within the standard profile of a supranational.

In order to be able to fit within a standard supranational issuance profile, IFFIm would need to issue at least $1bn annually in the benchmark markets as well as smaller niche offerings. Assuming IFFIm chose to issue bonds with an average maturity of 5 years, IFFIm would need to have leverageable assets of close to $6bn i.e. gross donor commitments of ~$10bn.

Essentially, IFFIm has paid the upfront costs of gaining access to important funding markets but has been unable to fully utilise those markets because it does not have a sufficiently large funding programme. IFFIm could be scaled up significantly in size without paying much more in marketing costs and still be able to access spreads which are attractive. Diversification of funding sources would also be easier because IFFIm would not be constrained by the minimum size requirements of the benchmark market.

1. Is IFFIm scaleable?

In the words of one interviewee, when asked how deep/liquid the supranational market is, “it’s as deep as the ocean”. Once IFFIm gained access to the supranational investor base, were it not for other constraints, it could have borrowed up to the GRL within the first year. In fact, even if IFFIm were ten or more times its current size, it could still borrow up to the GRL in the first year or two. In practice, IFFIm had disbursed $1.9bn to December 2010 against receiving $575m in donor grants.

The current limits on borrowing grew out of donor governments wishing to ‘keep the brakes on’ to establish whether IFFIm works. Should a greater degree of frontloading be needed in future, the model is fully scaleable. It could also allow more frontloading through the removal of any donor restrictions on speed of spend. In terms of being able to deliver more front-loading than has been required to date, IFFIm is certainly overpowered. GAVI has, to date, been demand constrained rather than cash constrained[44] – IFFIm has been able to meet requests from GAVI in a timely and adequate manner.

2. What impact has IFFIm’s mission had on funding spreads?

We consider it unlikely that IFFIm’s mission has had a material impact on its funding spread but rather that IFFIm’s mission has raised its profile with investors and that has improved both the quantity (IFFIm might ordinarily have been too small for some investors) and quality of demand. The following is a selection of feedback received from various bond underwriters[45]:

"….. IFFIm’s mission has been very important to the marketing of the transactions that we have lead managed. Investors have been keen to participate in such transactions knowing

[44] To note GAVI’s medium term resource requirements suggest that funding rather than country demand will begin to pose the greater constraint

[45] All quotes from the Uridashi market survey written by the evaluators and undertaken by the World Bank which informed these conclusions

children …. would be vaccinated and potentially saved from lethal diseases using the proceeds of the bond"

"the mission is a key selling point for many investors who relish the opportunity to gain exposure to project with unambiguous social benefits. The mission was highlighted during the marketing process for the bond and was a clear way of differentiating the issue in what is otherwise a crowded market"

"….one of the most appealing aspects about IFFIm is its very specific scope it has in providing funding for the vaccination of children in the third world, the results of which are very quantifiable in terms of lives saved."

3. Has IFFIm's marketing work resulted in any additional giving to GAVI?

The only tangible examples of additional giving were a ¥10m ($95k) donation to GAVI at the time of the first 'vaccine bond' in 2008 and a small donation associated with the Australian issue. GAVI has also been put forward as a potential beneficiary to one bond underwriter's management for their charity contributions.

4. Comparison of IFFIm Model to "Theoretical" Alternatives

As suggested earlier - in section 2 - there was no viable alternative to IFFIm identified at the time it was set up. We present a number of theoretical options, here, for illustrative purposes as they may have been viable had the political and economic climate been different. It should be noted that none of those suggested will necessarily cover the range of benefits delivered by IFFIm.

Firstly, had donors met their international obligations they could have provided sufficient resources to fund the full IFF a number of times over, let alone IFFIm. If one considers that the donors would have raised the money through borrowing they could probably have done so at lower cost than IFFIm – particularly the US and Germany – Japan perhaps less so due to its credit status. Donating funds to directly to GAVI would avoid any IFFIm governance costs (but lose the Board's challenge function) but would not provide any degree of predictability.

Secondly, had the World Bank been willing to securitise donor pledges (which it wasn't at the time) it would have been possible to raise frontloaded funds at slightly lower borrowing cost and lower governance costs than IFFIm was able to**. Section 5** shows that – to date – it has cost IFFIm around $8m more to raise funds than it might have cost the World Bank. There would have been further costs savings in terms of the governance as the GFA and IFFIm Boards which would no longer have been required. Although Treasury Management costs would continue savings would have been of the order of $4.1m per annum (based on average GFA and IFFIm Board costs of $1.7m and $2.4m respectively between 2006 and 2009). This approach would lose any value added by the GFA and IFFIm Board's challenge function.

Thirdly, if a AAA donor had borrowed the money itself and donated $3.9bn to IFFIm the borrowing costs would have been lower[46]. There would have been no governance or treasury management costs thus saving a further $5.6m per annum. Against these savings totalling up to $38m to date and maybe $150-170m over the life of IFFIm, this approach would not have provided IFFIm-quality predictability. This possibility was not considered at the time.

In summary, other alternatives could theoretically have delivered many of IFFIm's outputs at a somewhat lower cost. However, IFFIm was established precisely because these were not seen as viable alternatives.

2. Review of IFFIm's Financial Policies and Strategies

1. Formation and implementation of IFFIm Financial Policies and Strategies

The Financial Policies and Strategies (FPS) which were proposed by the World Bank and adopted by IFFIm were one of the key factors in the successful positioning of IFFIm as a supranational. There are five different categories within the FPS:

2. Funding strategy

Objectives: Minimise long-term funding cost, ensure stable market access, raise public awareness and other objectives e.g. issue bonds into the capital markets of donor countries. The objectives are prioritised in that order.
Constraints: The need to achieve a funding level within a reasonable margin of the donors
Policy: Position IFFIm as a supranational issuer and issue to a mix of institutional and retail investors

The choice of funding strategy was largely driven by IFFIm's positioning as a supranational 'World Bank surrogate'. Institutional supranational investors e.g. central banks are motivated by safety and liquidity hence the bulk of the demand in this market is for short maturities (generally up to 5 years). Retail investors in the important Japanese Uridashi market are also focussed on short dated bond issues because they seek to access short term currency appreciation against the Yen and higher foreign currency yields (see **Annex 10** for an analysis of the Uridashi market).

There are risks associated with pursuing a short dated funding programme (IFFIm has end of life risks which are not a feature of normal MDBs) but the objectives of minimising

[46] For example, DFID could have raised the current level of IFFIm borrowing for $10.6m less. For Norway and Sweden the costs savings would have been even greater

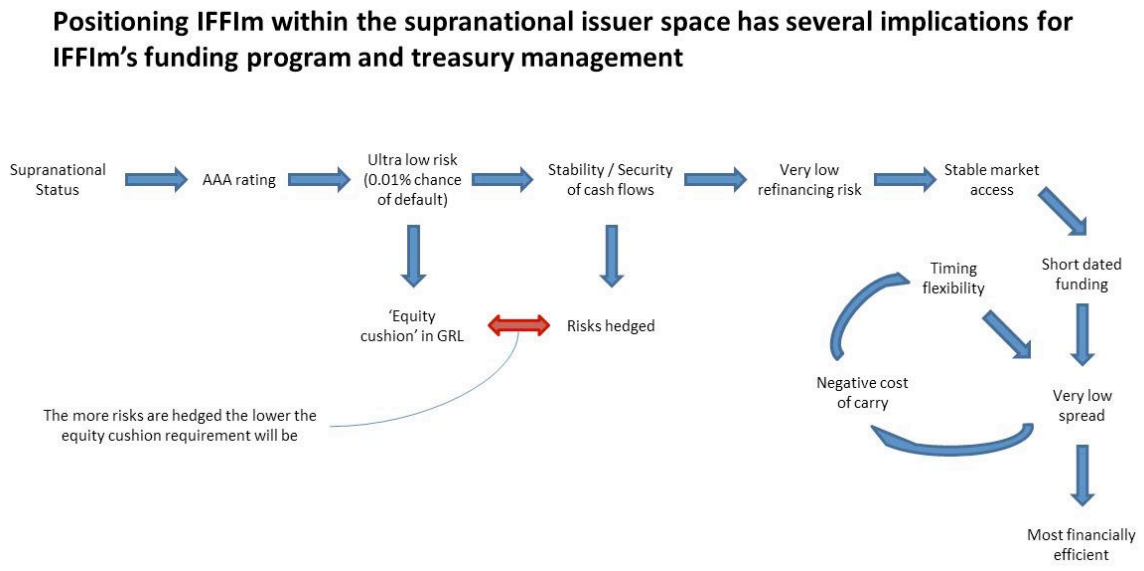
long term funding cost and ensuring stable market access are best met by pursuing a supranational funding strategy. At the time the initial financing strategy was being decided, there was 'basis point' sensitivity from some important donors and so any other financing route would have faced strong political resistance.

This is an area where the Board has challenged the funding strategy proposed by the World Bank; the Board was concerned that IFFIm's funding was becoming overly short dated and hence resolved (in March 2009) that funding should be for a minimum tenor of 3 years and ideally longer. Following this resolution the World Bank has been able to issue some small longer dated (10 and 15 years) bonds in the Uridashi market at spread levels which are still competitive against shorter dated non-Uridashi markets.

Because retail investors' investment decisions are not solely driven by the relative value of IFFIm's credit spread, they can often offer IFFIm more attractive funding levels than institutional markets. The drawback of retail markets is that they are inherently less reliable than the institutional funding markets and so cannot be relied upon to the same extent. IFFIm has used the Uridashi market extensively, especially in the wake of the financial crisis but has more recently diversified by issuing into the private placement and Kangaroo bond markets.

The combination of IFFIm's perceived credit strength, mix of retail and institutionally targeted bonds and the short dated tenors has resulted in very low funding spreads – the weighted average spread for all IFFIm's bond issues is US$ Libor-7.3bp. A knock-on effect of being able to issue at such low spreads was that IFFIm earned more on its liquidity balances than it paid to borrow money i.e. IFFIm had a positive carry. This is important for IFFIm's funding strategy because it gave IFFIm more flexibility on timing bond issues since it was able to take advantage of attractive funding opportunities as they arose without having to consider the cost of holding the liquidity.

Figure 24: Key Determinants of Financial Efficiency



Source: HLSP

The end result of the above factors was that IFFIm benefited from a 'virtuous cycle' driving down the cost of funding to a level which, even within the supranational issuer group, is extremely low. The World Bank has guided IFFIm to an extremely low cost funding program and in the words of the IFFIm chairman. The funding spreads IFFIm has achieved indicate that IFFIm benefits from a 'World Bank halo'.

3. Liquidity management

Objectives:

1. Ensure the availability of cash to meet operational requirements in the normal course of business
2. Provide a reserve to cover unforeseen events which may impact IFFIm's borrowing capacity or access to markets
3. Enhance investor confidence and meet credit rating requirements that sufficient liquidity is available to meet IFFIm's obligations under adverse circumstances
4. Provide flexibility in IFFIm's funding program

Constraints: Maintaining a liquidity profile consistent with IFFIm's supranational status and donors' resistance to IFFIm carrying excess liquidity.

Policy: Maintain a prudential minimum level of liquidity equivalent to the cumulative contracted debt service payments for the next 12 month period.

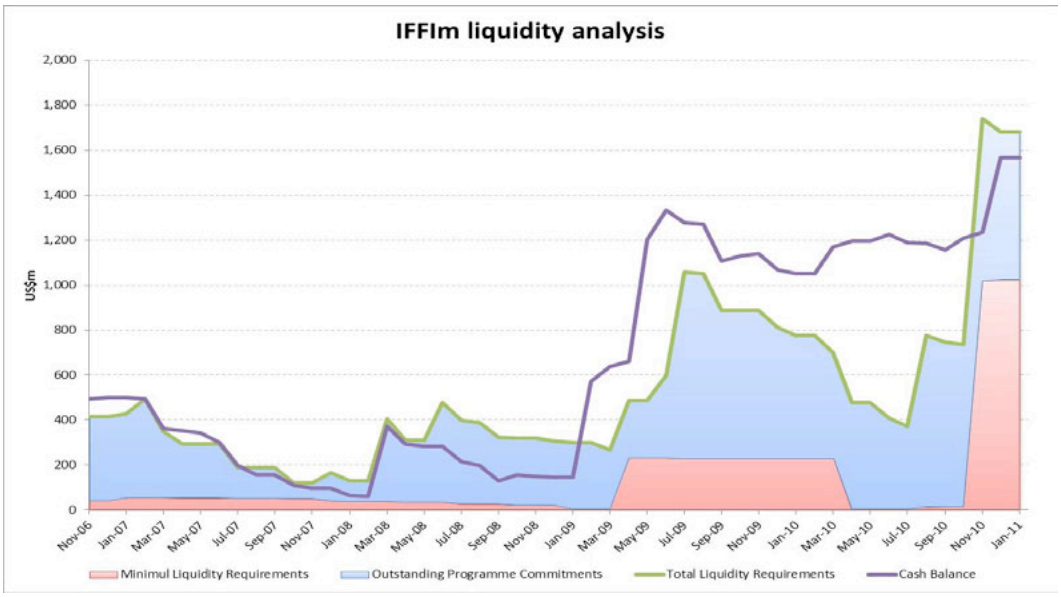
The World Bank performed an analysis of policies at other MDBs (see **Annex 11**) which vary from the International Finance Corporation (IFC) which uses 65% of net cash requirement over 3 years to the EIB which uses 25% of net cash flows over 1 year. Comments published by S&P on MDB liquidity policies were also factored into the final policy adopted by the IFFIm board. This demonstrates that its policies are in line with those used for comparable issuers.

Once the liquidity policy had been set, the implication for the timing and size of bond issues needed to be considered. Ultimately, the positive carry has allowed IFFIm considerable flexibility; IFFIm takes advantage of attractive funding opportunities as they arise and also executes larger bond issues in important markets.

There are two liquidity thresholds which need to be managed: (i) the minimum liquidity requirement of 12 months forward looking debt service and (ii) GAVI's estimated future funding needs. Whilst (i) can be precisely calculated, (ii) is only an estimate (once a programme is approved, the timing of disbursements depends on the recipient country's ability to implement it) and has not been particularly reliable in the past.

The chart below shows IFFIm's actual cash position against the minimum liquidity requirement and programme approvals. The only 'excess' liquidity raised was the $169m Uridashi #4 issued in Jun '09 (remained excess until October '10) which was in response to estimated demand for funds from GAVI. There have also been periods where IFFIm has carried less than the full estimated liquidity requirement.

Figure 25



Source: World Bank

IFFIm's minimum liquidity policy has been accepted by investors and the rating agencies as fully consistent with a supranational. However, it should be noted that the rating agencies have indicated that a more conservative policy may be expected in the latter part of IFFIm's life when the impact of delayed or reduced donor payments will have a greater effect on IFFIm's debt service capacity.

In practice, IFFIm and the World Bank have had to 'feel their way' with respect to the amount of funding required by GAVI. Since IFFIm makes a small carrying gain on the liquidity it holds, this has not been an issue for financial efficiency and the amounts of excess liquidity have been relatively small compared to IFFIm's liquidity needs.

4. Investment management

Objectives: Protection of invested capital, preservation of liquidity and the generation of returns, in that order.
Constraints: Prudent financial policies are of critical importance to IFFIm's long term viability but present a somewhat conflicting objective with the need to generate returns which offset the cost of borrowing.
Policy: Liability based approach in which IFFIm invests in high grade fixed-income securities with interest rate sensitivity matching the liabilities (bond issues) funding the portfolio.

The safe custody of assets is a key factor in IFFIm's AAA rating and is currently the overriding priority of the approach to investment management. Secondly, given the

uncertain timing and magnitude of IFFIm's cash flows, the ability to liquidate investments is extremely important in order to meet cash flow requirements without undue cost.

IFFIm expected a high degree of scrutiny of their financial performance from donors, rating agencies and investors with a particular sensitivity to investment losses and the cost of carrying liquidity. These two constraints drove the requirement to have an investment management policy which both protects assets and generates enough income to neutralise the cost of borrowing.

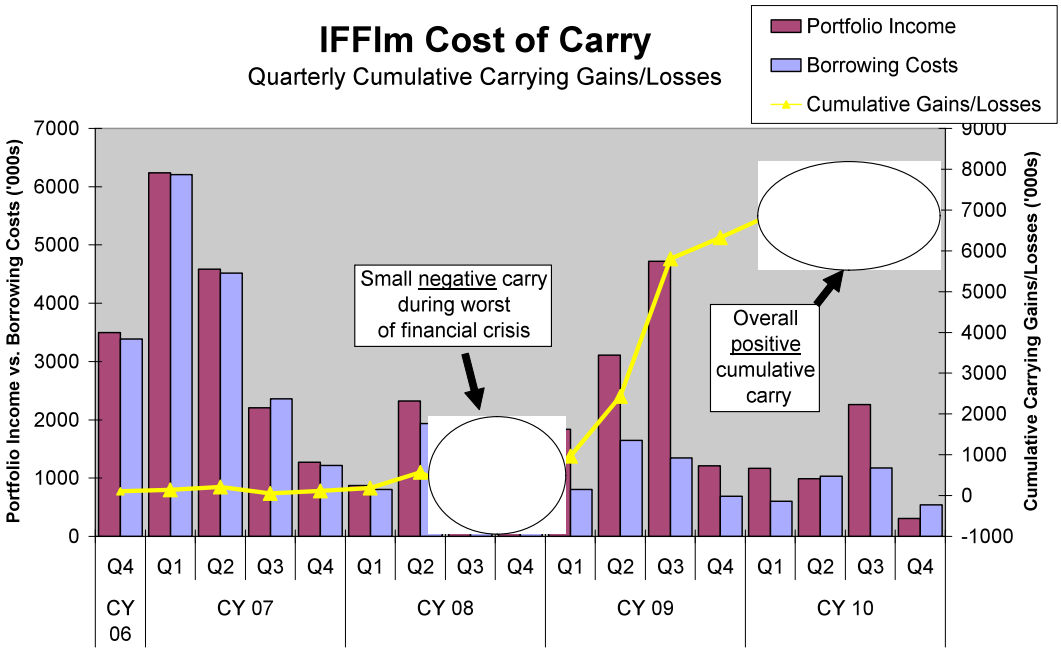
The need to avoid investment losses in any annual reporting period determined that a short dated liability based strategy which is benchmarked to the 3 month LIBID index was required (see **Annex 12** for a full analysis); longer dated investments may provide a higher return but the path to those higher returns is more volatile and could result in IFFIm reporting (un-crystallised) investment losses prior to maturity.

The recommendation of the World Bank, which was adopted by the IFFIm Board, was that IFFIm's cash balances should be invested in the World Bank Trust Fund Libor Pool (the Pool). There are a number of advantages to participating in the Pool; lower fees (3bp of the balance being managed), enhanced liquidity, established infrastructure (broker agreements, custody arrangements etc) and the reputational strength of the World Bank.

Balances within the Pool are subject to the World Bank investment authorisation which applies to all funds managed by the World Bank including its own liquidity. This is an important factor for investors and regulators since the World Bank's policies have represented somewhat of a 'gold standard' in the supranational market for over 50 years.

Although the policies may appear to be excessively conservative, they have served IFFIm well; IFFIm made a profit of ~$7.6m (29bp per annum on the average cash balance) from inception to December 2010 on its liquid assets (Figure 26). This is an impressive performance, especially in light of some other MDBs which suffered heavy losses during the financial crisis. The Inter-American Development Bank (IADB), for example, suffered mark to market losses which peaked at $2bn during the financial crisis (the losses were subsequently reversed in large part) on its liquidity portfolio (see **Annex 13**).

Figure 26



It is important to note that the sub-Libor funding levels achieved by IFFIm are dependent on IFFIm adopting extremely conservative, risk averse policies and the management of liquid assets is a key part of those policies. Feedback from bond underwriters consistently points to the value of having the World Bank act as IFFIm's treasury manager for a number of reasons:

16. At the initial stage of set up and marketing, the presence of the World Bank as treasury manager played a key role in positioning IFFIm in the supranational area;
17. It conveys instant credibility for IFFIm and opens many doors required for market access discussions;
18. The World Bank's stewardship role constantly aligns IFFIm within the family of MDBs and ensures IFFIm's mission profile is high;
19. In niche markets such as the Uridashi market, the presence of the World Bank is critical as IFFIm is viewed almost as a "proxy".

Recently the Board has executed an interest rate swap 'overlay' on $1bn of the investment assets (see **Annex 14**) which was outside IFFIm's prevailing investment policy. Whilst it is a small financial risk, there is a potentially bigger risk of IFFIm breaking the close link between IFFIm's policies and those of the World Bank. Should investors not continue to view IFFIm as a fully World Bank managed vehicle, there could be implications for IFFIm's funding spread. The latest IFFIm bond prospectus advises investors that "IFFIm's liquidity will be invested in high-grade fixed-income instruments with interest rates matching those of the liabilities funding the portfolio". We would suggest that this is an issue which would benefit from debate between donors and the Board at the IFFIm donors meeting.

1. Risk management strategy

Objectives: Hedge IFFIm's exposure to interest rate, currency and credit risk to the extent practical and possible.

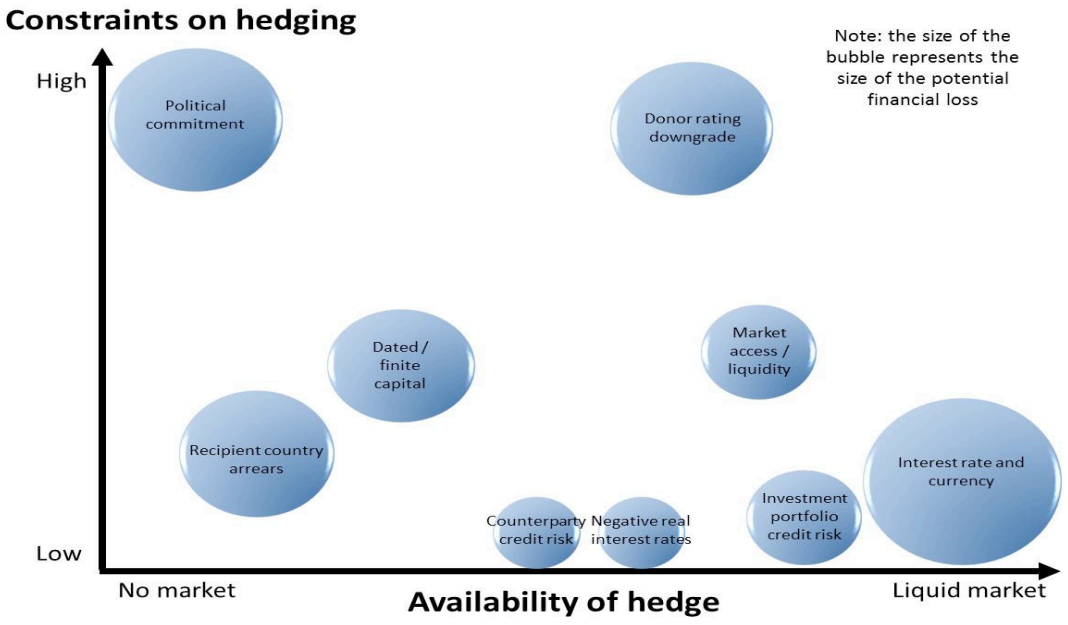
Constraints:
1. Unknown size of future donor pledge receipts due to the HLFC
2. Size of the pledges relative to market capacity
3. Accounting treatment
4. Political sensitivity

Policy: All donor pledges and bond issues are hedged into US$ on a floating rate basis as soon as the cash flows are legally binding (donor pledges on the Effective date and bond issues on a back to back basis). Counterparty credit risk is managed through the World Bank however sovereign credit risk is not hedged.

