CENTER FOR INNOVATIVE FINANCE SUPPORT

BUILD AMERICA TRANSPORTATION INVESTMENT CENTER

UNITED STATES DEPARTMENT OF TRANSPORTATION

Revenue Risk Sharing for Public-Private Partnerships: A Discussion Paper

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Presenter

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Overview

- Purpose of Discussion Paper
- Analytical Framework and Research Approach
- Revenue Risk Sharing Mechanisms for U.S.

Purpose of Discussion Paper

- Evaluate and categorize existing revenue risk sharing mechanisms worldwide and in U.S.
- Address how mechanisms could work in U.S.
- Address how mechanisms could work better given:
  - Need to create value for money (VfM)
  - Fiscal impacts
  - Financing constraints (financeability)
  - Ease of implementation
- Provide guidance on selection of mechanisms

Context: Financial distress in multiple U.S. toll roads over the past decade

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U.S.

Frugal Motorists Test Private Toll Roads

Bankruptcy of Texas highway underscores risks

The private company that operates a portion of State Highway 130 in Texas has filed for bankruptcy protection due to lower-than-expected traffic on the toll road. *PHOTO: BOB DAEMMRICH/CORBIS*

By DAN FROSCH

111 COMMENTS

March 19, 2016 5:30 a.m. ET

Context: Financial distress in multiple U.S. toll roads over the past decade

- Dulles Greenway, VA
- South Bay Expressway, CA
- I-495 Capital Beltway, VA
- Pocahontas Parkway, Richmond, VA
- Indiana Toll Road, IN
- SH-130, TX
- San Joaquin Hills Transportation Corridor Agency 73 toll road, CA
- LA 1 Expressway, LA

Most promising revenue risk mechanisms for U.S. highways

- Present Value of Revenues (PVR)
- Minimum Revenue Guarantee (MRG)
- Contingent Finance Support (CFS)
- Availability Payment (AP) & Revenue Sharing
- Innovative Finance Programs (IFP)

Analytical Framework and Research Approach

Developer perspectives on revenue risk: Lenders' and Developer/equity investors' concerns

- Lenders receive only interest (no upside) and therefore tend to be more conservative than Developers
- Developers/equity investors bear full upside/downside revenue risk of volatile dividend payments:
  - Therefore, Developers expect commensurate return
  - However, Developers/equity investors have following priorities (1= highest), which may explain views on revenue risk
    1. Obtain debt financing
    2. Win bid and successfully operate concession
    3. Earn cash flows to obtain or exceed expected equity return

Public Agency perspectives on revenue risk: Value for money vs. access to private capital