As discussed above, IFFIm's financial efficiency depends fundamentally on the maintenance of its AAA credit ratings which are one of the cornerstone requirements of being a supranational issuer. Maintaining AAA credit ratings in turn requires a prudent risk management strategy and effective implementation of that strategy.

Most of the risks IFFIm is exposed to are unhedgeable for one reason or another and so the importance of hedging those risks which can be hedged is therefore higher. Central to IFFIm's ability to be rated AAA is the protection of IFFIm's debt service capacity and bond proceeds; this can only be achieved by removing as much exposure to interest rate and currency moves as possible.

Figure 27: IFFIm's Approach to Hedging



Hedging these risks is made more complex by the uncertainty created by the HLFC; if donor pledges were unconditional IFFIm would hedge their full amounts but IFFIm's hedging needs to take account of the uncertainty in actual donor pledge receipts. See Annex 15 for a full description of the options available to IFFIm and the choices made. The choice of hedging policy was driven by the need for IFFIm to have a conservative risk management strategy consistent with supranational status. Political sensitivity and accounting presentation were important drivers of the execution timing. Within these constraints, IFFIm had relatively little choice and ex-post, the strategy of fully hedging current donor pledges has proved to be very effective since the level of IMF arrears has been very stable.

2. Gearing Ratio Limit (GRL) model and GRL

Objective: The GRL was intended to be a key determinant of the credit ratings for IFFIm
Policy: Under the TMA the World Bank is required to review the GRL model no less frequently than once per annum and recalculate the GRL at least quarterly.

The GRL is an important part of IFFIm's FPS because it gives rating agencies, investors and regulators comfort that IFFIm will not exceed a conservative level of leverage consistent with its AAA ratings. A simplified explanation of the GRL is that it creates an 'equity cushion' so that there is a sufficiently low chance (for a AAA rating) of IFFIm not being able to repay all its debt if it borrowed up to the GRL. Whilst the level of the GRL may intuitively appear overly conservative, it is the result of a sophisticated and rigorous computational process which reflects the 'equity cushion' required to lower the probability of default to that consistent with AAA ratings.

Since inception the World Bank has performed various reviews of the model, often with considerable involvement of external consultants. Various improvements have been made which have moved the model from being a relatively 'basic' excel based model to being a very sophisticated model which is now on a Matlab platform.

The GRL model cost $189,408 in 2008 and $193,451 in 2009 of which $50,000 was accounted for by external consultants in each year. This cost base is unlikely to be significantly lower in future years because of the on-going commitment to review the model.

The extent to which IFFIm's rating should be linked to those of the UK and France is an area of disagreement between the World Bank and the rating agencies. The output from the GRL model shows very little dependence but the rating agencies nonetheless explicitly link them. In theory, the 'equity cushion' created by the GRL model should provide investors sufficient safety for a AAA rating irrespective of donor ratings. In effect this means that IFFIm is over-constrained since the GRL model outputs a GRL which is consistent with a AAA rating *irrespective of donor ratings* but the rating agencies nonetheless link IFFIm's rating to those of the UK and France.

In practice, IFFIm will not even be able to borrow up to the full GRL; a small additional cushion is required to protect IFFIm from GRL volatility, credit rating downgrades as the GRL is approached and to maintain investor confidence.

With the benefit of hindsight, since the rating agencies appear to place less reliance on the GRL model than was anticipated, a less deterministic approach to setting the GRL could potentially have been adopted. For example, the GRL could be set at a 'conservative' level with the *aid* of a GRL model rather than being *tied* to the output of the GRL model.

Investigations into solutions to the constraint of the GRL are under way; the most promising solution being discussed is for donors to re-direct their annual core GAVI funding grants to IFFIm which would help to release some of the 'equity cushion'. Other solutions could be issuing junior tranches of non-AAA debt (although this might give IFFIm the appearance of being a CDO) or getting a AAA donor to guarantee to top up IFFIm in the event that more than a certain number of recipient countries entered arrears to the IMF

20. Other Factors Relevant to IFFIm Performance

1. Impact of the financial crisis

1. What impact has the financial crisis had on IFFIm?

Whilst ostensibly the effect of the financial crisis on IFFIm has been relatively limited, there are currently two significant risks to IFFIm which have become much more pronounced as a result of the financial crisis. The biggest risk is that of donor concentration – the heavy reliance on the UK and France - and the explicit link between IFFIm's credit rating and those of the UK and France[47]. The other significant risk, which is linked[48] to the risk of a ratings downgrade, is that of IFFIm losing its supranational status. Currently neither of these risks is close to being crystallised, but the magnitude of the cost to IFFIm of either would be greater now than in the past.

The financial crisis has, however, also highlighted an important strength of the IFFIm structure; lower rated donors whose credit spreads have widened are able to 'piggy back' on the combined influence of the UK and France's credit strength and IFFIm's connection to the World Bank. IFFIm's new issue spread has actually improved relative to other supranational issuers despite the fact that credit spreads of Italy and Spain (who currently represent 15.2% of IFFIm's assets) have widened by 163bp and 244bp respectively since the inaugural bond issue. IFFIm priced its Kangaroo bond 24.4bp better than the weighted average donor spread whereas the inaugural bond was priced 9.5bp wider.

Supranational spreads certainly moved sharply wider during the financial crisis and are still wider than they were at inception. However, IFFIm has been largely shielded from spread widening by issuing into the Uridashi market and the relative spread improvement in relation to its peers. From a market access perspective it is highly likely that IFFIm would have had continuous market access - albeit at elevated funding spreads – had it needed to. The timing flexibility afforded by IFFIm's liquidity management – and the fact that it didn't *need* to issue - meant that IFFIm could 'weather the storm' even after having a bond underwriter pull out of a planned issue in late 2008.

2. Diversity of Pledges/ Donor concentration

During the design phase IFFIm's pledges were expected to come from a balanced group of donors but in practice, the UK and France accounted for ~74% of pledges at inception and ~75% currently.

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47 As noted earlier – the link between donor ratings and IFFIm's ratings is the view of the rating agencies and is not accepted by IFFIm partners

48 to note: the loss of AAA status does not necessarily mean the loss of supranational status - there are non AAA MDB's such as CAF and the Black Sea Development Bank

Figure 28: Donor Pledges to IFFIm

Donor pledges (Hedged PV)

	Oct '06		Mar '07		Dec '07		Dec '09		Oct '10	
	US$	%age	US$	%age	US$	%age	US$	%age	US$	%age
UK	1,426	60.1	1,426	59.8	1,426	45.9	1,426	44.5	1,696	46.2
France	335	14.1	335	14.0	1,055	34.0	1,055	32.9	1,055	28.7
Italy	398	16.8	398	16.7	398	12.8	398	12.4	398	10.8
Netherlands							100	3.1	100	2.7
Spain	161	6.8	161	6.8	161	5.2	161	5.0	161	4.4
Sweden	27	1.2	27	1.1	27	0.9	27	0.9	27	0.7
Norway	24	1.0	24	1.0	24	0.8	24	0.8	223	6.1
RSA			12	0.5	12	0.4	12	0.4	12	0.3
Total	2,372		2,384		3,105		3,205		3,673	

In theory, the 'equity cushion' created by the GRL model should provide sufficient safety for AAA ratings irrespective of donor ratings. In practice, because of the high proportion of IFFIm's assets represented by the UK and France, all three rating agencies have explicitly linked IFFIm's rating to those of the UK and France. This risk was highlighted in May 2010 when S&P put the UK on negative watch and immediately put IFFIm on negative watch as a direct consequence.

The remedy for excessive donor concentration is to bring new AAA donors into IFFIm[49]; non AAA donors would reduce donor concentration but would dilute the proportion of AAA pledges. The largest shareholders of MDBs where there is not a credit linkage is in the region of 16-18%. Therefore if the weighting of either the UK or France were to drop below 20% a case could be made to remove the linkage.

3. AAA ratings and supranational status

During the financial crisis, investors found to their cost that AAA ratings, especially for structured securities, were no guarantee of protection from credit loss. As a result, investors are now more sceptical of 'structured AAA' securities and the range of traded AAA spreads has widened considerably. The implication for IFFIm's financial efficiency is that the consequences of losing supranational status and perception as a 'World Bank surrogate' are more pronounced currently than they ever have been. The World Bank connection is particularly important for the Uridashi market:

"In certain niche markets such as the Uridashi market, the presence of the World Bank specifically, is critical as IFFIm is viewed almost as a "proxy" to the World Bank. IFFIm's access to niche markets would be …. severely impacted if the World Bank was not IFFIm's Treasury manager."(Uridashi market survey)

49 the largest shareholders of MDBs where there is not a credit linkage is in the region of 16-18%. Therefore if the weighting of either the UK or France were to drop below 20% a case could be made to remove the linkage. This is one of the key reasons for IFFIm to continue to seek additional donor pledges source GAVI

Should IFFIm move from being perceived as a supranational to being simply a structured ABS, the 'virtuous cycle' of low funding rates and carry gains would unravel and the whole IFFIm structure would need to be re-evaluated.

4. Broader Impacts of Financial Crisis

The financial crisis is also likely to have had a broader impact on IFFIm through its knock on effects on country capacity to finance immunisation and on GAVI's access to alternative funds. Whilst not specific to IFFIm these factors will have served to increase GAVI's reliance on IFFIm as a funding source.

Though no specific data is available on actual impact of the financial crisis on country capacity to finance immunisation the effects of the crisis on economic growth and public spending are likely to have affected domestic funding for immunisation[50].

Equally, the slow down in overall donor disbursements has meant that GAVI is having to compete for resources from a smaller overall aid resource envelope than would have been the case without the financial crisis[51].

2. Tipping Points

A tipping point is an event or change in circumstances that could significantly alter the operating model or financial efficiency of IFFIm. There are four such tipping points applicable to the IFFIm mechanism:

1. Loss of the World Bank as IFFIm's Treasury Manager
2. Exceeding the GRL
3. Loss of AAA ratings

1. Loss of the World Bank as IFFIm's Treasury Manager

In the opinion of the evaluators, the most prominent tipping point currently is any change in the market's perception that IFFIm is 'part of the World Bank'. The ease with which IFFIm has assimilated itself into the supranational issuer space and the remarkably tight funding spreads it has achieved (tighter than KfW – an institution with an explicit guarantee from the German government and a 60 year history) can only be explained by its close association with the World Bank. Whilst IFFIm's charitable mission and the quality of the Board are complementary, without the presence of the World Bank as Treasury Manager the entire 'IFFIm funding model' would need to be re-designed. IFFIm stakeholders have perhaps become so used to IFFIm's impressive funding spreads that

50 http://www.odi.org.uk/resources/download/2462.pdf

51 Despite the financial crisis OECD DAC report that aid has continued to increase – albeit slowly - since 2005 http://webnet.oecd.org/dcdgraphs/ODAhistory/

these funding levels are now taken for granted and the importance of the World Bank's participation is overlooked.

It is not possible to accurately estimate the magnitude of the increase in funding cost should IFFIm lose the World Bank and adopt the 'next best' alternative[52] but it is likely that it would be very significant. The evaluators have not seen any evidence that another MDB could (or even if possible that another MDB would be willing to) perform the full Treasury Manager role. The implications both for investor confidence in IFFIm and the market credibility of the IFFIm donors (most notably the UK and France) would be very negative should IFFIm chose this path. Having established itself as a supranational (with very clear benefits), changing course would be a difficult and extremely expensive exercise which would most likely be irreversible; once lost, regaining supranational investors' confidence would be an extremely difficult and lengthy process, if possible at all.

The evaluators would highlight the risk of *any* divergence of IFFIm away from the World Bank, especially relating to policy and strategy. It is clear to the evaluators that regulators, investors and bankers have allowed IFFIm to enter the exclusive supranational sector with all of its cost and market access benefits due to a high level of confidence that IFFIm is managed by the World Bank with World Bank-like policies.

It should be noted that the World Bank is only bound to IFFIm by the TMA (which expires in September 2011) and it is under no obligation to enter into another term as Treasury Manager[53]. Any negotiations for the extension of the TMA will need to both recognise the importance of the World Bank and address its concerns over the practical implementation of financing strategy.

Having the World Bank as Treasury Manager has been one of the most important factors in IFFIm's success to date; indeed IFFIm may not be possible at all without the World Bank's participation. There are two aspects to this:

4. In order to avoid 'polluting' the strength of IFFIm's credit, the Treasury Manager needed to have a comparable credit strength and ideally be a MDB[54] which left IFFIm with few alternatives. In fact the World Bank was the only institution to submit a full tender for the Treasury Manager role (the EIB, which was the only other respondent, did not submit a full tender).The World Bank's reputation, credibility and strong AAA ratings were absolutely critical to IFFIm being able to qualify as a supranational; 0% risk weighting[55], AAA credit ratings and investor confidence all depended in part on the World Bank's participation.

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52 The evaluators are not aware of any alternatives to the current financing model having been considered or planned. Possible alternatives could be to outsource Treasury Manager roles to multiple commercial service providers or 'selling forward' the IFFIm assets and managing the resultant liquidity. There would be significant issues to overcome for any alternative financing model.

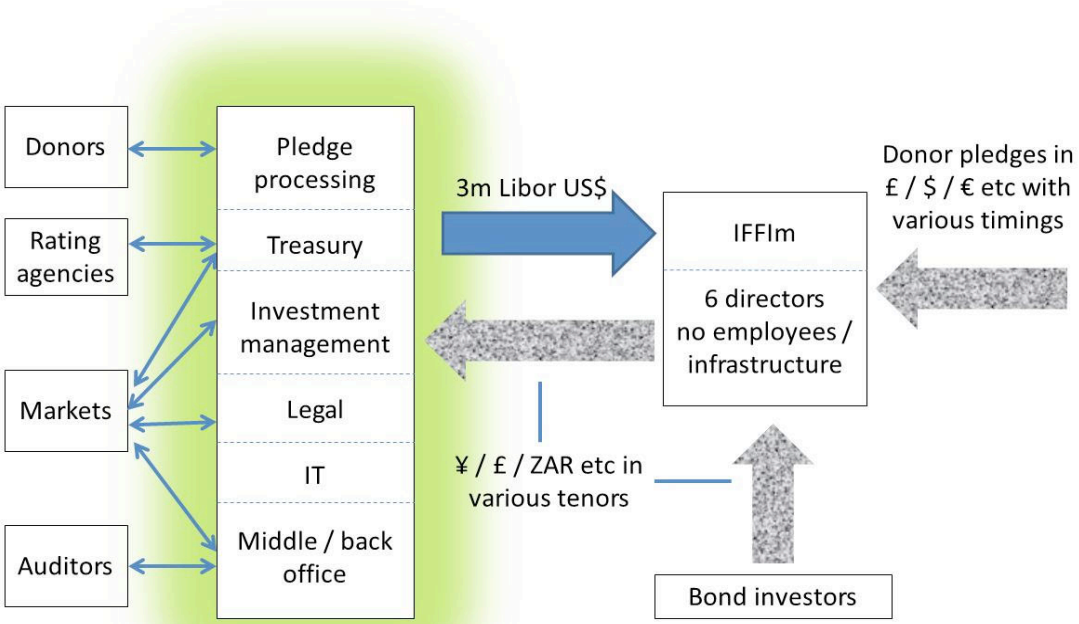
53 The IFFIm donor group forms only a small subset of the World Bank shareholders. In forming a view on whether to accept the role of Treasury Manager for another term the World Bank will need to consider (i) whether it is in the interests of all its shareholders, (ii) whether it will be able to recover its costs and (iii) whether the reputational risk of continuing to present IFFIm as a 'World Bank' surrogate is appropriate.

54 FFA section 13.3.7

55 Zero risk weighting according to the EC, BIS and Australian regulator all rely on the World Bank acting as Treasury

5. Since IFFIm is restricted to having only having a part time Board and no employees, IFFIm must outsource all operational activities; essentially IFFIm is 'renting' the World Bank's infrastructure. Whilst other institutions could potentially perform some of the functions needed by IFFIm, it is unlikely that any other single institution could perform all the roles. Even if, hypothetically, other institutions could be substituted for the World Bank, managing multiple relationships would significantly increase the burden on the Board and would introduce significant operational risks e.g. systems compatibility. In essence, the World Bank acts as a 'financial filter' and 'protective shield' between IFFIm and the various regulators, market counterparties and donors. These are discussed in more detail in **annex 17**.

Figure 29: Role of the World Bank as a "Financial Filter"



1. Exceeding the GRL

There are two risks associated with exceeding the GRL; new programmes cannot be approved[56] and IFFIm may lose its AAA ratings. The first risk could, in theory, be addressed by IFFIm approving all future expected programmes before the GRL is breached but the market signalling effect of such a move could be very negative. The

Manager

56 FFA section 5.2

three major rating agencies take slightly different approaches to the GRL but Fitch, in particular, have stated that they would put IFFIm on negative watch as the GRL is approached and would almost certainly downgrade IFFIm if the GRL is breached.

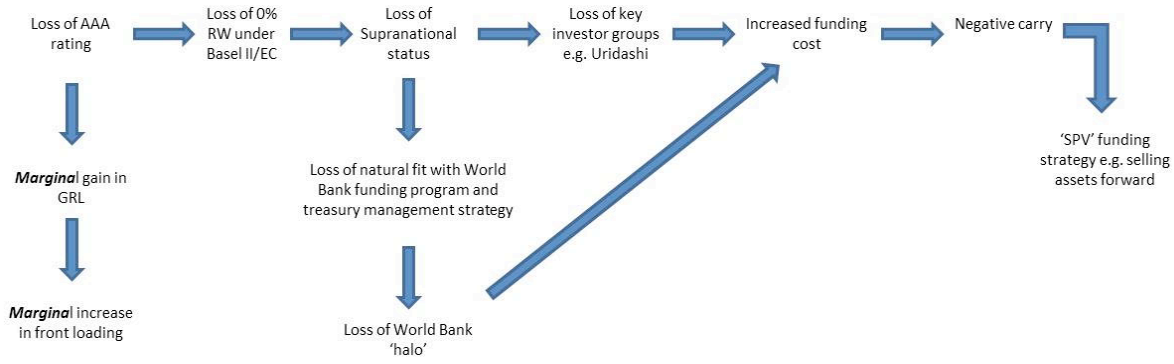
Since IFFIm's hedging programme cannot fully offset exposure to interest rate and currency fluctuations (due to the HLFC), there will always be an element of volatility in the GRL. If IFFIm were to fully borrow up to the GRL it would be exposed to the risk of exceeding the GRL due to moves interest rates or currencies. To avoid this risk, IFFIm will need to leave a cushion in the GRL. Solutions to this issue – and identifying ways of accessing the cushion without risking the loss of AAA status - are being discussed (see **section 5**). However, none have come to fruition yet.

2. Loss of IFFIm's AAA ratings

There is a range of stakeholder views on the importance of IFFIm maintaining AAA ratings, but from a financial efficiency perspective, AAA ratings underpin the entire structure.

Whilst not the only criteria for supranational status (there are split rated supranational institutions), AAA ratings are one of the key indicators and are more important for IFFIm than other supranationals because IFFIm lacks many of the other normal attributes of a supranational. Without the benefit of its charitable mission, it is possible that IFFIm would not have been granted 0% risk weighting by the BIS (Basel II) or MDB status by the EC. The chain of knock-on effects if IFFIm lost its AAA ratings is illustrated below:

Figure 30: Possible Impact of Loss of AAA Rating



6. Without a AAA rating, it is almost certain that IFFIm would lose its 0% risk weighting under Basel II[57] and could be removed from the list of EC MDBs;[58]

[57] The Committee is of the view that claims on the IFFIm could be assigned a 0% risk weight given that, among fulfilling other criteria set out in paragraph 59 of the Basel II Framework,

1. The World Bank acts as its Treasury Manager responsible for managing IFFIm's funding, liquidity and other treasury operations;
2. IFFIm has received a AAA rating from Moody's Investors Service, Standard & Poor's and Fitch Ratings; and
3. Its donor structure is comprised of sovereigns that have made legally binding grant commitments to IFFIm. The majority of the donors have long-term issuer credit assessments of AAA.

7. The constraints of an investment management strategy designed to maintain AAA ratings would no longer be appropriate so the natural fit with the World Bank's funding and investment management strategies would be lost;

8. Regulatory treatment drives the investment decisions of many supranational investors; without AAA ratings and 0% risk weighting IFFIm would lose access to key investors. Some investors in the Kangaroo bond would not have been able to invest if IFFIm had stayed on negative watch and Uridashi investors almost exclusively invest in AAA rated bonds;

9. Without access to the key supranational investors, IFFIm's cost of funding would increase (possibly quite sharply) and hence its current funding and liquidity strategy would need to be re-assessed;

10. Ceteris paribus, the GRL would increase marginally, from 69.7% currently, to 71.3% for AA, 73.7% for A, 77.2% for BBB and 82.2% for BB (percentages come from simulations using the GRL run by the World Bank) which would allow IFFIm to access more of the financial cushion earlier.

1. Catalytic Impact of IFFIm

Although expectations of catalytic impact were not fully spelt out at the outset we did identify possible examples. Concrete examples of innovative financing approaches - such as IFFIm - have helped to keep up international interest in innovative financing. The health sector is very much at the forefront and seen as a key leader in this area. One of the results of this interest was the Task Force on Innovative Financing for Health Systems. At a more downstream level the GAVI mandate also appears to have incentivised bond dealers at the margin and provided an opportunity to engage with the financial community and potential donor governments (though it is not clear whether this has actually led to greater pledges).

One argument for the use of IFFIm funds is that it was allowed introduction of vaccines earlier than would otherwise have been the case. This is particularly relevant for graduating countries which provide a good fit with the IFFIm model (more money is needed for GAVI now but less later as countries graduate from GAVI assistance because they are judged able to fund the vaccines themselves, thus reducing sustainability concerns). Whilst we are not aware of any direct evidence that this has happened we would point to the fact that the potential benefits could be huge. For example bringing forward introduction of rotavirus and pneumococcal virus in India by one year could save something in the order of an extra 115,000 lives[59]

[58] One of the indicators for MDB status under EC legislation is a AAA rating

[59] Author using LiST model. Assumes coverage increases by 10% per annum each year

Interviews with key informants also suggested catalytic effects, notably in India and China, where a catch up second dose was introduced, after seeing the successes through similar efforts in IFFIm funded countries. For pentavalent it was suggested that the impact of lower prices for pentavalent vaccine has extended beyond the core beneficiaries of GAVI assistance. Many middle-income countries can be considered more likely to adopt the pentavalent vaccine now that its price is below US$3 per dose for the poorest countries.

2. Externalities produced by IFFIm

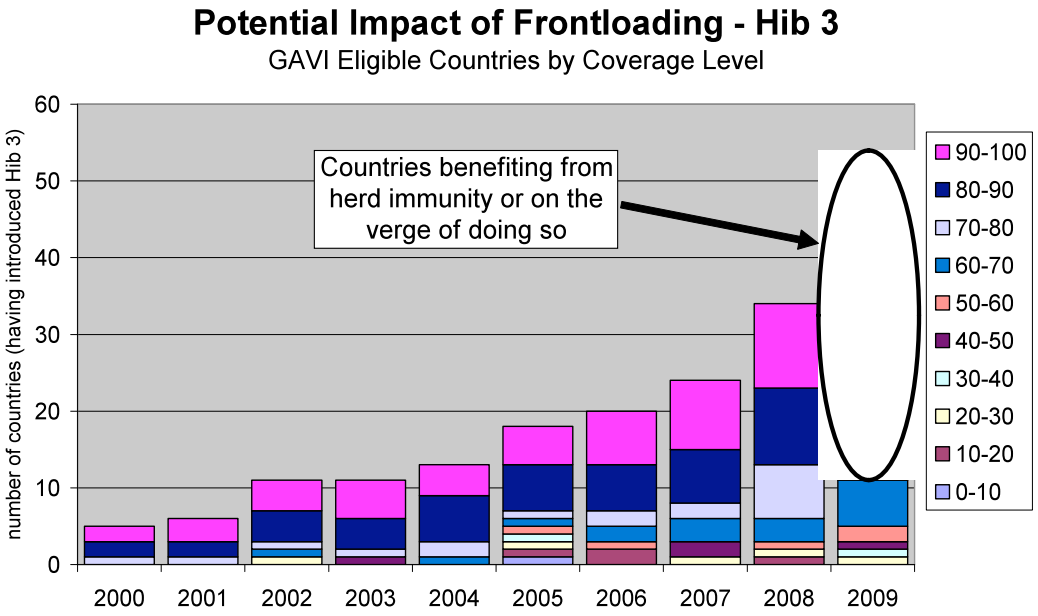
IFFIm has certainly achieved impacts beyond those specifically targeted for immunisation. The Measles Initiative – supported through an investment case - provides a channel through which other key benefits can be delivered including bed nets to protect against malaria, de-worming medicine, and vitamin A supplements. The Global Polio Eradication initiative has also been used as a channel for supporting Vitamin A supplementation (which prevented an estimated 450,000 deaths over the last decade or so).

Although much of the GAVI/IFFIm support to health systems strengthening has been rather immunisation specific strengthened systems can provide a platform for the delivery of health services as a whole.

One of the key arguments for IFFIm is that it allows countries to reach the levels of coverage needed for herd immunity (which protects those who are un-immunised) to make a step change increase in benefits. The level of impact is impossible to measure as the evidence base on where herd immunity kicks in and how powerful its effects are is extremely weak and varies between vaccines. None of the models (other than LiST for measles) currently used by GAVI attempts to capture the impact of herd immunity. However, what we can say – as shown in **figure 31** - is that IFFIm funding has helped increase access in many countries to coverage levels at which one might expect herd immunity to have an effect. This shows the rapidly increasing number of countries achieving over 70% coverage for Hib (IFFIm funding accounts for just over half of the increase in coverage since 2006). We also carried out an illustrative modelling exercise using the LiST model to assess the potential impact of frontloading and herd immunity for rotavirus in Bangladesh. This is shown in **annex 18**. Whilst the findings are not generally applicable to all vaccines in all settings they do illustrate the potential role herd immunity may place in enhancing health benefits.

Source: WHO/UNICEF coverage estimates for 1980-2009, as of July 2010

Figure 31



3. Advocacy and Communications

The evaluation focuses on the extent to which advocacy and communication has enabled IFFIm to achieve its goals in raising long term finance for immunisation.

IFFIm success, in itself, is not an indicator of the success of advocacy and communication activities. In the absence of comprehensive audience perceptions surveys, we assessed respondents' feedback, media coverage, the alignment of messages and audience focus to draw conclusions on the results and added value advocacy and communication have achieved.

The evaluation finds that IFFIm has clear advocacy and communication objectives, and a range of inputs to achieve them, but lacks indicators and a method of measurement to record progress.

Our assessment of investor-focused communication is that it has added significant value to bond issuances where communication and advocacy have taken place, and where partnerships with bond dealers have been formed to deliver marketing campaigns. It recognises the essential role played by the World Bank in communicating issuances into the markets. The evaluation finds that IFFIm has further to go in building senior advocates in finance.

We find that donor-focused communication and advocacy benefits when there is broad and creative coverage around bond issuances. Peer-to-peer advocacy has been effective in gaining support for IFFIm and we found that the role of the Board and Board Chair has been an essential component in the successful advocacy of IFFIm to donors and investors.

However, despite the challenges in generating media for IFFIm, with additional resources more could be done to provide media coverage in donor home markets and more targeting of materials and information is needed for segmented audiences within donor countries. We note that work is already planned to address this issue.

The evaluation finds that IFFIm communicates powerful messages on innovation and a single development purpose to investors, yet it must be mindful of managing risk through careful messaging in the next phase of its development.

However, the evaluation raises concerns about the structures used to manage and deliver advocacy and communication. It recommends a more central and strategic role in relation to the IFFIm Board and that protocols are developed with the World Bank around bond issuances. We also note that IFFIm brand logo is unclear for general audiences and does not clarify the role or purpose of IFFIm.

We found evidence of significant media coverage, especially around bond issuances, particularly where GAVI has been free to develop practice campaigns. Our message analysis of media coverage presents an overwhelmingly positive picture. We recommend that more investment is needed in media and communication are needed to broaden the spread of awareness across the year through initiatives such as visits and report launches. We note proposals to develop the website and recommends it has a clear focus on investors.

Advocacy and communications have also enabled a strong reach into investor audiences with some issuers noting the social purpose of IFFIm has a key factor in their strong relationship with it. This has ensured a powerful message reaches entirely new audiences. Beyond the investor, broad and creative communication of IFFIm has been an effective advocacy tool, through bonds and direct communication to donor audiences.

The evaluation concludes that advocacy and communication for IFFIm have brought demonstrable added value in a number of key areas including: having clear messages on innovative, socially responsible investment in a single development purpose; raising awareness around bond issuances; ensuring development messages reach new audiences; communication by the IFFIm Board and Board Chair; the association with the World Bank; and donor communication.

Looking to the future, IFFIm needs to consider a range of scenarios from IFFIm winding down to it expanding. Both scenarios carry communication and advocacy risks which should be managed through improved donor-focused advocacy and adapting messages towards either maximising stories of impact or communicating IFFIm as an ongoing investment vehicle.

Overall, this evaluation assesses IFFIm advocacy and communications positively. There are excellent examples, recognised by donors and investors themselves of effective communication initiatives and advocacy efforts. The evaluation recommends the next phase of IFFIm's developments will require more focus and investment in these areas to maintain and build donor support and to broaden the investor supporter base. The evaluation recommends that management arrangements improve ensuring advocacy and communication is more central to strategy going forward, that a more robust approach is

taken to communication planning and measurement to understand audience perceptions, and that increased efforts are made to communicate both to donors and investors and sub groups thereof.

A detailed assessment is provided in **annex 19.**

4. Sustainability of the IFFIm model

1. Is IFFIM a sustainable funding model?

The issue of sustainability emerged as a theme in many of our interviews. The issue is not specific to IFFIm – it is a GAVI wide issue. However, dollar for dollar IFFIm poses a greater sustainability challenge as – by spending 20 years of commitments in 5 to 7 years – it brings coverage to far higher levels, and far earlier, than would be the case for core funding.

IFFIm is clearly not, on its own, a sustainable model. This is not to say it does not represent good value for money or that it should not be sustained by attracting additional pledges. But it does suggest that organisations – such as GAVI - proposing to rapidly expand their activities at the very time IFFIm funds – based on current donor pledges - go into decline will face particular challenges. They may need to undertake some key actions to address these issues and mitigate the risks associated with it.

These challenges are illustrated in **annex 20**. Its shows, perhaps not surprisingly, that outstanding funding needs are highest – and can rise extremely rapidly post IFFIm funding - for an expanding organisation.

In a sense this illustrates the rather unfortunate timing of IFFIm in relation to GAVI's development. At IFFIm's inception GAVI did not have a ready made use for the funds and had to identify the investment cases to utilise the funds. Had IFFIm arrived two or three years later it would have been in a position to use the funds to support the rapid scale up of pneumococcal and rotavirus vaccines. As it is GAVI will have to do much of this as initial IFFIm funds are declining.

2. Where is GAVI taking IFFIm?

Going beyond sustainability a number of interviewees raised further concerns that they were simply unclear on what role IFFIm was expected to have in funding GAVI going forward - whether it would play a major role or a subsidiary role. Some interviewees reflected on the need for a longer term planning horizon and whilst they have no particular issues with the current strategic planning process they felt that the nature of IFFIm funding meant that a longer term planning horizon would be helpful. Whilst it is clear that GAVI sees an ongoing role for IFFIm its precise role still needs to be better defined. GAVI has started to address this since late 2010 and continues to engage donors specifically on growing IFFIm as part of its overall resource mobilisation. We note GAVI has an internal target for innovative finance (including IFFIm) to contribute a total of US$1.5 billion to GAVI's funding in the period to December 2015 and in the long run to "consistently

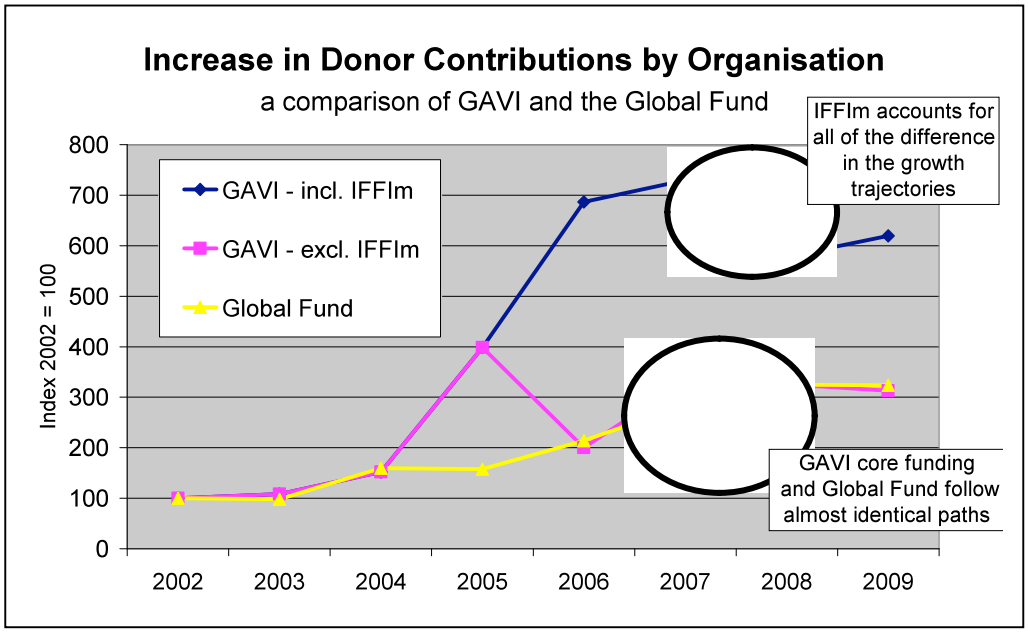
represent 15-25% of GAVI's overall funding sources"[60]. These figures have been shared with donors and ongoing discussions with donors should help elaborate IFFIm's role further. Such statements are helpful and may go some way to addressing outstanding concerns.

In short, IFFIm poses major sustainability challenges particularly for an organisation such as GAVI. The long term implications and nature of the support also suggest the need for a longer term planning horizon than would be the case for an organisation relying on more traditional financing sources.

3. Has IFFIm allowed GAVI to slacken off its mobilisation efforts?

Some interviewees raised the concern that the availability of easy money through IFFIm may have allowed GAVI to relax its resource mobilisation efforts. This issue is discussed in the phase 2 evaluation and, although a plausible hypothesis, we found no evidence to support it. Indeed, as shown in figure 32, the growth in core funding for GAVI since 2002 bears a striking similarity to the growth in funding enjoyed by the Global Fund in recent years. Growth in funding for GAVI is more rapid than the Global Fund when IFFIm funds are included.

Figure 32: Effects of IFFIm on GAVI's ability to attract Core Funding



Source: GAVI income from GAVI Secretariat as shown in Figure 33 and Global Fund website

[60] Doc #06c – Innovative Finance Update GAVI Alliance Board Meeting, 30 November – 1 December 2010

11. IFFIm Funding and Market Impact

This section sets out the expectations for IFFIm's market impact, the methodology used to assess whether these expectations were achieved and a detailed analysis of results achieved relative to expectations focused on polio, pentavalent, measles and MNT vaccines.

1. Market Impact Objectives

In the original IFFIm proposal there was explicit intent stated to have an impact on the vaccine market. Relevant excerpts include:

> "Substantial 'front-loaded' funding for immunization could be used to accelerate increased availability of new vaccines and to secure better pricing…..accelerate vaccine market forces…increasing vaccine supply and promoting affordability by offering manufacturers secured financing ('advance contracting') for priority vaccines for the developing country public sector market would help stimulate new private sector investment and greater competition, leading to a more rapid reduction in vaccine prices."

> "Advance contracting – agreeing on predictable price and/or volume flows for medium-term purchase – is a potentially high-impact mechanism for encouraging industry investment in the research, development, and supply of a wide range of health products including vaccines. The IFFIm will provide committed financial resources that will support long-term procurement contracts within the existing regulatory and procurement frameworks of WHO and UNICEF. This approach could have a powerful impact on late-stage (near licensure) products that are much needed by the developing world. Advance contracting for a new vaccine is already being implemented. A new polysaccharide conjugate meningococcal A vaccine is being developed by an Indian manufacturer who has signed an advance contract with an NGO partner, PATH. The manufacturer has committed to provide tens of millions of doses to the public sector at a very low maximum price of US$ 0.40 per dose up to end-2023."

Two of the indicators used internally by IFFIm donors included specific price reduction expectations on the pentavalent vaccine against 2006 baseline of $3.5 and expectations about the number of IFFIm-funded vaccines produced by monopoly suppliers versus the baseline of 2 in 2005.

2. Methodology

This component of the evaluation focused on areas where large amounts of IFFIm money were spent and on the vaccine products that had not been already covered in the GAVI Phase II Evaluation (Measles, MNT and Polio). Pentavalent was chosen given that it has

accounted for around half of IFFIm's spending and because at least one IFFIm donor has clearly expressed intent to influence that market specifically. This analysis updates the assessment made during GAVI Phase II Evaluation which was completed more than six months ago and takes into account the fact that the market has changed since that time. It also adopts a different focus looking at market changes enabled by the *form* of financing – predictable and frontloaded – and attributions to IFFIm specifically.

Documents were reviewed and key informants interviewed as data for the development of case studies, which focused on understanding whether/what was the market shaping intent for IFFIm funding and each vaccine, why decisions were taken, how decisions were implemented, what other changes were occurring apart from IFFIm funded interventions, what changes occurred in the market and what evidence is available to attribute market changes to IFFIm. Key issues assessed included whether:

12. the nature of IFFIm funding (being predictable - legally binding - and frontloaded) enabled UNICEF to interact or contract with industry in some way other than they would have been able to do otherwise (e.g. contracts being longer term, more legally binding or committing to higher volumes) and in ways that produced economic benefits or reduction in supply risk. [Exploration of contracting modalities pre and post IFFIm]
13. the difference in funding levels allowed by IFFIm frontloading allowed the industry to reach some tipping point which made it economic for new producers to remain in the market, enter the market earlier than would have otherwise been the case, or scale up their investment to meet capacity demands. [Exploration of what decisions would have been taken if the market had remained as it was prior to IFFIm versus decisions taken in the presence of IFFIm]

Theoretical economic modelling was used for the pentavalent case study, as a supplemental means of understanding incentives and decision-making of market participants at different points in time. Assumptions for the model were derived from publicly available documents (e.g. Annual report and press articles) plus industry and equity analyst interviews.

Market impact attribution challenge

In order to have market impact, product purchase from a funding source needs to be a relatively large proportion of overall demand and/or the funding source needs to exert catalytic leverage by some other means, e.g. influencing norms and standards in other markets or reputation effects which confer sales benefits to companies in other markets.[61] Even where the funding source comprises a large proportion of overall demand, other factors (e.g. a change in WHO recommendations) can be responsible for market changes. This complexity of interrelationships and influencing factors is what makes case studies and interviews an appropriate methodology for identifying attribution through for example,

[61] For example, externalities such as the latter have been seen in TB drug markets where WHO pre-qualification and purchase by UN agencies is seen to confer advantages for selection in direct government tenders.

discussion with stakeholders about what factors drove decisions and whether different decisions would have been made under counterfactual circumstances.

1. Assessment of Market Impact by Vaccine

1. Polio Investment Case

Introduction

Following eradication of wild polio virus, cessation of the routine use of oral polio vaccine (OPV) will be required in order to eliminate all remaining cases of circulating vaccine derived polioviruses or vaccine-associated paralytic poliomyelitis. Yet until eradication is certified, continued access to OPV will be needed. This is because OPV has been the vaccine of choice for controlling endemic and epidemic polio in most parts of the world; it is substantially superior to IPV in inducing intestinal mucosal immunity to decrease the spread of wild polio virus. OPV also provides long-term immunity; it can boost immunity and indirectly immunize others through spread of vaccine viruses; it is easy to administer; and it is substantially cheaper than IPV.

For over a decade, and during the timeframe of the IFFIm investment case proposal, expectations were that OPV demand would decrease in line with eradication progress. From the producers' standpoint, a three year period is needed to shut down production and clear supplies, thus the prospect of polio elimination poses a risk to producers of being left with residual vaccine bulks. The programme risk thus becomes that of producers consequently closing down production prematurely, risking sustainability of supply. The IFFIm investment case recognised that supplier productive capacity in OPV would need to be maintained as long as there is a risk of re-importation of wild polio virus into GAVI eligible countries, particularly from the countries where polio remains endemic.

Thus, the polio vaccine stockpile proposal to GAVI's IFFIm was conceived in order to avert the risk of OPV supplier exit, to preserve the benefits achieved through eradication, to manage residual circulating vaccine-derived polioviruses (cVDPVs) at the time of tOPV cessation, and to prepare for the possibility that the causal agent (wild poliovirus) could be re-introduced. Given the uncertainty of where and when outbreaks will happen after eradication, lack of a global vaccine stockpile would mean that each country could have decided to establish and maintain its own national stockpile. A global stockpile of a reasonable size would offer a more efficient alternative by pooling resources and providing insurance to all countries.[62] It would also help address the biosafety risks inherent in having multiple, national stockpiles; multiple locations of live viruses run the slight but real risk of intentional or accidental re-introduction of Sabin viruses and the generation of new cVDPVs in the post-OPV era.

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62 The Case for Cooperation in Managing and Maintaining the End of Poliomyelitis: Stockpile Needs and Coordinated OPV Cessation by Kimberly M. Thompson and Radboud J. Duintjer Tebbens, *The Medscape Journal of Medicine* 2008;10(8):190 (August 13, 2008). Available at: http://www.medscape.com/viewarticle/578396 PDF

IFFIm was an ideal fit; other donors could not finance the upfront costs needed for a stockpile of product that may never be used. In 2006, the Fund Executive Committee endorsed the polio stockpile investment case for the amount of US$ 191.28 million. IFFIm funds would be used to:

14. develop and license monovalent OPV (mOPV products (types 1, 2, and 3),
15. support larger scale evaluation of mOPV products – roll out, use before eradication to see how they work, and field trial safety using the polio surveillance system for post marketing surveillance.
16. contribute to development and purchase of the first bOPV product
17. fund OPV bulk purchase for an mOPV stockpile, which would maintain producer's interest in the market during eradication and play a central role in post-eradication risk management.

The situation evolved during 2006/2007. Eradication progress was delayed due to a combination of suboptimal strategy implementation and suboptimal effectiveness of trivalent OPV in key reservoirs (esp. northern India). By consequence of this, and programmatic evidence of the enhanced impact of mOPV1 in interrupting the last wild poliovirus reservoir in Egypt in 2005, the programme ended up purchasing and using substantially more mOPV, as part of eradication activities, than were to be purchased by the stockpile. This accelerated development of new mOPV products and production capacity investments.

The regulatory pathway which had been used for the mOPVs was able to be adapted and used for the development of the bOPV; IFFIm funded the bOPV development as well as the first purchases of bOPV.

Meanwhile, The Global Polio Eradication Initiative (GPEI) encountered a funding shortfall and 100 million USD became critical to keeping the programme afloat in GAVI-eligible countries.

GAVI 'Loan' to Polio Eradication Activities

Subsequent to approval of the original investment case, GPEI faced a large funding gap and an immediate cash flow crisis due in part to the intensification of the programme with the availability of new mOPVs and evidence of their impact in interrupting transmission in the major reservoirs of Egypt. The GPEI was unable to identify immediate donor funds to close the gap. At the suggestion and concurrence of some GAVI donors, GPEI approached GAVI for assistance. The GAVI Alliance Board consequently approved a 'temporary re-programming' of US$ 104.62 million from the Polio Stockpile investment to provide immediate, one-time financing for intensified eradication activities in 2007. The intention was for the stockpile funding to be reimbursed from resources mobilised by the GPEI through: (a) using existing, alternate funds for 50% of mOPV development and licensing work (to reprogram US$ 10.45 m), (b) using new GPEI vaccine funds to purchase mOPV1 and mOPV3 for evaluation activities (to reprogram US$10.50 m), and (c) restructuring the initial stockpile tender to cover only bulk vaccine, with a priced option for filling of finished product when the timeline for its use, and bio-containment conditions for its filling, have been finalised (to reprogram US$83.67 m). WHO and UNICEF anticipated that, once eradication is successful, the GPEI could successfully negotiate new financing for filling of the stockpile bulks with those GPEI donors who have a strong

history of support for OPV procurement. Thus it was concluded that US$ 104.62 million from the Stockpile Investment could be frontloaded to fund GPEI intensified eradication activities in 2007-2008 without compromising the key objectives of the investment case.

Market Impact

As a result of eradication delays, the programme ended up purchasing substantially more mOPV than would have otherwise been purchased by the stockpile alone or had eradication progressed as planned. Thus producers remained engaged in the tOPV market[63] and scaled up engagement on both bOPV and the mOPV products, as revealed by supplier interest (table 6 below) in the rapid development, licensure and pre-qualification of new products.

Table 6: Polio vaccine pre-qualification approvals demonstrate increased producer interest in the monovalent polio vaccine market*

	mOPV1	mOPV2	mOPV3	bOPV1&3
Panacea	03/11/2009	3 March 2011	05/10/2010	10 Dec 2009
Sanofi	08/05/2008			ongoing
GSK	29/10/2009	ongoing	05/10/2010	29 Oct 2009
Novartis	03/11/2009		05/10/2010	ongoing
BioPharma	03/11/2009			26 May 2010
Haffkine	03/11/2009			19 March 2010
Bharat	ongoing		ongoing	ongoing

* as of 16 March 2010, manufacturers were also planning to submit for licensure and prequalification at least 2 additional bOPV products, 2 additional mOPV2 products and 1 additional mOPV3 product.

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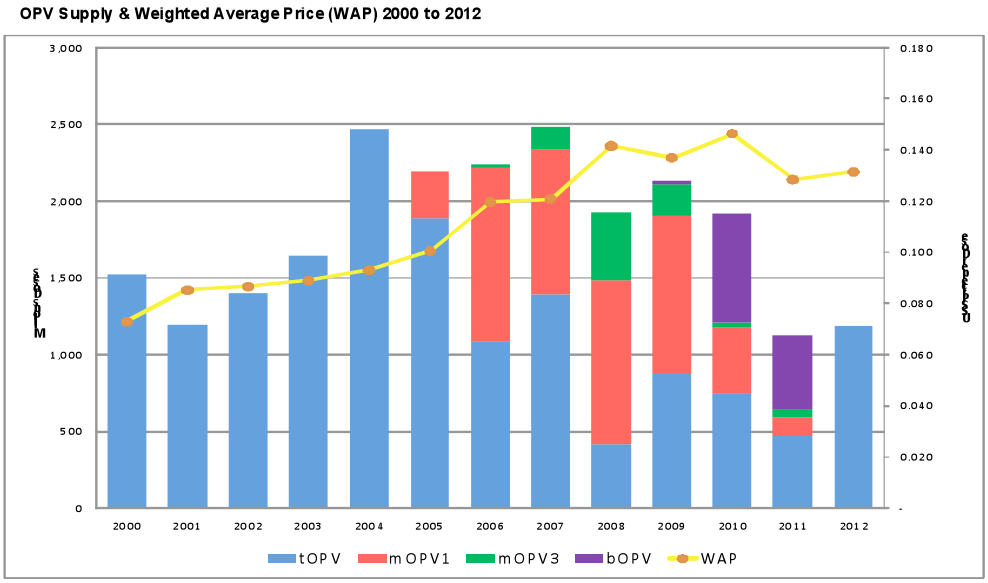
The new mOPV products were priced at or below tOPV prices. However, the OPV weighted average prices (Figure 33 below) rose during the timeframe of the IFFIm investment due to:

1. the requirement for specific and rapid outbreak responses
2. (Similarly) fragmentation of demand for multiple products, driven by the (changing) epidemiological requirements.
3. resulting inability to award high quantities to tOPV suppliers, with consequences for tOPV prices

63 Interventions which influence producers' incentives to produce mOPV have an indirect influence on their incentives to continue producing tOPV, because the bulk components of tOPV are the same as those used to produce each mOPV.

Figure 33: OPV supply and price



Slide source: UNICEF Supply Division presentation 2011

Conclusions

Clearly the early IFFIm funds that were used to develop, test and monitor use of mOPV products have contributed to enhanced security of mOPV and (indirectly) tOPV supplies, and now bOPV products, as evidenced by new supplier entry. Because of the IFFIm investment case, GPEI is ahead of expectations in terms of mOPV products, experience and evaluation, as well as their impact on wild polioviruses. Market impact attribution must be shared with the Bill and Melinda Gates Foundation, as the Foundation also funded some of the development work for the first mOPV.[64]

IFFIm funding of eradication programming - US$104 million - played a key role the intensification of the initiative. This is akin to investment in health systems strengthening in that it allows demand based on health need to materialise into actual vaccine uptake. Close co-ordination between the polio programme and industry has enabled short cycles from R&D to use of products in country programmes, and rapid uptake of new products has contributed to maintenance of supply security.

The market impact of the IFFIm funds set aside for the stockpile is already evident, even though the actual set up of the stockpile has not yet been required due to delays in achieving key eradication milestones. Having funds dedicated to this cause has enabled specific and concrete discussions with manufacturers to take place about the terms of the deal and the structure of the stockpile. These discussions would have otherwise taken

64 More recently, the Foundation has conceived a new plan to stabilise prices and maintain supplier interest. By using the Foundation's balance sheet, they will enable UNICEF to make a deal with one OPV producer for a discount in exchange for a firm volume guarantee.

place in the context of hypothetical funds from a projected source five or six years from now, which would have sent weaker signals to industry about intent and would have weakened the programmes and UNICEF's negotiating position.

The delay in awarding the stockpile in fact turned out to be an advantage, as the risks of the post-eradication era are better understood each year. This has reduced uncertainty around the relative volumes of the mOPV products needed in the stockpile as well as the biosafety conditions required for their storage, which in turn reduces price and increases the amount of bulk that can be purchased.

Knowledge of the stockpile investment has played a significant role in sustaining the supply of tOPV[65] needed to maintain eradication and routine immunization activities with this product, despite the increasingly short lifespan for OPV products. IFFIm funding was also critical to the rapid development and licensure of the new bOPV vaccine in 2009 which has been central to the striking progress in 2010 (i.e. the 95% decline in cases in Nigeria and India, the elimination of wild poliovirus from all 15 of the countries re-infected in 2009, and >85% decline in type 3 cases globally).

1. Measles Investment Case

Introduction

The original measles proposal to GAVI for IFFIm funds focused on provision of a second opportunity for measles immunization for all children in the 72 GAVI eligible countries. A total of $479m was requested to cover:

1. $322m for catch up SIAs
2. $92m for follow up SIAs
3. $16m for routine 2nd dose
4. $49m for Technical Assistance and
5. $98m for immunization services and routine measles coverage

The proposal contains a section on the impact expected from securing 5 year purchase assurances – increased production capacity assurances, "which are important given opportunity costs of producers". (pages 34, 40-42)

The original request of $479 million (46% of the total global cost) from GAVI to fully implement the strategies recommended by WHO and UNICEF over a five year period (2005-2010) was subsequently amended based upon guidance from the Alliance Board to reduce the budget within available IFFIm resources. Therefore the request in the subsequent "Investment Case 2" was scaled back to US$ 147 million and these funds would be used to carry out planned campaigns and activities outlined in the investment case for a two-year period (2006-2007).

65 The bulk components of tOPV are the same as those used to produce each mOPV therefore interventions which influence producers' incentives to produce mOPV have an indirect influence on their incentives to continue producing tOPV.

Routine second dose

Implementation of the IFFIm funded routine 2nd dose programme has been smaller in scale than was envisaged. At the time of judging the applications for routine second dose, only countries which had already achieved 90% coverage rates were accepted for a second dose through routine immunization programme.[66] Only two countries - DPR Korea (DPRK) and Vietnam - met that standard and have been approved to date for IFFIm-funded measles routine second dose. Vietnam received cash from GAVI and procured its own vaccine. DPRK received their vaccine through UNICEF and this amounted to 500,000-800,000 doses per year (2008-2011).

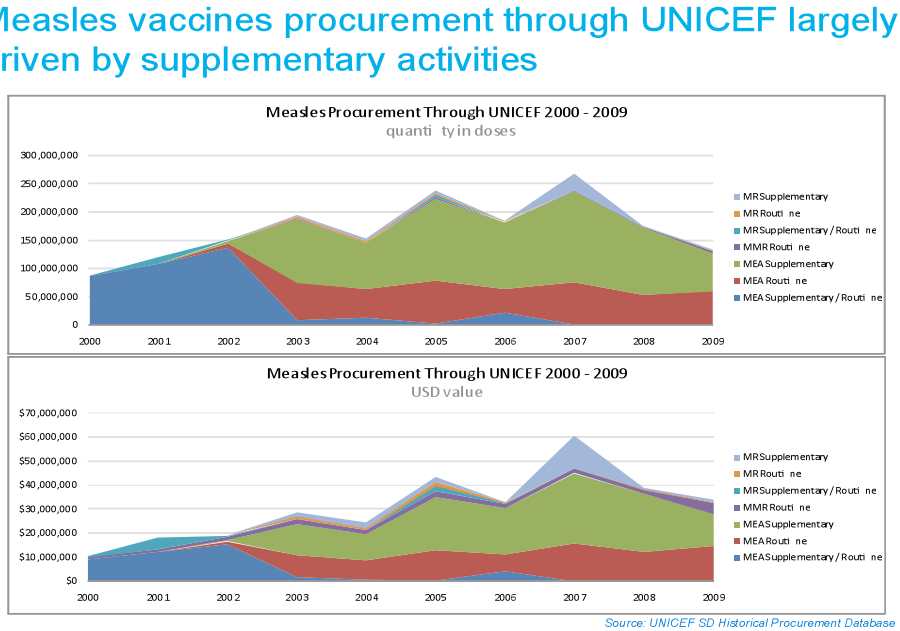
Historically UNICEF procures 150 to 200 million doses of measles per year, so the proportion of the DPRK procurement relative to the overall UNICEF procurement did not provide sufficient leverage to impact the market. A two year process ("SAGE group") was initiated to determine what should be the appropriate coverage level for initiating routine second dose and 80% was determined to be the appropriate level. This makes 17 countries now eligible and indeed 6 or 7 countries have recently applied to GAVI.

Catch up and follow up second dose

IFFIm also funded a measles second dose through catch up and follow up campaigns in 2006-2007, and this is where the more substantial volumes were procured.

66 GAVI never announced their exact criteria, but no country with less than 90 percent was accepted

Figure 34: IFFIm funding increased volumes procured in 2007 and propelled countries towards sustainable direct procurement subsequently



Slide source: UNICEF Measles Supply Update, Ninth Annual Measles Initiative Meeting, Washington DC July 26 2010

IFFIm funding was responsible for the spike in procurement in 2007; it funded approximately 170m doses out of a total of 260 doses procured of measles containing vaccines. This programme was focused on immunizing children between 1 and 15 years, in order to enhance immunity and reach children who may not have been reached during first dose campaigns. IFFIm funding was catalytic towards this time-limited effort in the sense that it paid for the expensive and initial part (catch up immunization of 1 to 15 year olds) and now countries only need to vaccinate the cohort born after every campaign. Many countries whose catch campaigns were funded by IFFIm, including Pakistan and Bangladesh, are now moving towards a two-dose schedule and can fund this internally; IFFIm therefore helped them transition to a sustainable programme and this also explains the fall off in measles demand through UNICEF in 2008 – a result of highly populated countries like Pakistan moving to procure measles vaccine on their own. Indonesia is paying for their own follow up campaigns and second dose in routine. Bangladesh pays for part of the vaccines for the follow up campaigns and is currently requesting GAVI funds to introduce a second dose in routine.

Conclusions

The overall measles vaccine market is approximately 600 million doses per year. During the period 2002-2008, UNICEF procured between 150 and 200 million doses per year of measles containing vaccines. The remaining 400 million is mostly India and China. IFFIm funds helped to pay for the additional doses required to undertake catch up campaigns, so there was a direct impact of raising measles vaccine volumes needed for immunization. Indirectly, these campaigns [and therefore IFFIm funding] raised the volumes of vaccine procured subsequently, by catalysing the introduction of the second dose in targeted

countries and in other parts of the world - informants report that India and China introduced a catch up second dose after seeing the success in IFFIm funded countries.

Although the measles vaccine market is mature and prices are already low, IFFIm raised overall measles vaccine demand directly through catch up campaigns and indirectly, through catalysing the growth of the second dose market. Stakeholders believe this increased demand has contributed to preventing supplier exit.

1. Maternal & Neonatal Tetanus Elimination Investment Case

The revised proposal for the MNT investment case requested a budget of US$ 61.62 million funding. Between 2007 and 2010, 45 million was spent on vaccines and operational costs, amounting to 1.1% of IFFIm funds. The proposed investment was intended to "rapidly achieve and sustain MNT elimination in 36 Vaccine Fund-eligible countries."

The rationale for the MNT project was not based on market impact, but solely on frontloaded health impact "The rationale is that front-loading for TT SIAs in 2006 can be spent within a year to prevent MNT deaths immediately and over at least the next 25 years; that funding is the main obstacle; and that innovative strategies to reach on a permanent basis still unreached populations with immunization services and other health interventions are needed." There was no market impact intent stated in relation to the TT vaccine in the proposal, only an expression that the project "will not create any issues for the supply of TT or related injection supplies, as the additional requirements can be met with the available supply. UNICEF has secured offers to provision of 200 million TT doses in 2006, which should be adequate to cover the additional requirement as well as regular demand."

2. Support for Pentavalent Vaccine

Introduction

The pentavalent vaccine protects against diphtheria, tetanus, pertussis, Haemophilus influenzae type b (Hib), and hepatitis B. Demand for this combination vaccine is almost entirely in LMIC markets. There are 63 countries with GAVI support but demand in the 7 without GAVI support are large. Approximately 70% of the pentavalent market is purchased by UNICEF with GAVI funds and 30% is comprised of purchases from LMIC which are not GAVI eligible.

IFFIm's share of the GAVI financed market was as follows:

Table 7: IFFIm share of total GAVI expenditure on pentavalent vaccine purchase

	IFFIm spend (million USD)	Total GAVI spend (million USD)	IFFIm percentage of GAVI spend
2006	28	81	35%
2007	94	147	64%
2008	200	361	55%
2009	222	281	79%

2010	251	343	72%
Average	**61%**		

Source: GAVI expenditure figures

Therefore we can conclude not only that GAVI funding overall comprises a large enough proportion of the overall market to be able to exert leverage but also a large portion of the leverage comes from IFFIm money. Thus we can conclude that any market changes observed are likely to be largely attributable to GAVI and to IFFIm specifically.

The expectation that IFFIm would fund the pentavalent vaccine was clearly stated in the IFFIm proposal to the GAVI Board. As previous elaborated, "substantial front-loading" and "advance contracting" were the means by which it was expected that "acceleration of market forces" would be achieved.

To assess market impact on the pentavalent vaccine, two principle lines of enquiry were followed:

6. whether the difference in funding levels allowed by IFFIm frontloading allowed the industry to reach some tipping point which made it economic for new producers to enter the market earlier than would have otherwise been the case. [Exploration of what decisions would have been taken if the market had remained at 23 million doses of 2005 versus 96 million doses by 2010, made possible with IFFIm funding]
7. whether the nature of IFFIm funding (being predictable - legally binding - and frontloaded) enabled UNICEF to interact or contract with industry in some way other than they would have been able to do otherwise (e.g. contracts being longer term, more legally binding or committing to higher volumes) and in ways that produced economic benefits or reduction in supply risk. [Exploration of contracting modalities pre and post IFFIm]

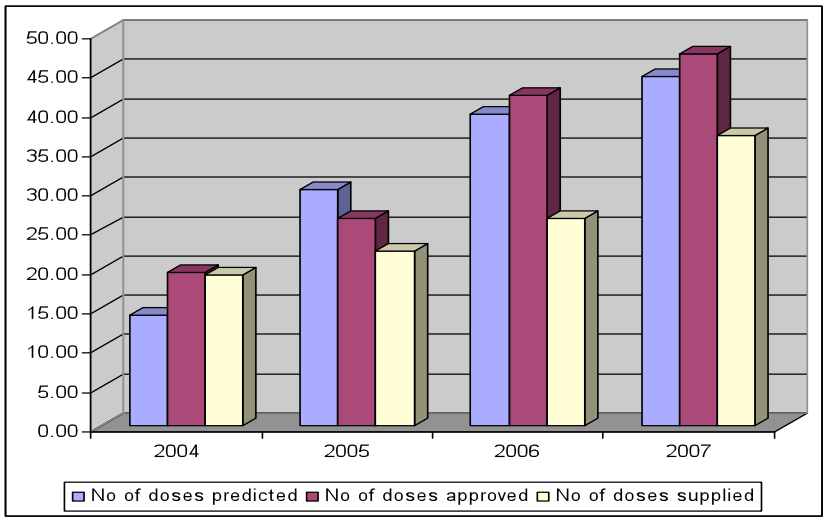
1. Did IFFIm enable the market to reach a tipping point of volume sufficient to lure in new producers?

Pre-IFFIm forecasted expectations with regard to the market and demand

In 2003, a vaccine demand forecast was developed through collaboration between WHO, UNICEF, The Vaccine Fund and the GAVI Secretariat, with the objectives of providing a long-term (12 years) signal to vaccine manufacturers about the expected trends for the demand of Hib-containing vaccines, monitoring the uptake and availability of those vaccines in order to ensure security of supply, and providing the Vaccine Fund with information to set resource mobilization targets. A Delphi survey was conducted with international experts in immunization as a major input to the forecast. The experts were asked to predict two key parameters of vaccine demand - the year of introduction in each country and the maximum coverage that each country's immunization program could reach. – in order to construct a baseline vaccine demand scenario for GAVI-eligible countries.

Zuber et al (Vaccine 2009) compare the forecasts with actual procurement and draw forecasting lessons learned. The data for the figure below is taken from this paper.

Figure 35: Predicted vs. actual uptake of pentavalent vaccine (million doses)



Slide data source: Table 3 from Zuber et al, Forecasting demand for Hib-containing vaccine in the world's poorest countries: A 4-year prospective experience Vaccine 27(2009) 410-415

As can be seen from Figure 35, the Delphi panel provided an overly optimistic forecast with respect to the pace at which countries would introduce Hib-containing vaccines. Optimistic forecasting by health and immunization experts is not uncommon during the introductory phase of a new vaccine and manufacturers are well aware of this and tend to produce to the lowest range of expected demand forecasts during the introductory period of a new vaccine.[67] The economic rationale for limiting production capacity investments in such a situation is elaborated in Barder and Yeh 2006[68].

The relevant point to draw from this forecasting exercise is that of industry signalling prior to IFFIm approval. The WHO demand forecast was communicated to industry and this forecast would have been one of many inputs into industry's own estimates of demand forecasts and consequent production planning. But importantly, the WHO forecast was based primarily on health need and not on expected financing.[69]

UNICEF's 2003 expectations of the market were similar to WHO's for the near term but the expectations for 2010 demand were approximately 55 million doses, which is only half

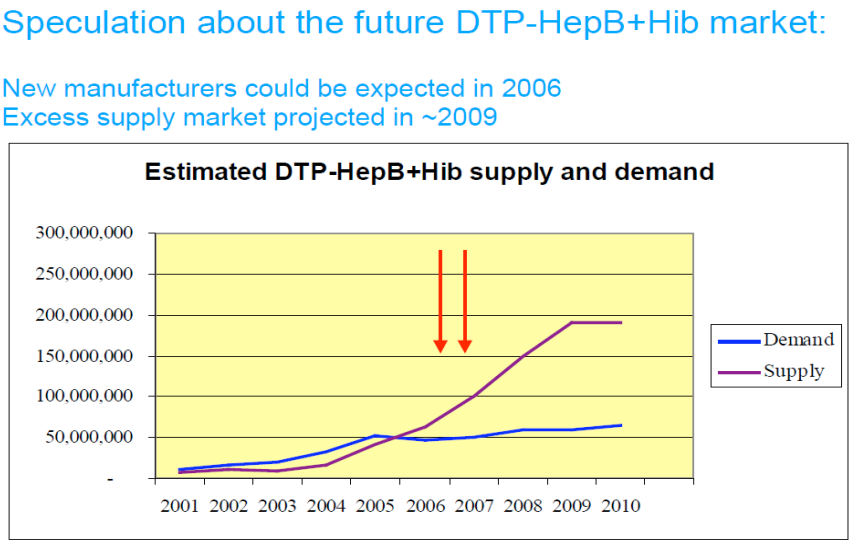
[67] Once vaccine use has been established into immunization programmes, historical routine data allow for a much more reliable forecasting. This phenomenon has been seen in other donor-funded product sectors, e.g. constrained production of artemether lumefantrine production by Novartis in 2003/2004, during the period when Global Fund finance was available but country decision making on uptake was the rate-limiting factor.

[68] The paper illustrates the option value of waiting for better (but never complete) information before making capacity production increases. It also uses a game-theoretic approach to model bargaining power between producer and purchaser under different scenarios of capacity investment. Owen Barder and Ethan Yeh, Centre for Global Development Working Paper No 80, January 2006. "The Costs and Benefits of Front-Loading and Predictability of Immunization"

[69] The forecasting exercise was attributed to helping the Vaccine Fund make the case for additional resource mobilisation.

of what the eventual market turned out to be with the incremental funding provided by IFFIm. [Slide below taken from a 2003 meeting.]

Figure 36: UNICEF predicted evolution of the pentavalent market before knowledge of IFFIm funding (showing levelling off at ~55 million doses by 2010)



Slide source: "UNICEF, the Vaccine Market, and Developments in Vaccine Supply", 8 December, 2003, Geneva (presentation found online)

Signalling of GAVI communications about IFFIm funding

In the October 2004 GAVI Board minutes, there was a description of 3 scenarios for levels of funding IFFIm would raise $4bn, $6bn and $8bn over 10 years. All of the scenarios included significant support for pentavalent DTP-hepB-Hib.

The decision rules laid down for how the money would be spent were as follows:

1. focussed on poorest countries (GNI below $1,000 p.c.)
2. supporting new and underused vaccines,
3. strengthening immunization services
4. investments targeted to areas where costs reduce over time
    1. advance contracting for priority vaccines to increase supply and promote affordability
    2. expanded offering of vaccines for herd immunity
5. needs determined at national level and an application process

In GAVI Board minutes from October 2004, it was stated that the money would be prioritised towards Hib, Hep B, rotavirus, pneumococcus, meningococcus A and Japanese encephalitis. The same meeting concluded that 'in the near term IFFIm funds would be used to stimulate increased manufacturing capacity for the combination DTP-hepB and DTP-hepB-Hib vaccines'.

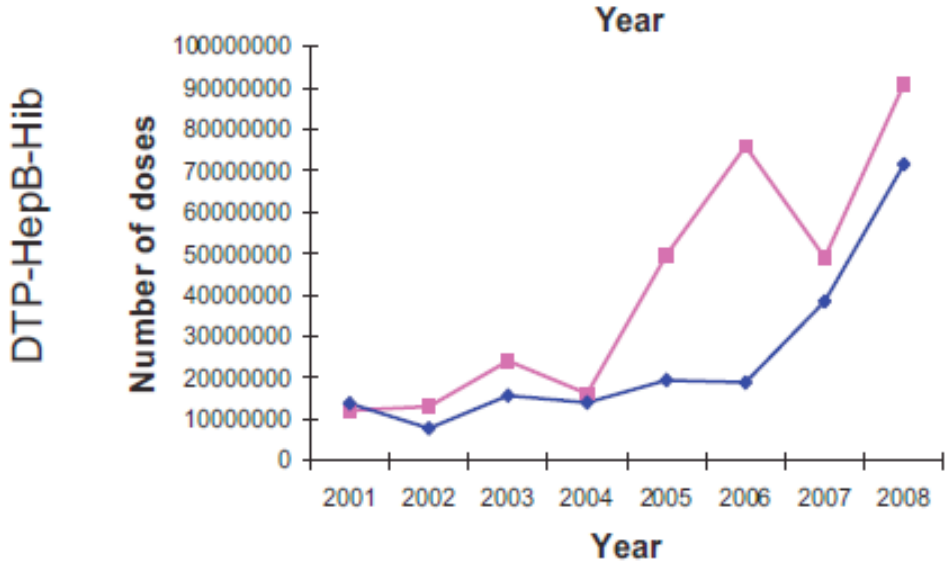
Supply and demand before and after IFFIm introduction

GSK was the sole supplier of the pentavalent vaccine Tritanrix-Hib from 2000-2006. This vaccine had already been developed and was available before the start of GAVI. GSK pricing levels remained consistently around $3.5 per dose during the period of their monopoly (2000-2006) and there were capacity limitations during this period as well which delayed introduction in several countries and made other countries hesitant to introduce.[70]

The number of doses offered to, and those supplied to, UNICEF are shown below for the period 2001-2008. Until 2004, there was a cyclical problem of constrained supply and countries' reluctance to introduce an expensive product only funded for five years and which was in short supply. After several years of unclear WHO recommendations, doubts about the long-term financing and supply constraints, few additional countries had applied for Hib vaccine introduction. Supply constraints eased off by 2005, but it would be another two years before acceleration of uptake materialized. (Patrick Zuber, personal communication). When it finally became clear to countries that more suppliers were coming and that GAVI would fund pentavalent for ten instead of five years (announced around the same timeframe as IFFIm was approved), in conjunction with a stronger global recommendation by WHO for Hib vaccine in 2006, demand finally started to accelerate.

[70] Several countries wanted to introduce pentavalent in 2004 but GSK was not able to supply the quantities needed, so introduction was delayed. Subsequently, there were regulatory documentation problems which further constrained supply.

Figure 37: Pentavalent doses offered (pink) and supplied (blue)



Slide source: Zuber et al. Sustaining GAVI-supported vaccine introductions in resource-poor countries. Vaccine 2011. Article in press/author's copy

By 2006, Crucell became pre-qualified with a fully liquid pentavalent vaccine, Quinvaxem. The fully liquid version did not require reconstitution, therefore an additional step in the administration process was eliminated, reducing complexity of vaccine management with no diluent. The market for pentavalent at this stage was still considered to be fragile with some insecurity of supply, although three products were then WHO pre-qualified from two manufacturers. The weighted average price remained at similar levels to the 2004-2006 period: USD 3.62 – 3.55 for 2007-2009. (Source: Hib and HepB Procurement Reference Group, Report to the Board, March 2007) It is clear that real competition had not yet set in, as these two products had differences and therefore were not interchangeable.

By 2008, Shantha Biotechnics broke the duopoly of Crucell and GSK with its pentavalent vaccine.[71] Then Panacea Biotech entered the market in 2008 with "EasyFive". Serum Institute of India's two dose PentaLyo has been pre-qualified since the third quarter if 2010. There are believed to be 5 more pentavalent vaccines in development.

The importance of GAVI funded UNICEF purchases varies across different companies. We know that approximately 75% of Crucell's pentavalent production is purchased by GAVI, and by extension IFFIm. (Ref: equity analysts) The percentages are probably similar for the other producers, though we can expect that Indian producers will over time sell more production to Indian and Indonesian private and government markets.

Purchases increased from 18 million doses in 2005 to approximately 96 million in 2010 [as compared to pre-IFFIm UNICEF expectations of 55 million doses by 2010, as elaborated previously]. Demand is expected to stabilise at 200m doses by 2016.

[71] Shantha had to stop production in Feb 2010 due to a supply failure and are expected to regain WHO Pre-qualification in 2013.

Shantha reported that their decision to invest in the pentavalent market was taken in 2002 and Crucell reports that their decision was made even prior to that. This was long before IFFIm proposals were being considered. So clearly in the counterfactual situation without IFFIm – the "pull" of GAVI finance plus expected demand based on health burden, and lack of capacity from the existing producer - was enough to lure in Crucell and Shantha. Crucell does not sell its vaccine in the U.S. or Europe, and believes that it will not compete successfully against Indian firms in eventual Indian tenders, thus the attraction was purely the GAVI market.

Shantha acknowledges that investing in this product back in 2002 was a bit risky, given the nascent stage of the GAVI partnership and the insecurity of the funding materialising. However, management's worst case scenario of selling only to the eventual Indian market hedged the risk somewhat.

Several industry respondents held the view that news of IFFIm funding made WHO estimates based on health need more credible and spurred producers to ramp up investment and capacity. If IFFIm had not been approved, industry informants opined that they would have discounted WHO demand estimates even further' limiting their speed to market and/or their capacity investments. For Indian firms, this would have made the risks of investing in this market higher and would have made them more dependent on the Indian market materialising.[72]

Pentavalent vaccine prices only started to decline in 2008. According to GAVI communications, "This price drop is no accident, but rather the result of a strategy to leverage the purchasing power of hundreds of millions of people…. GAVI's business model is based on the expectation that rising demand for immunisation in developing countries induces more companies to produce vaccines, thus creating competition and driving prices down." Indeed, whereas in 2001, there was only one company producing the pentavalent vaccine, now there are four. Two are Indian companies, whose products came on the market in 2008. As of Nov 2010, the WAP for the liquid single dose price is $2.94 and WAP for the 10 dose price is $1.75. These prices exceed the reductions which had been expected/predicted by some donors although there were no specific price expectation targets in the IFFIm proposal.

Experts opine that the effect of lower prices for pentavalent vaccine extends beyond the core beneficiaries of GAVI assistance, which are the world's 72 poorest countries. For example, many middle-income countries are viewed as more likely to adopt the pentavalent vaccine now that its price is headed below US$3 for the poorest countries

[72] Indian manufacturers stated that they would have been more dependent on the Indian domestic market materialising in the counterfactual [without IFFIm] scenario and they believed India would be much slower versus other countries to take up this product.

Illustrative comparison of producer economics with and without IFFIm

An economic model was constructed to illustrate how financing commitments provided by IFFIm altered the supply landscape through changing the incentives for new players to enter the market. Market information was obtained from the Crucell annual reports, equity analyst, industry interviews and GAVI expenditure data[73] and used to model realistic snapshots of the industry at various points in time. The first snapshot captured industry economics 2005, when the market was supported by GAVI funding and serviced by a monopoly supplier, GSK. This resulted in high prices and constrained supply. Demand in excess of supply and the potential market size justified a market entry by a second producer, Crucell. This happened in 2006 "Situation 2" and the decisions to enter this market were made before IFFIm funding was announced. The resulting duopoly of supply was not likely to change as quickly as it did, had the market remained at the pre-IFFIm size, as illustrated in the 2010 "Situation 3" of the "Without IFFIm" scenario. Introduction of IFFIm funding in 2006 led to a substantial increase in funding assurance, lending additional credibility to the health demand projections published by WHO. GSK had previously experienced supply difficulties at their Hungary plant, and Crucell experienced difficulties at their Korean plant[74], illustrating the importance of assuring supply from multiple producers not only as a strategy for competition-induced price reduction but also as a strategy for supply security. Indeed, it has only been since the emergence of Indian suppliers that real competition has emerged and prices have come down. "Situation Final" of the "With IFFIm" case illustrates a theoretical but likely scenario for 2013/2014, whereby at least 5 suppliers will service this market, demand will have reached its mature level, and a fifth supplier is incentivised to enter the market.[75] "Situation Final" of the "Without IFFIm" case illustrates the problem a fifth supplier would likely have in making a return on this smaller market.

The model demonstrates clearly that without IFFIm funding, the GAVI market would not have been able to support more than two suppliers by 2010. Provision of additional funding and signalling about how it will be spent has created sufficient incremental demand to justify entry costs (i.e. initial capital investment) for the new market entrants by 2008. Thus, through committing additional funds, clear communication about how those funds will spent and how they will change the effective market size, and through its ability to allocate market demand to individual suppliers, IFFIm has facilitated the creation of an efficient and competitive marketplace for provision of pentavalent vaccines. Certainly further market expansion is essential for an increasing number of producers to still earn a return on investment. The fact that new companies are still looking to enter the market suggests returns are still available through a combination of GAVI and future Indian and Indonesia private and government markets, which are expected to materialise in the next few years.

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[73] GAVI expenditure data was used to calculate market share, hence making the detailed assumptions in the model confidential. It was consequently necessary to extract the details of the model from this report.

[74] Subsequently Shantha also experienced production problems

[75] Returns are low given assumptions in the model however the supplier may be factoring in non-GAVI demand from India and Indonesia, which is expected to be substantial once it comes online.

Conclusions

It is clear that IFFIm funding changed the market size substantially and it is no coincidence that supply dynamics changed alongside. Other factors were believed to be influential in increasing demand and market size as well, e.g. the 2006 WHO SAGE recommendation and entry of new suppliers. IFFIm strengthened the signal and gave additional assurance. It was one of the elements that gave confidence to countries to take up the vaccine and to producers to invest.

Price reductions have only come about since the Indian suppliers have entered the market, so clearly the incremental demand that kept their attention focused on speedy product development and market entry and reduced their entry risks, was essential.

It is possible that IFFIm's impact could have been stronger if the additional financing had come with explicit communication or rules about how the money would be allocated, e.g. which products would be purchased, in what quantities and over what timeframe. The GAVI Board minutes were rather vague in this regard and by listing a wide range of possible aggregate financing amounts, along with a long list of priority expenditure targets (including some very expensive categories of vaccine), this might have reduced the incentive impact to some degree.

1. Did IFFIm enable a change in the contracting relationship with industry?

The intent and expectations on this subject, as stated in various documents produced at IFFIm's inception

As noted previously, the original IFFIm proposal to the GAVI Board included expectations that the frontloaded and predictable funding offered by IFFIm would be used not only to accelerate market maturity through volume increases but also through the use of "advance contracting", defined as "agreeing on predictable price and/or volume flows for medium-term purchase." It was expected that, "The IFFIm will provide committed financial resources that will support long-term procurement contracts within the existing regulatory and procurement frameworks of WHO and UNICEF."

The pentavalent vaccine was spoken of specifically in this regard:

> "The experience of GAVI has highlighted that predictable and sustainable funding for the purchase of vaccines for use in the poorest countries stimulates demand for the vaccine, which can encourage vaccine producers to serve this market. As seen in Figure 2, more producers will soon be making DTP-hepB vaccine. Although this competition has not yet led to a significant reduction in the market price, producers are committed to ensuring a substantial price reduction over the next 10 years. It is hoped that the use of advance contracts will further accelerate the availability of and price reductions for this vaccine and for the pentavalent DTP-hepB-Hib vaccine, which is even more expensive."

The language used in the IFFIm proposal "advance contracts" and "long term procurement contracts" is quite vague. Was there an expectation that the more secure

financing enabled by IFFIm would be used to enable UNICEF to strengthen the "stickiness"[76] of their contracts, for example committing to buy a pre-agreed volume at a pre-agreed price from selected manufacturers regardless of whether demand materialises? UNICEF can only enter into such "firm commitment" contracts if they have the funds in a dedicated account prior. In accordance with UNICEF financial rules and regulations, UNICEF will not take any risks. Or, alternatively was there an expectation that UNICEF would continue with their normal form of contracting – also an advance contracting method - whereby "awards" for certain quantities are made to selected producers in procurement rounds covering a multi-year period (3 year in the case of pentavalent). Although technically these awards communicate only an *intent* (not a guarantee) to buy, pentavalent producers reportedly find UNICEF forecasts and awards to be very credible, especially as a market matures.

The types of contracts UNICEF entered into pre and post IFFIm for the pentavalent vaccine

UNICEF's usual procurement method involves longer duration contracts, with a higher degree of communication and commitment than one would have in other markets. This is appropriate given the bilateral dependence of producers and UNICEF in many of the vaccine markets – the need for supply security and the longer term (sunk fixed cost), and often relationship-specific investments made by vaccine producers. In the UNICEF "Vaccine Security" strategy accepted by UNICEF Executive Board January, 2002, it was decided that UNICEF would prioritise vaccine security through procuring from multiple suppliers for each vaccine presentation, from manufacturers in developing countries and industrialized countries, paying a price that is affordable to governments and donors and a price that reasonably covers manufacturers' minimum requirements. Further, UNICEF committed to providing manufacturers with accurate and long-term forecasts and required manufacturers to provide UNICEF with accurate and long-term production plans. It was decided that providing grants to manufacturers as a method of obtaining capacity increases would not be an appropriate role for UNICEF as a public buyer.

UNICEF's typical awards are "good faith arrangements" whereby UNICEF communicates intention to buy specific quantities to a range of manufacturers, in the interest of supply security. The quantities awarded are never for the full amount of anticipated demand as UNICEF leaves some room for new entrants to capture market share upon entry.

The language of "advanced contracts" and "long term procurement contracts" in the IFFIm and DFID proposals was interpreted by some to imply that the enhanced predictability of IFFIm finance relative to grants would be leveraged to increase the "stickiness" (e.g. contract duration, volume or legal commitment) of contracts with industry relative to the status quo. One analysis opined that bilateral contracts with one or two pentavalent producers could have enabled earlier price reductions and that the benefits from IFFIm funding would mainly arise through the use of such firm contracts. The economic argument for this was elegantly conveyed in a CGD working paper (Barder and Yeh 2006)

[76] The "stickiness" of contracts in economics refers to situations where the contract terms may be more tightly binding on both parties, for example by being of a longer duration, for higher volumes, more legally binding etc.

but the message came too late. As acknowledged in the paper (e.g. page 9) the benefits of bilateral firm contracting are "likely mainly for those vaccines for which there are not yet a large number of competing manufacturers….". By the time IFFIm funding arrived, there were already two suppliers as well as other suppliers in the process of pre-qualification, which placed UNICEF in a stronger negotiating position. So tight contracting (e.g. legally binding commitment to buy large volumes over a long duration) at that stage with the two existing producers would have likely have resulted in more costs (to new supplier entry and price reduction from competition) than benefits.

UNICEF has always done, and continues to do, three year tenders for the pentavalent vaccine, so the emergence of IFFIm funding did not change the contract duration. However, IFFIm money was used to enable a firm commitment to buy (i.e. a legal commitment to buy a certain volume regardless of whether demand materialised) from Crucell in the 2006 tender. According to the former head of the pentavalent PRG during the 2006 tender, a specific investigation into whether IFFIm money held by the World Bank would qualify as guaranteed, secure funding with which to enable UNICEF to enter into such contracts found that this was, indeed, the case. Accordingly, the following awards were made for that tender, and "the award for DTP-HepB-Hib (1 dose vials) was covered by a firm contract, with financial backing from the GAVI Fund."

Table 8: Awards Related to 2006 Pentavalent Tender

Excerpt from the Hib and HepB Procurement Reference Group, Report to the Board, March 2007. (Available online):				
DTP-HepB/Hib (1&2 dose vials)	**Previous award 2006**	**2007 (Q2-Q4)**	**2008**	**2009**
Updated demand quantity (doses)		28,164,684	80,914,822	134,977,752
No. of suppliers awarded	1	2	2	2
Total Award Quantity (doses)	37,950,000	28,161,682	40,000,000	41,000,000
Award DTP-HepB+Hib, 2 dose vial (doses)	37,950,000	14,761,682	20,000,000	20,500,000
Award DTP-HepB-Hib, 1 dose vial (doses)	N/A	13,400,000	20,000,000	20,500,000
Weighted average price	$3.6000	$3.6190	$3.5500	$3.5500

These awards were for a small proportion of anticipated demand, projected to be a maximum of 105 million doses in 2008 and a maximum of 137 million doses for 2009. The rationale for the amount committed was as follows: "The pipeline for this vaccine is promising with good prospects for further market maturation as a number of additional manufacturers are likely to become WHO pre-qualified during the award period, which would lead to a healthier market and likely price reductions. As such, quantities have been left un-awarded to allow for the entry of new manufacturers in order to meet the objectives of the RFP." (Source: Hib and HepB Procurement Reference Group, Report to the Board, March 2007. Available online)

Crucell informants opined that the proportion of demand which was pre-committed through firm volume contacting by UNICEF in the 2007-2009 procurement round was so small relative to overall demand that there was limited economic effect. UNICEF disagrees; the firm commitment represented 50% of the volume of the award and for this, UNICEF was able to access a lower price than the initial price quoted. The negotiated price was also valid for all the quantities purchased during the period, including the increased awarded quantities during the period, not just the amount agreed to in the firm commitment. UNICEF states that the WAP would have been higher in the absence of a firm contract with Crucell.

For the 2010-2012 contracting period, UNICEF has reverted to its more standard procedure of making awards based on *intent* to buy pre-specified quantities at pre-specified prices. UNICEF is not obligated under these long term agreements (LTAs) to purchase any minimum quantity of from each supplier. Sales to UNICEF are made pursuant to individual purchase orders. Now that pentavalent vaccine use has been established into immunization programmes, historical routine data allow for much more reliable forecasting and the risks of UNICEF failing to purchase according to intent are limited.

Was such firm contracting ever used prior to IFFIm funding (representing a form of counterfactual)? Yes, in fact UNICEF had also entered into a firm commitment to buy from GSK in the 2004-2006 contracting period, with the objective to secure production capacity. A letter of guarantee was issued from the Vaccine Fund to UNICEF to enable this transaction. So clearly there were ways of achieving tight bilateral contracting in the absence of IFFIm, and the benefits and appropriate timing for such commitments would have been pre-IFFIm, during the monopoly supply years.

Conclusions

The IFFIm proposal to the GAVI Board as well as individual donor's proposals conveyed clear assumptions that IFFIm financing would bring down prices but there was no clear articulation of the mechanism by which this would be achieved. There was at least one analysis suggesting that IFFIm would only achieve price decreases through tight bilateral firm contracting. However, UNICEF clearly favours the more competitive supply model, not only for supply security but under the assumption that competition lowers prices. It is perhaps easier with hindsight to see that the ideal timing for tight bilateral contracting was already past its prime by the time IFFIm funding was available. Therefore UNICEF's strategy to balance the components of value in terms of health impact (innovative product presentation, secure supply) with those of cost (price) was the right one in terms of a comprehensive view of value for money. Bilateral firm contracting at the stage when IFFIm financing kicked in would have been less likely to produce static efficiency benefits of price reduction[77] and would have risked dynamic efficiency benefits which were about to emerge with the market entry of new Indian suppliers.

[77] By 2007, supply constraints were resolved so price reduction would have been the only possible objective of bilateral contracting

6. Use of IFFIm Funding and Health Impact

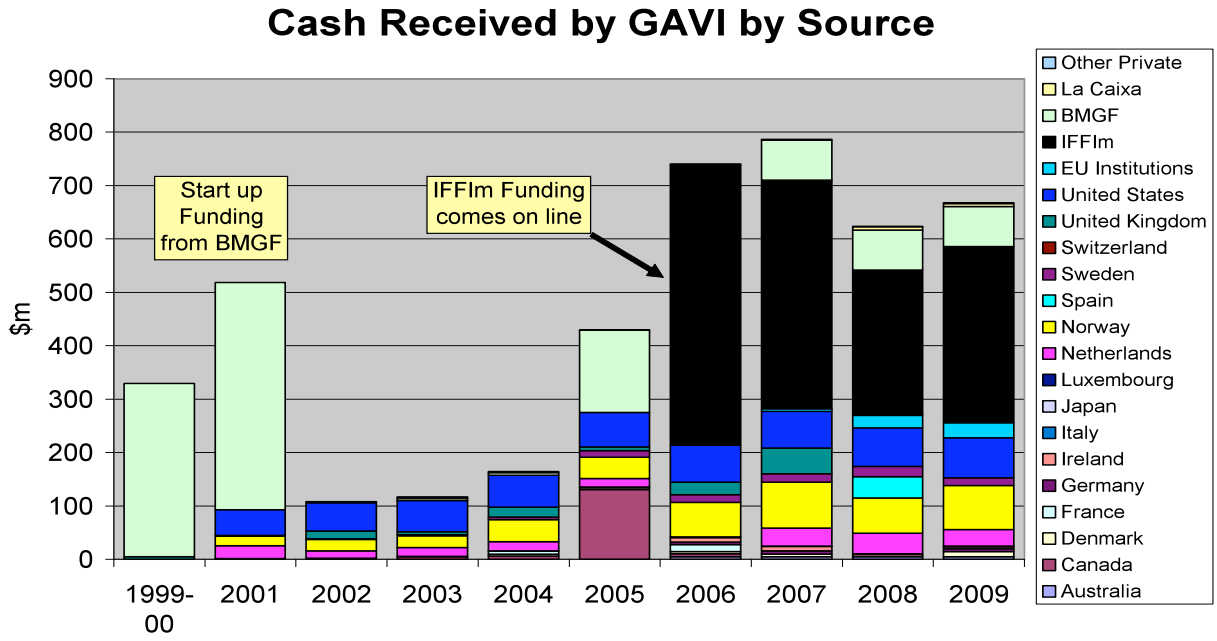
1. Overall Impact of IFFIm on GAVI Finances

IFFIm has had a huge impact on GAVI's spending power. Since 2006 IFFIm has accounted for some 64.0% of GAVI spend and has accounted for 49.2% of total GAVI spend since its inception. GAVI's income year by year is shown in **Figure 38**.

IFFIm has enabled GAVI to move from being something of a niche player – spending less than $200m a year – towards what GAVI senior management consider its ideal "cruising altitude" of over $1bn per annum.

Figure 38

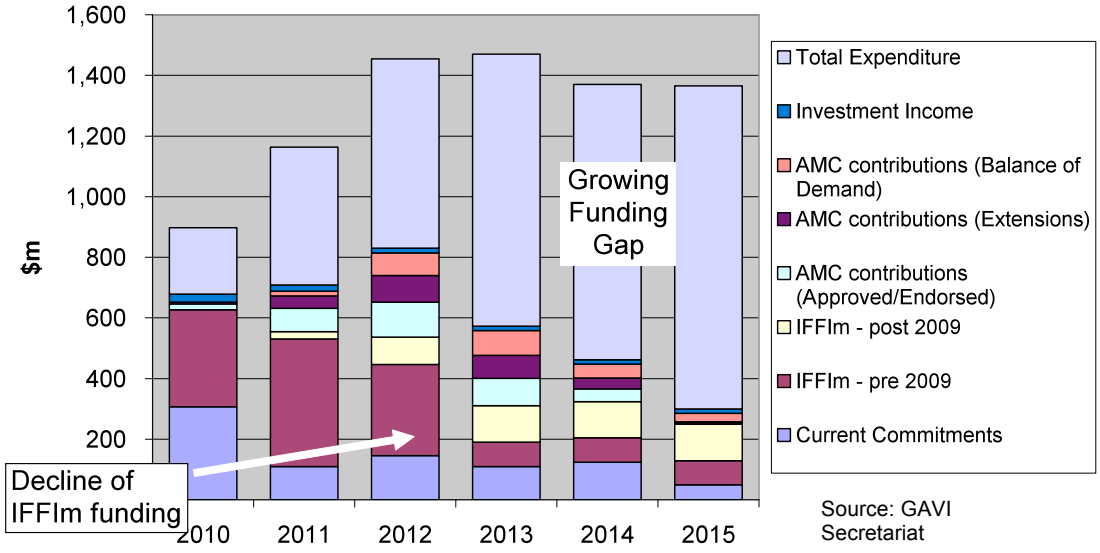
Source: GAVI Secretariat



However, investment - based on current IFFIm pledges – will start to decline from 2012 just as GAVI is embarking on a very ambitious expansion programme. Figure 39 below - based on data presented at the November 2010 Kigali Board meeting sets out current commitments to GAVI against projected spending. Commitments will, no doubt, increase over time as donors make new commitments - especially those who tend to do so only on an annual basis. Nevertheless, this does re-emphasise concerns about sustainability - for GAVI specifically but also for the IFFIm model.

Figure 39

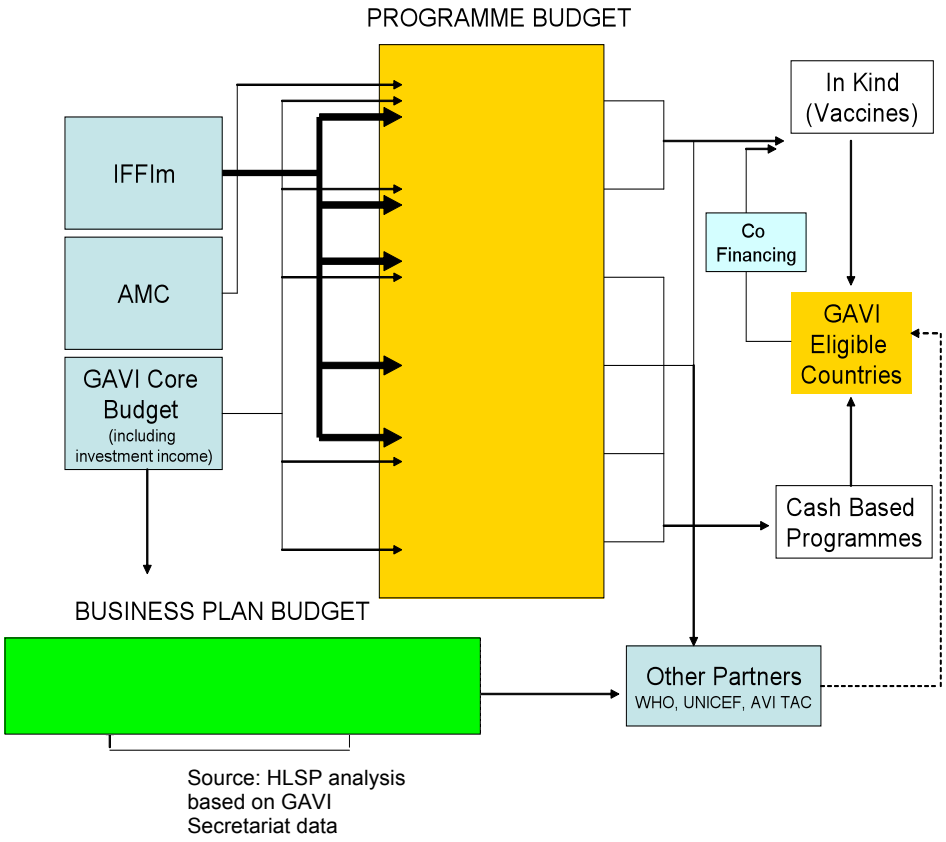
GAVI - Expected Income and Expenditure to 2015



2. How has IFFIm money been spent?

GAVI spends IFFIm funds through a number of channels as illustrated in figure 40 below. Most of the funding is provided in kind through the provision of vaccines and associated materials (typically procured by UNICEF) which a small, but increasing, share of costs being met by countries themselves under a co financing policy. A small share of support is provided through cash based programmes. Support is provided through six main programme areas. IFFIm has made contributions to 5 of the 6 programmes though the vast majority has gone through NVS (new and underused vaccines) and through a series of five IFFIm-dependent investment cases. IFFIm funds do not contribute to GAVI's own running costs (IFFIm includes the estimated costs of GAVI services rendered in its accounts but GAVI treats it as a donation- see **section 4**).

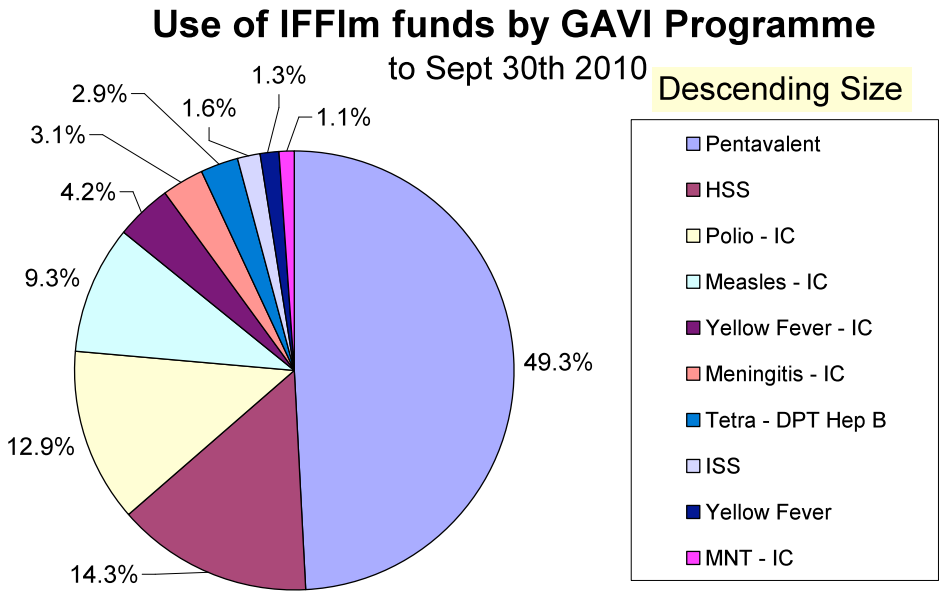
Figure 40: Flow of Funds



Source: HLSP analysis based on GAVI Secretariat data

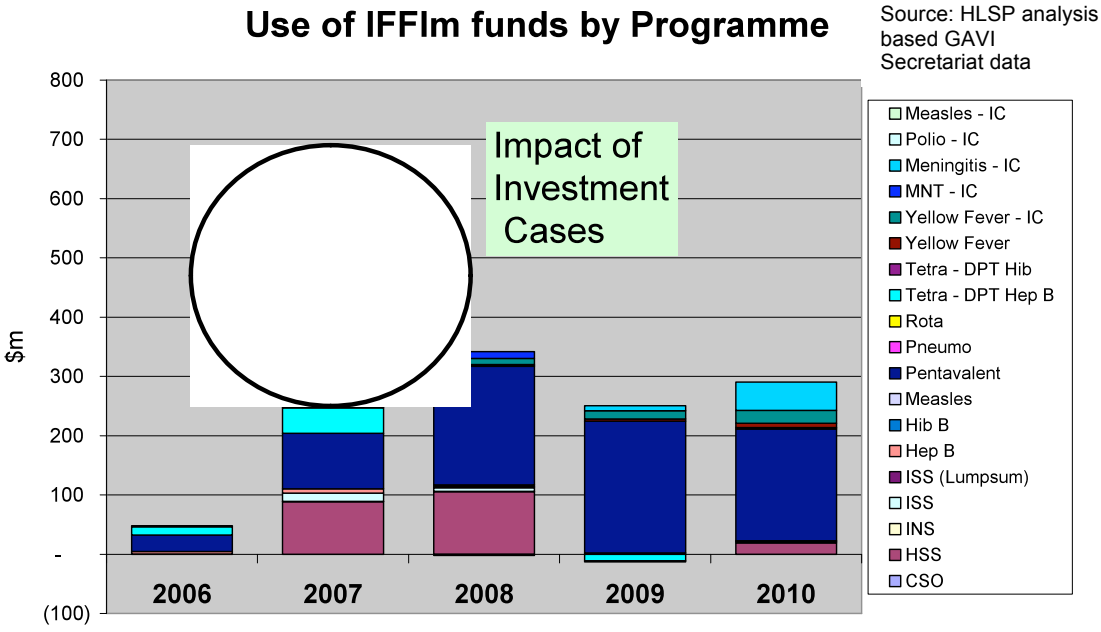
As shown in figure 41 of the total $1.51bn spent using IFFIm funds by the end of September 2010 almost a half had gone to purchase pentavalent vaccine. Just under 15% had been spent on health systems strengthening with a further ~33% spent on the five investment cases

Figure 41



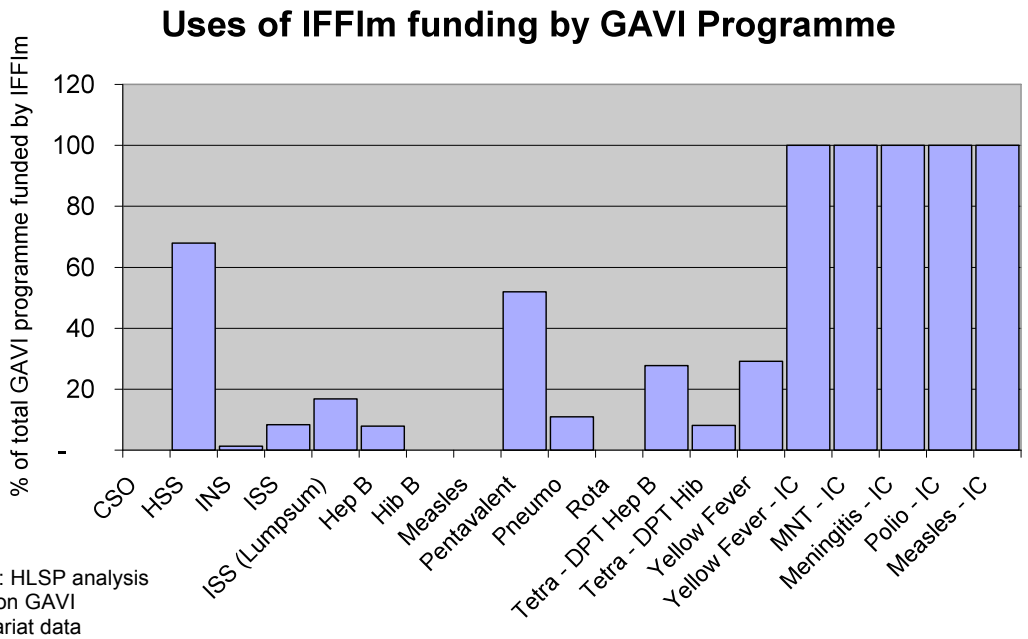
As shown in figure 42 IFFIm spending was heavily frontloaded and included significant one off investments in the measles and polio investment cases. These investment cases were, to a degree, “generated” to utilise the funds raised through the initial $1bn bond issuance. Since 2008 spending has been concentrated on increasing access to the pentavalent vaccine which has accounted for 71% of total IFFIm spending between the beginning of 2008 and the end of September 2010.

Figure 42



As shown in figure 43 below IFFIm funds were used to support some existing programmes *alongside* GAVI core funding – for example health system strengthening (HSS) and rolling out pentavalent – in other cases they funded new activities . The share of IFFIm funding in co-funded GAVI programmes varied from low (less than 20% of overall programme costs for ISS, Hep B and Hib), to medium (around 50% for pentavalent) to quite high (around two thirds of HSS funding). In some cases – the investment cases – it funded completely new work streams.

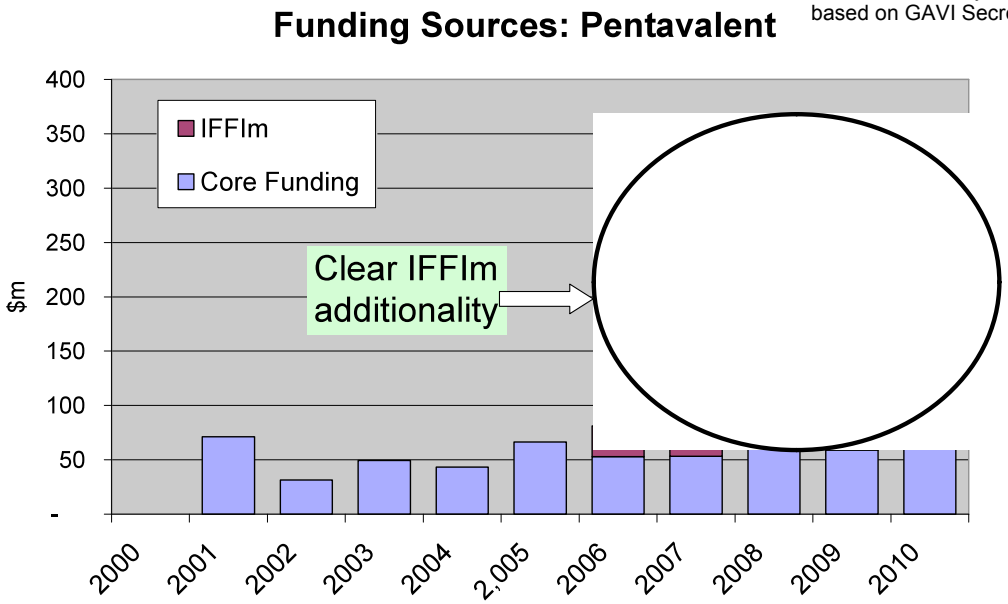
Figure 43



Source: HLSP analysis based on GAVI Secretariat data

Figure 44

Source: HLSP analysis based on GAVI Secretariat data



In some cases – such as pentavalent shown in figure 44 - it seems fairly clear that IFFIm support provided clearly additional funds to the programme. Discussions with GAVI staff did suggest that IFFIm did fund additional activities and that the support was not fungible. Ultimately it is impossible to know whether this is the case - but we use that as a basis for

our approach. We do note, however, that the IFFIm proposal to the Board did suggest that support for pentavalent might free resources up for other uses[78] .

Thus in asking what GAVI's results would have been without IFFIm we focused on the results achieved by the spending pattern outlined above.

3. What health impact has IFFIm funding had?

1. Methodology and Data Sources

In this section we map out what is known about the impact of IFFIm funded investments. We distinguish between NVS programmes, support for health systems strengthening and the investment cases as they raise different issues.

GAVI relies on a number of existing approaches to measure the impact of its regular NVS programmes. Current approaches include:

7. an annual assessment carried out by WHO which estimates future deaths averted based on estimated coverage rates. This approach uses peer-reviewed to measure the impact of Hib, pertussis, hep B, pneumococcal and rotavirus and results are presented in an annual progress report in October;
8. the Long Range Cost and Impact Model (LRC&I) which is generally used as a forward planning tool but uses simple coefficients of deaths averted by vaccine to estimate impact and;
9. the LiST (Lives Saved Tool) model developed by the Johns Hopkins School of Public Health.

We use these models to assess past, and likely future, health impact from IFFIm funding to GAVI's regular NVS programmes (recognising that the models were not necessarily designed to be used in these ways). The investment cases and HSS are dealt with separately.

We draw upon a range of sources including appraisal documents, subsequent assessments by the implementing parties and independent analyses (including the HSS evaluation and an independent evaluation of the Global Polio Eradication Initiative).

We were not specifically asked to measure expected impact but felt it important to make at least some judgment as to whether the original assumptions about IFFIm's expected health impact remain credible. As a result of the factors highlighted above, the shortcomings of the models and the lack of quality data we have only limited confidence in the findings presented here. We have, therefore, adopted an extremely conservative

[78] "the proposed scenarios include significant support for the use of pentavalent DTP-hepB-Hib vaccine — an investment which would free up some Vaccine Fund resources already committed for vaccine purchase, enabling them to be used for other investments in immunization International Finance Facility for Immunization (IFFIm) Proposal 6 October 2004

approach with assumptions clearly spelt out and have presented findings in terms of ranges rather than precise figures. We have used alternative approaches, where possible, to see if there is any degree of consistency in the findings using the different models.

For the investment cases estimates of impact are made by the WHO department responsible for implementing the programmes with figures checked by the Department for Immunization, Vaccines and Biologicals (IVB) in WHO. With the exception of measles these estimates are not based on peer reviewed models.

The models available all have weaknesses but they are improving and new models are being currently being developed. We understand there will be a rapid improvement in the quality of models over the next 12 to 18 months. It will be important to reassess impact estimates when these models come on line.

1. What health impact has IFFIm support to GAVI NVS programmes had? What impact is it likely to have?

In this section we describe the various models and use them where appropriate to estimate impact to date and project possible future impact according to a range of possible scenarios

1. WHO Estimates

Currently GAVI relies on the WHO IVB Department to carry out an annual assessment of the impact of its programmes. The approach covers pertussis, Hib, Hep B, rotavirus and pneumococcal. The latest figures were prepared in October 2010 and include estimates up to 2009. Projections are made for 2010 and 2011 based on the assumption that coverage rates remain the same for countries with DPT3 coverage >80% and increase by 1% where <80% and based on data provided by GAVI on ISS or NVS coverage and expected introduction dates for Hep B, Yellow Fever, Hib, rotavirus and pneumococcal where relevant.

Figures relate to *future* deaths rather than actual deaths In fact, most of the deaths prevented are those which would results from Hepatitis B infection when the immunised child is between 30 and 50 years of age. WHO require that figures are presented as follows "numbers of future deaths prevented among children reached during (specify period), through support provided in full or in part by the GAVI Alliance". The model does not address the issue of herd immunity. We understand that methods are currently being reviewed and that this is likely to result in a reduction in estimated deaths averted[79]. It should be noted that this model is not designed for making long term projections.

[79] "we expect (a) decrease in deaths and deaths averted from Hib, pneumococcal and rotavirus as the overall child mortality envelope decreased and has been decrease in total diarrhoea and pneumonia deaths. Hepatitis B model is also currently being updated and preliminary results suggest lower numbers, which will potentially lower the estimated future deaths averted in cohorts" WHO Progress Report October 2010.

Based on its current estimates of children covered by the different vaccines since GAVI's inception WHO estimates that GAVI will have helped avert just over 5 million *future* deaths since its inception from pertussis, Hib and Hep B. These estimates are presented in table 9 below.

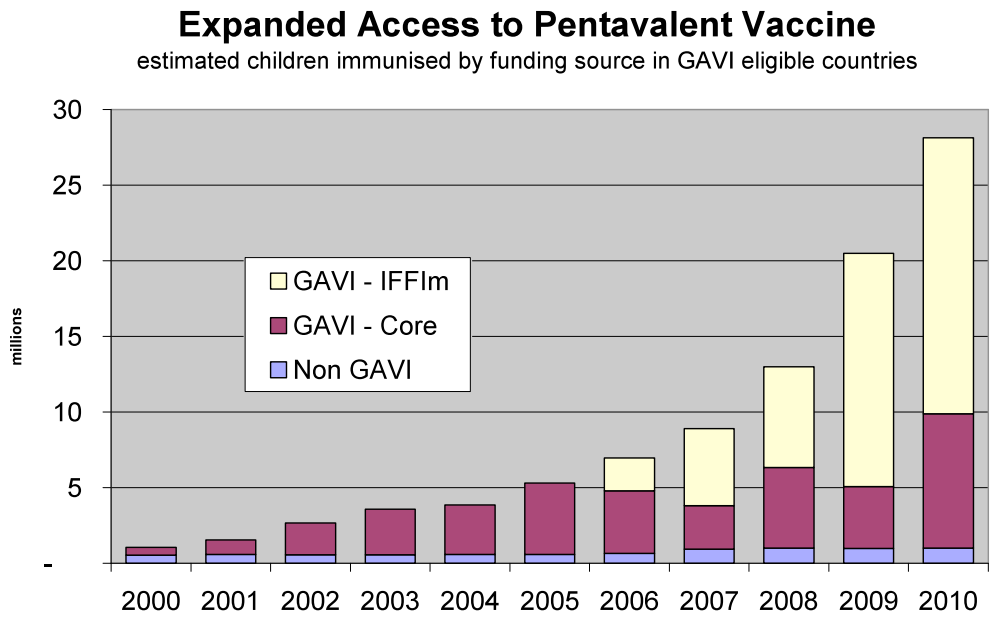
Table 9: WHO Estimates of Future Deaths Averted

	Pertussis	Hib	HepB	Rota	Pneumo coccal	Total	Cumulative
2000						-	-
2001	2		5			7	**7**
2002	5	18	279			303	**310**
2003	16	20	348			384	**694**
2004	36	26	386			449	**1,143**
2005	60	29	430			519	**1,661**
2006	74	37	460			572	**2,233**
2007	68	62	358			488	**2,721**
2008	67	73	397	0.1		538	**3,259**
2009	82	145	367	0.2		595	**3,854**
2010	64	150	375	0.3	8	596	**4,450**
2011	**14**	**135**	**365**	**0.8**	**36**	**551**	**5,001**

Source: WHO Report on GAVI Progress 2000-2009 & Projected Achievements 2010-2011 Department of Immunization, Vaccines, and Biologicals October 2010

Some of the increases in coverage outlined above have been funded by IFFIm – others through GAVI core funding. Our approach was to attribute impact according to the relative share of funding from the different sources (as shown in Figure 45 which illustrates the example of the pentavalent vaccine).

Figure 45



For further details see **annex 21**.

Based on the share of funding provided by IFFIm (annex 21 table 1) and GAVI data on vaccines supplied (annex 21 table 2) we estimate that IFFIm has accounted for 62.1% of future DPT deaths averted, 57.8% of Hep B future deaths averted and 63.7% of future Hib deaths and 10.9% of future pneumonia deaths averted since 2006. This would suggest that by the end of 2011 IFFIm will have been responsible for just under 2.1m of the 3.3m future deaths estimated to have been averted since 2006[80] (table 10). (The corresponding figure of IFFIm-attributable future deaths averted by the end of 2010 is 1.73m).

Table 10: Projections of IFFIm Attributable Future Deaths Averted from Programme Activities to end 2011

	Pertussis	Hib	HepB	Pneumo	Total
2006	7	37	460		572
2007	68	62	358		488
2008	67	73	397		538
2009	82	145	367		595
2010	64	150	375	8	596
2011	14	135	365	36	551
Total GAVI 2001-2011	488	695	3,770	44	5,001
Total GAVI 2006-2011	369	602	2,322	44	3,340
Total IFFIm 2006-2011	229	384	1,341	5	2,076

Source: WHO Report on GAVI Progress 2000-2009 & Projected Achievements 2010-2011 Department of Immunization, Vaccines, and Biologicals October 2010

2. Long Range Cost and Impact Model

GAVI uses the Long Range Cost and Impact model (LRC&I) to help inform its strategic investment decisions by projecting the potential future impact of different investment options. The model is used to make forward projections for a range of vaccines and has a wider coverage than the WHO model[81] . The model is based on specific coefficients which link the number of deaths averted to the number of children vaccinated (table 11). The approach also refers to *future* deaths (similar to the WHO model described above) and reflects GAVI's *contribution* to any health impact[82] . The estimate of the number of children immunised is derived from the Strategic Demand Forecast v2.0. The model does not address the issue of herd immunity. GAVI has used this model to provide donors with estimates of impact for different vaccines.

80 Taking the period to 2006- 2010 IFFIm is responsible for an estimated 1.7m out of 2.8m future deaths averted

81 It also includes Yellow Fever, Meningitis A, Japanese Encephalitis, Human Papilloma Virus, Rubella: and Typhoid:

82 "It is recognised that GAVI's contributions toward averting these future deaths are intertwined with many other investments and actions—most importantly those made by countries themselves. This indicator serves to measure GAVI's contribution to this impact, rather than exclusively attributing a portion of the impact to GAVI". (GAVI Alliance Board Meeting, 30 November-1 December 2010 - Supporting Document 2 Definition of indicators)

Table 11 shows the LRC&I model's impact assumptions. It is recognised that these methods are rather crude although recent analysis (Lee 2010) suggests the figures are, if anything, on the conservative side.

Table 11: Long Range Cost and Impact Model: Coefficients use to estimate impact

	Future Deaths Averted Per 1000 Immunised Children
Pentavalent[83]	12.5
Pneumococcal	7.4
Rotavirus	3.4
Yellow Fever	0.2
Meningitis	0.65

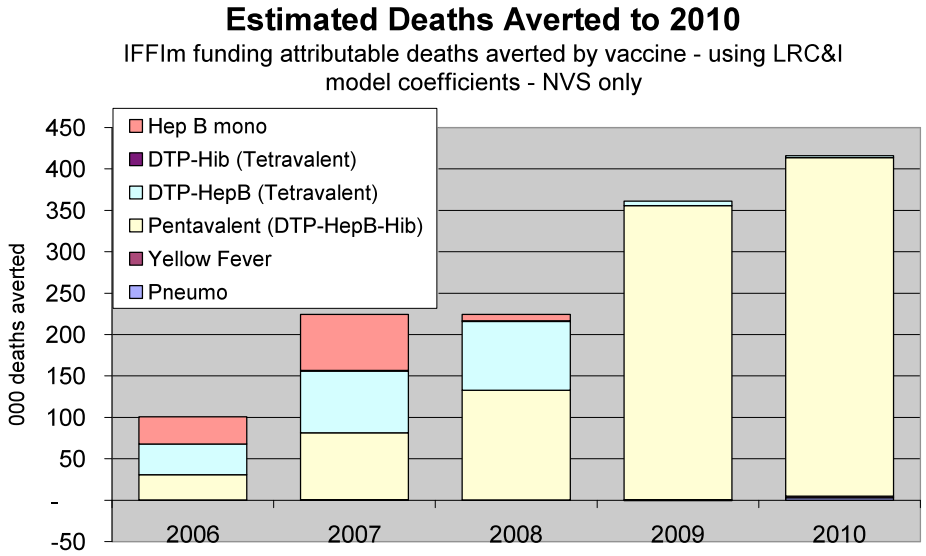
Source: Data taken from Supporting Document 2 Definition of indicators GAVI Alliance Board Meeting, 30 November-1 December 2010 and Lee 2010-

Using the LRC&I model to estimate impact to date

Though the model is not designed to look backwards we adapted it to try and estimate impact achieved to date. In doing so we were able to carry out an alternative assessment of IFFIm's impact by applying the ratios from **table 8** to the volumes of vaccines financed by IFFIm.

Figure 46

Source: Data on vaccines supplied from GAVI. Impact coefficients from LRC&I model



83 Pentavalent can subsequently be disaggregated as follows: Hep B 7.7 Hib 2.4 pertussis 1.4. tetanus 0-9 and diphtheria 0.1 (Lee 2010)

Figure 46 above shows the estimated impact of IFFIm funded support to GAVI programmes using the LRC&I coefficients. Detailed assumptions are presented in **annex 22.** This approach suggests just over 1.3m deaths averted to 2010. This is somewhat less than the 1.73m estimated through the WHO model.

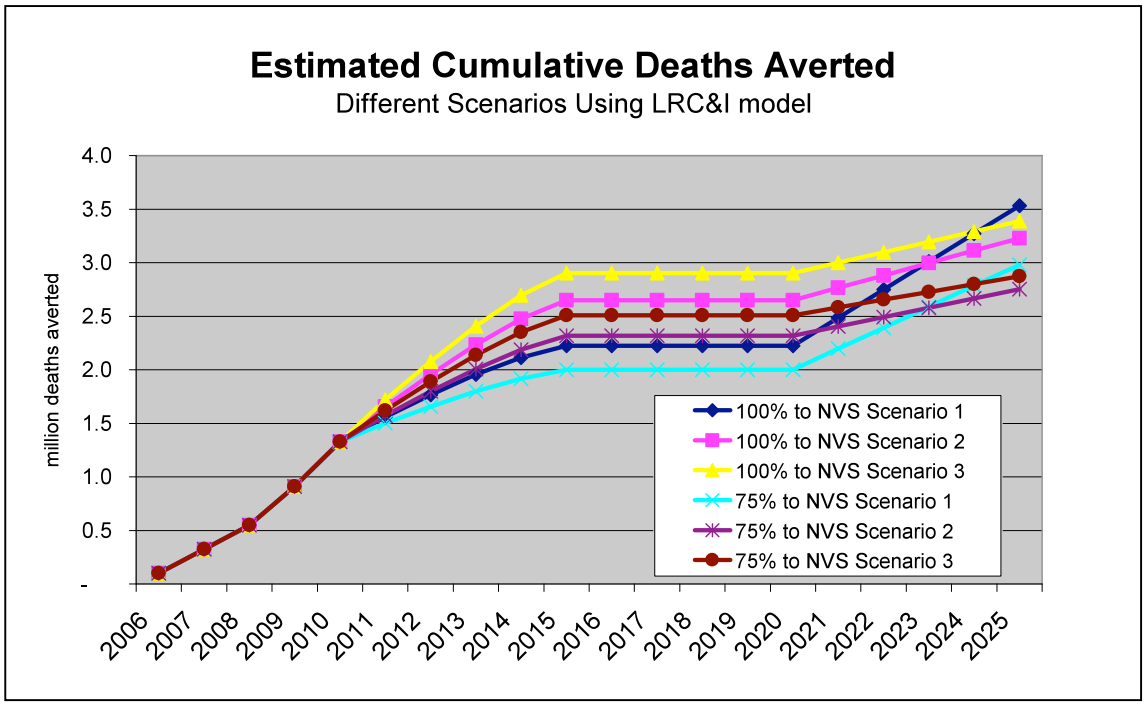
Using the LRC&I model to project possible future impact

GAVI does not specify how future IFFIm funds will be spent. We therefore developed a range of different scenarios based on a range of possible investment decisions. Key assumptions related to:

10. the allocation of funding between pentavalent, pneumococcal and rotavirus,
11. the extent to which funding can be frontloaded, and
12. the share of IFFIm funds going to programmes where the causal pathway is extremely complex and impact is extremely difficult to measure directly (such as Health System Strengthening).

We made further assumptions about future vaccine prices[84], the share of donor pledges which could be accessed given the GRL[85] and wastage rates[86] (10%). Figure 47 below shows the estimated number of future deaths averted using vaccines supplied to 2010 – with projections for the period to 2025 - based on the scenarios outlined above.

Figure 47



84 Based on data provided by GAVI Secretariat

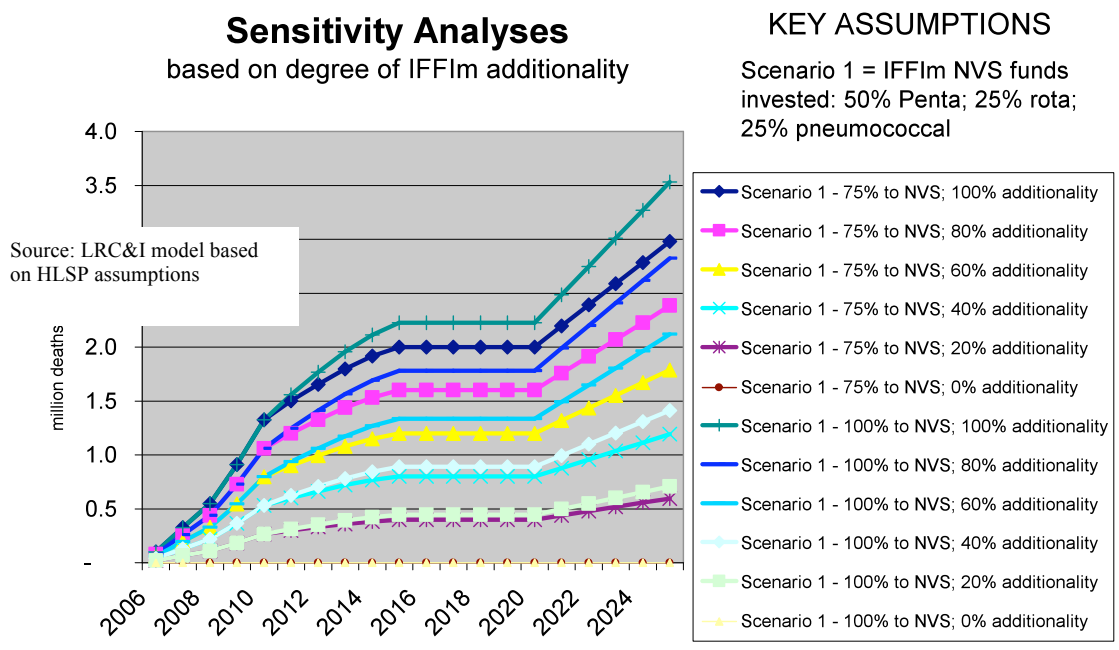
85 Based on discussions with the World Bank

86 Based on discussions with the GAVI Secretariat

The results suggest that IFFIm might be expected to avert between 2.5m and 3.5m future deaths to 2025 through support to GAVI's regular programmes. For further details on the different scenarios and assumptions are used see **annex 22**.

We also carried out sensitivity analyses to look at the effect of using different assumptions about the degree of additionality[87] provided by IFFIm. Not surprisingly, these show that the less additional IFFIm funds are the lower the health impact. **Figure 48** below shows the effect of different assumptions on additionality based on scenario 1 (50% of future IFFIm NVS funds are spent to pentavalent and 25% on rotavirus and pneumococcal respectively throughout for cases in which HSS spending accounts for 25% of IFFIm spending and the case where NVS accounts for all of IFFIm spending). In the most pessimistic case – where IFFIm funding is not additional – no future deaths are averted[88].

Figure 48



Source: LRC&I model based on HLSP assumptions

The figures suggest future deaths averted are likely to fall in the range of zero to 3.5m depending on the assumptions used. If additionality is 20% the analysis suggestion that IFFIm funds help avert at least 0.5m future deaths. (As we will show later this alone would be sufficient to justify the IFFIm investments).

87 As discussed in section 5.2

88 We cannot say anything about the overall impact of less than full additionality. This depends on what the resources which would have otherwise come to GAVI would have been spent on

1. LiST Model– Johns Hopkins School of Public Health

The LiST (Lives Saved Tool) tool allows users to set up and run multiple scenarios to look at the estimated impact of different health intervention packages and coverage levels at global, country, state or district level.

The module works by combining[89]

13. the current demographic projection (using demographic projections of the United Nations Population Division or from national or provincial demographic projections);
14. cause of death information for children under five and maternal mortality, again either standard estimates from the WHO or based on local data;
15. current levels of coverage of key health interventions that affect child and maternal mortality; and
16. estimated effectiveness of interventions on cause-specific neonatal, child and maternal mortality

Coverage for immunisation includes measles, BCG, polio, rotavirus, pneumococcal, Hib, and DPT. It does not cover hepatitis B. Unlike the two previous models LiST refers to *actual* deaths averted (i.e. in the year that they actually occur) rather than *future* deaths averted. The model is primarily forward looking but can be recalibrated to look at past impact. The model does not address the impact of herd immunity (with the exception of measles).

Using the LiST model to assess the impact of the counterfactual

The team worked with the LiST model team to assess the impact of increased access to pentavalent vaccine, in GAVI eligible countries, using a with/without IFFIm scenario. The model was recalibrated to 2006 and the implications of different scenarios assessed. For the period to 2010 the "without IFFIm" case was estimated by reducing coverage in line with the share of IFFIm funding in funding pentavalent .(i.e. by trying to estimate what coverage levels would have been without IFFIm funds).

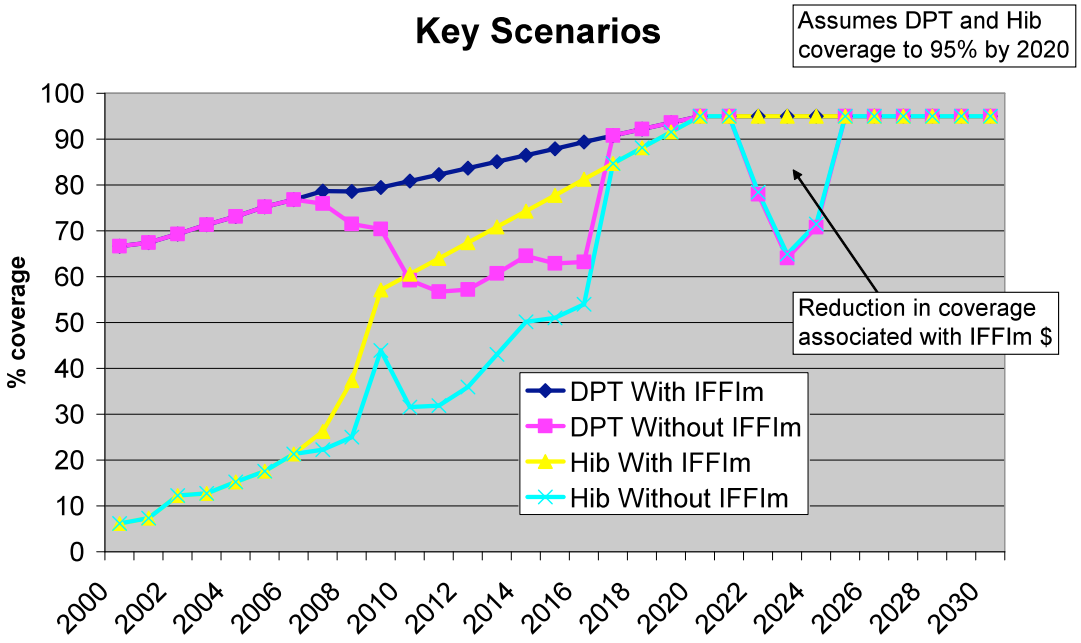
In terms of the future we assumed that in the "with IFFIm" scenario 60% of future IFFIm funds were spent on pentavalent (based largely on past performance). It was assumed that the coverage rate for DTP and Hib would increase in the "without case" to 95% by 2020. As might be expected from the IFFIm funding profile coverage rates in the "without IFFIm" case are lower in the periods to 2015 and around 2022/23 (when IFFIm's financial cushion which is held back to reassure bondholders - as explained in section 5 - is available to be spent[90]). The aim of this analysis was not to try and project the future - rather to illustrate the possible impact of IFFIm and to see if the results are consistent with those of the alternative models.

89 http://www.jhsph.edu/dept/ih/IIP/list/background.html

90 In line with other conservative assumptions we assume that the cushion will be released late in the period – in practice it is likely to be released gradually over time

The implications of removing IFFIm funding on coverage of DPT and Hib is set out in the figure 44. It shows the extent to which DPT and Hib coverage are expected to be higher in the periods in which IFFIm is likely to disbursing (2006-2015 and 2022-2024[91]).

Figure 49

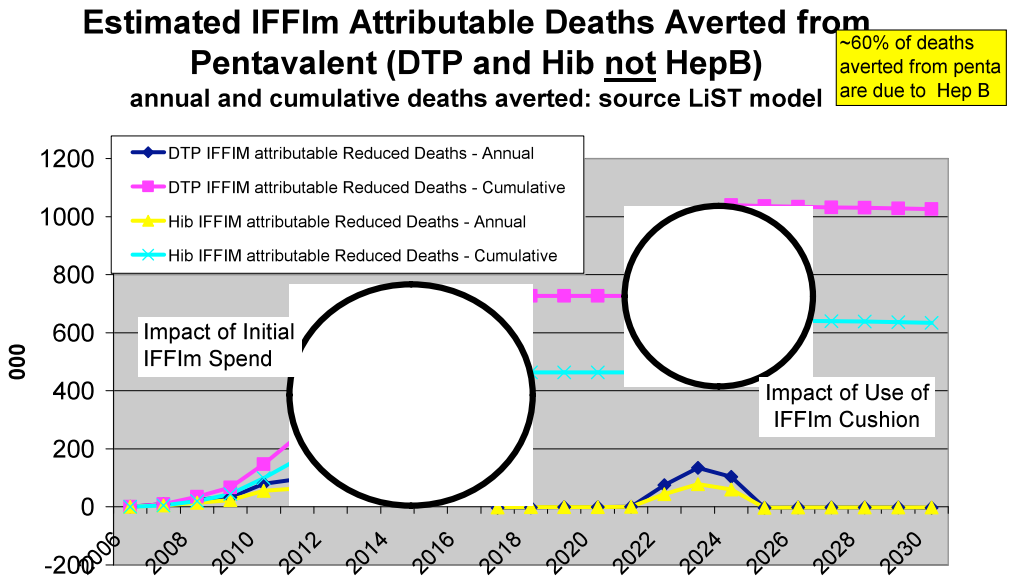


The results of the improved coverage supported by IFFIm funds – presented in **Figure 49** - suggest that IFFIm funds are likely to have helped avert around 250,000 deaths by 2010. The results also suggest a total of around 1m DTP related deaths averted and 0.6m Hib related deaths averted by 2030.

These figures appear much lower than those suggested by WHO and LRC&I but reflect expected actual deaths not future deaths and also exclude Hep B which, as the WHO estimates show, account for around 60% of deaths averted. If one were to increase deaths averted in line with these figures one would arrive at a total number of deaths averted of over 3 million – at the upper end of the figures generated by the LRC&I model.

91 Based on HLSP assumptions

Figure 50



Source: LiST model based on HLSP assumptions

Detailed assumptions are at **annex 22.**

1. What health impact has IFFIm support to the Investment Cases had? What impact is it likely to have?

In this section we map out what the investment case proposals say in terms of what they expect to deliver and what is likely to be delivered in terms of what was actually approved by GAVI and the available evidence. We provide an adjusted projection or estimate of impact based on the discrepancy between the proposal and approval (we reduce expected impact on a pro rata basis), on subsequent WHO//UNICEF estimates and on the results of independent analysis where these are available.

What do the investment cases say?

IFFIm funded support for the investment cases was based on a series of proposals submitted to the GAVI Board for approval. The amounts approved using IFFIm funds are shown in table 12. Key data sources for assessing impact include the investment case proposals, progress reports, specific analyses by WHO and independent impact assessments. An overview of the investment cases supported is shown in the table below

Table 12: IFFIm Funded Investment Cases

Investment Case	Grantee	Amount
MNT	WHO, UNICEF	$62 million
Measles	UN Foundation	$139 million
Yellow Fever	WHO, UNICEF	$101 million
Polio	WHO	$191 million
Meningitis	WHO, UNICEF	$68 million

Source: GAVI Secretariat

The investment case proposals generally provide quite detailed justifications and estimates of expected impacts. The expected impact of the investment case proposals is set out in the table below.

Table 13: Expected Impact of the Investment Cases

Investment Case	Expected Impact	Based On
MNT	An estimated 225,000 to 348,000 neonatal deaths from 2006 to2040 (90% of which will be prevented in the first 15 years up to 2020), at a cost of between $426 and $780 per death prevented and $8 to $15 per DALY loss averted	Original Investment Case: GAVI investment of $82m for vaccines and operational costs in phase I (TT SIAs in 2006), and $373.1m for operational costs in phase II (2007-2010 quarterly pulses
Measles	2.6m lives saved by 2010 at $12.4 per DALY	Measles Investment Case II: Based on a GAVI investment of $479m (plus a supplemental $98m
Yellow Fever	Reduction of both the size and frequency of yellow fever outbreaks for at least 20 years; prevent approximately 687,000 deaths between 2006 and 2050; at a cost per disability-adjusted life year (DALY) averted of US$ 20).	Revised Investment Case: GAVI investment of $58.6m out of a total of $86.6m
Polio	Averting a resurgence eventually resulting in 325 000 to 600 000 cases per year, the majority in GAVI-eligible countries	Original Investment Case: $353m investment
Meningitis	Provide long-term direct protection to approximately 272 million people Prevent approximately 149,000 deaths by 2015 Prevent permanent disability in approximately 347,000 children and adults and alleviate the related social and economic burden Prevent 13 million DALYs lost Save approximately $121 million in medical costs for diagnosis and treatment	Original Investment Case GAVI contribution of $370m to programme cost of $571m

Source: Investment Case proposals

However, not all of the proposals were approved in full – in some cases there were reassessments of expected impact where partial approvals were given. In some cases the

programmes for which funding was sought still have large outstanding funding gaps. In other cases approved resources were reprogrammed. This clearly raises questions as to whether the expected results set out in the original proposals will actually be achieved.

There has been no ongoing assessment of impact beyond the provision of a number of annual progress reports. Those available to the team provide evidence on inputs, activities and outputs but not on results and impact. There is little basis, therefore, for assessing whether the expected impacts have been achieved or are likely to be achieved.

What are the investment cases likely to deliver?

Though some of the investment cases provide quite detailed assessments of expected impact the evidence base on which they rest is often extremely weak (e.g. yellow fever). Furthermore, most of the investments do not support routine immunisation activities and do not, therefore, lend themselves particularly well to an assessment of measure such as deaths averted. Some provide a stockpile to allow a rapid response to outbreaks. The benefits of such support are difficult to measure (how big would the outbreak have been otherwise?). So, for some of the investment cases whilst we see little reason to doubt that there will be impact we feel there is little basis for estimating it at present.

Specific estimates were made by WHO for the purposes of this evaluation on the impact of the measles and polio investment cases. These are set out in **table 14** below. In addition, a recent evaluation of the Global Polio Eradication Initiative provided an independent assessment of likely health impact. Some of the investment case implementers are in the process of developing better tools to assess impact. GAVI should support this and use the outputs of the improved tools when they become available.

Approaches to Attribution

In terms of estimating the impact of IFFIm's support to co financed programmes the usual approach has been to attribute benefits in relation to IFFIm's share of overall programme funding. However, this approach has not been applied consistently and there are questions, in particular, about the time frame over which such assessments should be made. In the case of the Measles Investment Case, for example, many of the benefits currently being attributed to IFFIm occurred *before* it started funding (as the programmes supported have often been running for a considerable period of time). For polio the figures provided by WHO relate to the period of IFFIm funding which would appear to be a more reasonable approach.

Ideally, the approach would be to assess the marginal impact of the IFFIm inputs on the programme outputs. In the case of polio, for example, one would ideally ask whether the IFFIm investment is likely to increase the chances of eradication or bring the date forward. The evidence available – as far as we could see - does not support any assessment of this.

Table 14 presents an overview of what the proponents suggest the investment cases will deliver (reduced pro rata according to the actual size of the GAVI investment where necessary) and our "alternative estimates" where alternative analyses have been carried out or where we suggest alternative approaches to attribution.

Table 14: Possible Impact of Investment Cases

	Proposed Benefits (reduced pro rata according to actual GAVI funding as opposed to request)		Alternative Assessment of Benefits		Comments
Investment Case	(1) Cases Averted	(2) Deaths Averted	(3) Cases Averted	(4) Deaths Averted	
Polio	75,600	3,780	58,843	2,942	(1) and (2) from WHO (3) and (4) Team assessment based on Duintjer Tebbens. For details see **annex 23**. We use the lower figure in the range we identified. WHO figures are slightly higher but broadly consistent
Measles		860,000		162,000	(2) Based on WHO figures. Based on 19% of programme costs 2000-2009 and 4.3m averted deaths (4) based on team estimates Lowest case – see annex 23. Alternatively assuming deaths would immediately revert to 2000 levels and looked at just 2007 and 2008 data one would arrive at a total of 885,000 deaths averted. (IFFIm accounts for 57.4% of funding and supplementary immunisation activities avert 1.544m deaths
MNT		171,000		171,000	(1) to (4) Based on Investment Case - figures pro rata. 62.6m/$82m approved
Meningitis	51,400	21,900	51,400	21,900	(1) to (4) Based on IFFIm share of the Investment Case - pro rata. $84/$370m requested approved. Impact assessed at 14.7% of total programme costs. Programme has not been fully funded
Yellow Fever		687,000			(1) Based on revised investment case. Following discussions with WHO we judge that there is no firm basis for assessing impact
Total		1,743,680	110,243	357,842	

Duintjer Tebbens RJ, Pallansch MA, Cochi SL, Wassilak SG, Linkins J, Sutter RW, Aylward RB, Thompson KM. Economic analysis of the Global Polio Eradication Initiative. Vaccine 2011;29(2):334-343

Once the expected impacts of investment cases are adjusted (to reflect recent WHO assessments, recent studies and to reflect partial funding of the investment case) the investment cases expect to avert over 1.7m deaths. Our alternative assessment – based largely on the removal of the yellow fever impact and a significant – and possibly excessive - reduction in the estimate of measles impact suggests deaths averted are likely to range upwards from just over 350,000. The alternative measles estimates only take into account the marginal decreases in measles deaths since 2006 (not 2000 as in the WHO estimates) and assume that in the absence of IFFIm funding deaths would have reverted to their pre-IFFIm 2006 levels and not immediately to the original 2000 figures.

Our conclusion would be to treat the estimates of impact from the investment cases extremely cautiously. We would also point out that GAVI should not focus on deaths averted to the exclusion of other important benefits. We rate the quality of this evidence to be low. Therefore, to be extremely conservative, for the purposes of the overall cost benefit analysis (in section 9) we assume a minimum of 0.25m deaths are actually averted through the investment cases. We use this arbitrary reduction on the grounds that we can be reasonably confident the true figure will not fall below this. For more detailed analysis of the investment cases see **annex 23.**

2. What health impact has IFFIm support to GAVI's Health System Strengthening (HSS) programmes had? What impact is it likely to have?

Assessing impact for HSS is extremely challenging given the complex causal pathways between intervention and impact. Better information should be available following a more formal evaluation of GAVI's HSS programme planned for 2012 following the initial process/output review in 2009. However, given concerns expressed in the 2009 review about the design of many of the programmes there are still questions about how reliable any findings will be even at that stage.

We assume – to be conservative – that HSS has not provided any additional impact – but to think of it in terms of being a precondition for achieving the benefits of the immunisation specific programmes. There will, in some cases, also be impacts beyond immunisation (as noted in the section 6 on externalities).

For more detail on IFFIm support to HSS see **annex 24.**

3. Impact beyond deaths averted

Most of the emphasis is placed on health benefits and particularly deaths averted. However, other benefits are far more important for some of the investment cases. This is especially true for diseases entering the eradication phase where the burden of disease is already low and little further reduction is possible. Investing in global public goods - such as eradication of a disease – is, in our view, a perfect fit for frontloaded funds (you buy now so you don't have to pay later) provided there is a strong developmental case for the investment. Cost savings from polio eradication (if it is achieved) are comparable, and may exceed - depending on country policies post-eradication - expected levels of total GAVI funding over the next decade. It is estimated that the cost savings in GAVI eligible countries may amount to some $1.1bn per annum (if inactivated poliovirus vaccine use (IPV) is continued) or $1.6bn if routine immunisation is discontinued. As most support for polio is externally funded eradication would release a significant amount of donor funds. This represents a considerable opportunity for GAVI to access additional core funding (see **annex 24**). Meningitis and measles also offer some potential for eradication in the medium to long term. Potential fiscal and other benefits of polio eradication are shown in Table 15 below.

Table 15: Estimates of IFFIm Attributable Benefits: Support to the Global Polio Eradication Initiative

	GPEI (followed by IPV)	GPEI (followed by no immunisation
Cases Averted 1988 - 2035 (compared to routine immunisation) millions	7.612	7.605
Total Costs 1988 - 2035 ($m)	24,708	15,264
IFFIm Support ($m)	191	191
IFFIm Share (%)	0.77	1.25
"IFFIm attributable" share of cases averted	58,843	95,165
"IFFIm attributable" share of deaths averted	2,942	4,758
"IFFIm attributable" share of cost savings $m 2013-2035	200.77	447.88

Data – based on Duintjer Tebbens et al

4. Summary of Findings

17. The evidence base on health impact is weak. The models used to assess impact have shortcomings. They do not address some of the issues –such as the achievement of herd immunity – which provide the rationale for frontloading. Impact is inherently difficult to measure for some recipients of IFFIm funds (HSS); reporting on impact for the investment cases is weak. In some cases independent analyses have proved to be extremely useful (polio);
18. Given the considerable uncertainty surrounding the estimates and they should be used with care (especially when used for advocacy purposes). Caveats need to be clearly set out;
19. Despite serious shortcomings in the approaches, the different methods used and the use of questionable assumptions there is at least some level of consistency in the findings;
20. Approaches use to attribute impact for the investment cases have not been consistent – in some cases we are concerned that there may have been a degree over-attribution (measles). Country contributions are also ignored in attributing impact;
21. Approaches to assessing impact are improving and newer, improved models should be used when available. There is no independent verification of figures provided IFFIm funded activities seem likely to have had, and are likely to have, a substantial impact on health outcomes – though not as high as initially anticipated;
22. The focus on health impact – especially on deaths averted - ignores some very important effects which also offer GAVI significant opportunities. The very nature of some of the IFFIm investments – programmes nearing eradication means that health impacts are likely to be relatively minor. The major gains are to be achieved through the cost savings which accrue post eradication.

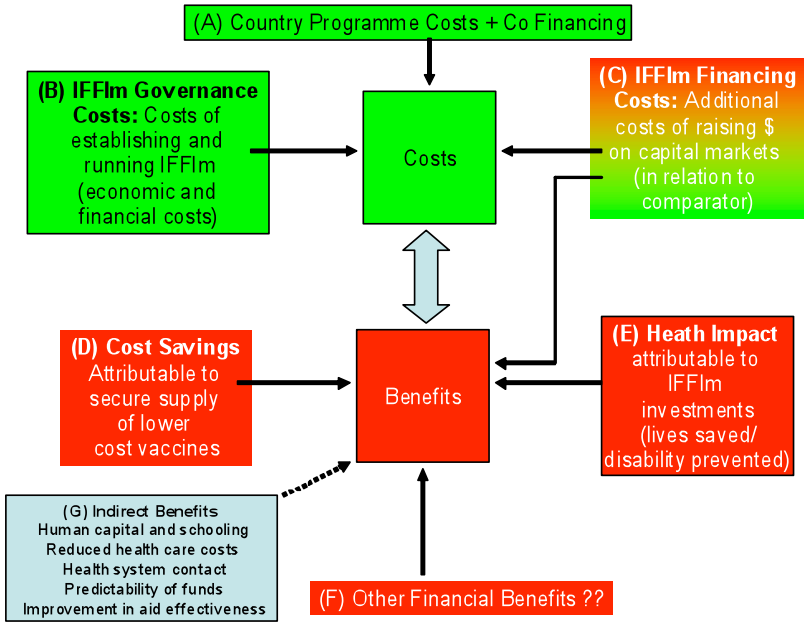
23. Given the quality of the evidence we use extremely conservative assumptions about deaths averted (the most pessimistic assumption for NVS – 2.5m future deaths averted; HSS – no deaths averted; Investment cases 0.25m deaths averted. These do not represent estimates of the impact. Rather, they are extremely conservative estimates below which – based on the limited evidence available – we believe the true figure is unlikely to fall.

We do note that it is to GAVI's credit that, knowing the attention that might be placed on IFFIm given its innovative nature and high profile, it has not tried to game the system by putting its best investments in the IFFIm basket (given that funds are potentially fungible). If anything it has done the opposite by allocating a reasonable share of funds to HSS the impact of which is extremely difficult to measure.

24. Overall Assessment of Impact – Cost Benefit Equation

In this section we try to bring together the various costs and benefits associated with IFFIm to provide a *partial* cost benefit analysis. The various costs and benefits are presented in schematic form in Figure 51. Some components are obviously costs (e.g. IFFIm running costs) others are clearly benefits (e.g. health benefits). For others (e.g. for IFFIm's financing where costs – compared to relevant comparators - may actually be negative) the picture is less clear. In broad terms we try and identify the relevant costs and benefits and value them in an appropriate manner to provide some basis for comparison.

Figure 51: Basis for Comparing Costs and Benefits



In terms of assessing the overall impact there are a number of possible questions. If we are interested in addressing the narrower question of the impact of the IFFIm mechanism we need to compare the financing costs and governance costs (B and C in the figure below) in relation to other alternatives.

If we are interested in the broader question of whether the returns from the IFFIm generated revenue outweigh its costs there are two possible questions. Is the $4bn to be invested using IFFIm funds, and any additional costs involved, likely to generate sufficient returns to justify the investment compared to:

1. the do nothing option?
2. an option in which the same amount of funds were invested gradually over the period?

For these questions we are interested in the broader range of benefits A to G

Given that IFFIm funding appears to have been largely additional (section 5.2) we take the "do nothing" option as the proper comparator.

3. Did the IFFIm mechanism work?

The issue of IFFIm's financial performance was addressed in **section 5** where we conclude that the IFFIm mechanism has operated efficiently – in relation to relevant comparators - and that the value added by IFFIm through its efficient operation has partially, or fully offset, its running costs depending on which comparator is used.

4. Are the IFFIm funded investments likely to offer good value for money?

In terms of the broader cost benefit analysis it is only possible to provide a partial picture as data is only available on some of the cost and benefit dimensions (It is possible for B, C, D, E and, to a lesser degree, F and A. It was not possible to fully assess others (G and, to a certain extent, A and F). Future analyses might want to take these into account to give a fuller picture.

1. IFFIm-related Costs

On the cost side the main component is the overall IFFIm investment – some $3.9bn in 2006 prices (the PV of donor pledges used to pay for the investments and pay interest to bondholders). We assume governance costs to a maximum of $7m per annum over 20 years – amounting to some $150-170m. This may be on the high side but makes full allowance for pro bono contributions and other subsidies; it may, in practice, be possible to reduce costs as IFFIm enters the refinancing stage. We assume that the net cost of raising funds is zero[92]. We also assume that recipient countries need to make complementary investments, whether through co financing or developing their own immunisation or broader health systems, to allow the IFFIm funded inputs to achieve the desired results. This issue tends to be neglected and it is simply assumed that programmes can be scaled up at GAVI's marginal cost. Whilst we have no specific estimates of how much is needed we include an arbitrary, but large, figure of $2bn (around 50% of the IFFIm investment) to account for this. In practice, GAVI may choose to meet some of these costs through its HSS window. We would recommend a more systematic approach be taken to assess country contributions. We estimate overall costs of implementing the IFFIm funded programme, therefore, to be of the order of around $6bn.

92 This is conservative – the current figure is -$3.3bn – but we assume that it becomes rather more expensive to issue debt once funds are used for refinancing rather than new health programmes. In practice this figure is negligible in terms of the overall analysis).

2. IFFIm-related Benefits

On the benefit side the most important component is the health benefits. The issue of how to value benefits is a controversial one. We translate the expected results from the IFFIm spending into financial terms by assuming each DALY saved is a) valued at the recipient country's average per capita income b) discounted at 3% per annum and c) is not age weighted. We assume each death averted saves 42.5 DALYs (undiscounted) and 15.2 DALYs (discounted)[93].

There are strong arguments that such an approach is too conservative – we set out the implications of other, more generous, approaches. We use estimates of health benefits taken from our analysis of the investment case proposals and their emerging findings and recent literature where relevant. For support to GAVI core programmes we used WHO, LRC&I and LiST models to assess impact to date and the LRC&I and LiST model to assess possible benefits going forward (as discussed in **section 8**).

Additional benefits include the cost saving impacts of IFFIm investments. The data suggest that the IFFIm attributable impact on cost savings from polio eradication is of the order of $200m to $450m which may exceed IFFIm's investment in GPEI. Although we try and quantify this figure for illustrative purposes we do not actually factor it into the cost benefit analysis.

3. Cost Benefit Analysis

Our analysis from section 8 suggests that IFFIm might be expected to result in some 2.75 to 3.75m deaths averted. Were such figures to be achieved we estimate a cost benefit ratio in the range of 3.49 to 4.75:1 as shown in Table 16.

93 This is based on the assumption that half of the deaths averted are from Hep B which save 15 DALYs and half are child deaths averted which save 70 DALYs

Table 16: Benefit Cost Ratios – Expected Results and Breakeven Requirements

	m deaths averted	Benefit Cost Ratio			
		Undiscounted DALYs per capita income		Discounted DALYs per capita income	
		500	1000	500	1000
			1.42	0.25	0.51
	0.4	1.42	2.83	0.51	
	0.6	2.13	4.25	0.76	1.52
	0.8	2.83	5.67	1.01	2.03
Likely IFFIm Outcomes	2.75	9.74	19.48	3.49	6.97
	3	10.63	21.25	3.80	7.61
	3.25	11.51	23.02	4.12	8.24
	3.5	12.40	24.79	4.44	8.88
	3.75	13.28	26.56	4.75	9.51

Costs Exceed Benefits	
Likely Results	
Likely Result – Conservative Assumptions	

In terms of valuing benefits it is also worth pointing out that the average per capita income recipient of IFFIm funding – based on HLSP analysis - is $438 per head[94]. This is considerably lower than that for GAVI core funding as a whole ($508). This clearly illustrates the fact that GAVI is investing its resources in countries where gains are most difficult to achieve. Equally it means that the usual method of valuing benefits (where a DALY is valued according to the recipient country's average per capita income) actually penalises GAVI rather than rewards it. This is because a poor recipient is credited with less benefit than the same, better off one, for achieving the same health impact). (According to Development Assistance Committee data when health and population spend is weighted according the per capita income of its recipients the corresponding figure for the UK is over $800 with the US, Germany and France over $1000). On this basis we have also shown the impact of valuing benefits at $1000 per DALY in table 13.

4. Breakeven Analysis

Given the substantial uncertainty relating to estimates of health impact an alternative approach would be ask how many lives need to be saved to justify the IFFIm funded investments. Our assessment – also shown in table 13 - is that IFFIm funded investments need to avert, at the very most, 800,000 deaths to breakeven.

For more details see **annex 25.**

94 HLSP analysis based on GAVI spending data; per capita income figures from World Bank

5. Impact of Frontloading

As noted earlier we do not believe that the possibility of donors providing the same amount of funds as those delivered by IFFIm but over a longer period of time is an appropriate counterfactual (as donor pledges for IFFIm were almost totally additional). However, the illustrative modelling we carried out – based on a case study of rotavirus in Bangladesh which may not be widely applicable - to assess this theoretical alternative (see **annex 18)** concluded that it should not automatically be assumed that frontloading will result in greater health benefits.

The results depend heavily on the interplay between the degree of frontloading, the strength of the herd immunity effect and trend in vaccine prices. One risk with frontloading is that it might simply result in the purchase of more vaccines when prices are high and less when prices have declined and thus have *less* health impact. This emphasises the importance of reduced vaccine prices - whether achieved by natural market forces or active purchasing polices – in maximising the impact of frontloading.

5. Summary

The IFFIm funded investments appear likely to help generate extremely good returns even using very conservative assumptions. The breakeven figure for deaths averted is around 800,000. Despite considerable uncertainties over the actual health impact of IFFIm funded spending it is likely to exceed this comfortably – probably by factor of at least 4.

Indeed, IFFIm has almost certainly *already* more that achieved the benefits necessary to justify the total IFFIm costs - including those which will be incurred over the next 10 years - in terms of *future* deaths averted (and probably gone a long way to averting the necessary number of *actual* deaths). The main reason for these results is the cost effectiveness of the investments being supported.

The costs of running IFFIm and the efficiency with which IFFIm operates are largely irrelevant in terms of the overall cost benefit equation. This is not to suggest that efforts to reduce running costs and improve efficiency of IFFIm are not important – just that they have very little effect on the overall cost-benefit results.

The analysis is only partial. It is important that costs faced by countries are also considered. We use a large, but arbitrary figure to reflect such costs but this is not based on any evidence.

It is not possible to convincingly demonstrate the benefits of frontloading. The evidence base on herd immunity is not strong enough to do so. Illustrative modelling highlights the importance of reduced vaccine prices in increasing the benefits of frontloading.

Glossary of Terms: Capital Markets

Definitions

Finance Framework Agreement (FFA) – sets out the relationships between all parties including the procedures for raising debt by IFFIm; the debt will be raised to meet the funding requirements of those programmes approved by the various parties following completion of the procedures set out in the PM.

Multilateral Development Bank (MDB) / Supranational - an institution, created by a group of sovereign states, with the common task of fostering economic and social progress in developing countries by financing projects, supporting investment and generating capital. MDB status is officially recognised for a small group of institutions by the EC and the Bank of International Settlements (BIS). Common features of MDBs are sovereign ownership and control (including the ability of the sovereign shareholders to suspend or wind up operations), a capital structure, statutory lending limits, a AAA rating, and 0% Risk Weighting (Basel II).

High Level Financing Condition (HLFC) – the sizes of donor pledge commitments are conditional; if a recipient country (from a defined pool of 70 countries) falls into protracted arrears with the IMF, donor countries - reduce their pledge amounts. There are three classes of country – 1%, 3% and 5% - which are grouped according to the proportion of IFFIm funds expected to be disbursed to them. IMF arrears allows donor countries to reduce their contributions (cumulatively) by the country percentage e.g. if Angola falls into IMF arrears, donors reduce their contributions by 1% or for India 5%. Currently Sudan (1%), Somalia (1%) and Zimbabwe (1%) are in IMF arrears and so IFFIm contributions are reduced by 3%.

Interest rate / DV01 risk - the technical term for quantifying the interest rate risk of a set of cash flows is DV01 which is the amount of money which would be made or lost due to a 1 basis point (0.01% or bp) increase in interest rates. DV01 risk is expressed as a currency amount for each cash flow maturity and is referred to as being either 'long' (positive) or 'short' (negative); a long DV01 position makes money if interest rates go up and a short DV01 position makes money if interest rates go down.

Example: an income of £x in GBP spread over 15 years results a DV01 exposure of -£100 at the 10 year point and -£150 at the 15 year point. That means that if 10 year and 15 year UK interest rates increase by 2bp and 1bp respectively then the loss is -£350 = 2bp x -£100 + 1bp x -£150.

Swap rate - the fixed rate equivalent of the expected floating rates over a given maturity e.g. at the time the Swap was executed, from a financial perspective receiving 0.45375% was the exact equivalent of paying the expected 3m Libor payments every three months until November 2011. Swap rates are quoted for maturities from 6 months out to 50 years and can be calculated against 3month, 6month or 12month floating rates. The swap market, especially in US$, is one of the deepest most liquid markets in existence and it reflects the views of every participant in the market (there are hundreds of thousands). The swap rates tell us what the market's expectation of future interest rates is e.g. when

IFFIm executed the Swap, the 0.45375% fixed rate represented the market's expectation that 3month interest rates would rise from the prevailing 3month Libor rate of 0.30XXX% and hence a market neutral investor would be indifferent between receiving 0.45375% fixed and floating 3month Libor.

Transaction documents - Set of contractual relationships between the major stakeholders i.e. GAVI, donors, IFFIm, the World Bank, investors etc. The most commonly referred to are the Finance Framework Agreement (FFA) and the Treasury Management Agreement (TMA).

Procedures Memorandum (PM) – sets out the process by which an application for GAVI support from an eligible country is approved for funding through the IFFIm mechanism.

Treasury Management Agreement (TMA) – sets out the form of relationship between the World Bank and IFFIm board intended by the donors and the various functions to be performed by the World Bank as Treasury Manager.

Special Purpose Vehicle (SPV) - legal entity (company) created solely to fulfil a narrow, specific or temporary objective

Asset Backed Security (ABS) - security whose value and income payments are derived from and backed by a specified pool of underlying assets. The pool of assets is typically a group of small and illiquid assets that are unable to be sold individually. Pooling the assets allows them to be sold to general investors (a process called securitisation) and allows the risk of investing in the underlying assets to be diversified because each security will represent a fraction of the total value of the diverse pool of underlying assets.

Collateralised Debt Obligation (CDO) - structured ABS whose value and payments are derived from a portfolio of underlying debt assets. CDO securities are split into different risk classes, or tranches. Interest and principal payments are made in order of seniority, so that junior tranches offer higher coupon payments (and interest rates) or lower prices to compensate for additional default risk.

In simple terms, think of a CDO as a promise to pay cash flows to investors in a prescribed sequence, based on how much cash flow the CDO collects from the pool of bonds or other assets it owns. If cash collected by the CDO is insufficient to pay all of its investors, those in the lower layers (tranches) suffer losses first.

Risk Weighting – under the Capital Adequacy (CA) rules for banks (often referred to as Basel II or III), assets are grouped according to their risk profile and banks must hold varying amounts of capital against them. Assets such as debentures are assigned a higher risk than others, such as cash or government bonds.
For example, government/MDB debt is assigned a 0% risk weighting i.e. they are subtracted from total assets for the purposes of calculating the CA whereas structured AAA transactions are assigned a 20% risk weighting.

Libor - stands for London InterBank Offered Rate. It is produced for ten currencies with 15 maturities quoted for each, ranging from overnight to 12 Months. Libor is a benchmark, giving an indication of the average rate a leading bank, for a given currency, can obtain unsecured funding for a given period in a given currency.

Individual Libor rates are the end product of a calculation based upon submissions from a panel, made up of the largest, most active banks in each currency Libor is quoted for. Every contributor bank is asked to base their Libor submissions on the following question:

“At what rate could you borrow funds, were you to do so by asking for and then accepting inter-bank offers in a reasonable market size just prior to 11 am?”
The rates are not necessarily based on actual transactions (not all banks will require funds in marketable size each day in each of the currencies and maturities they quote) which is a frequent criticism of Libor since when the markets ceases to function normally e.g. during the financial crisis, Libor can become very volatile (it is only an opinion rather than a real traded rate so it cannot be tested).

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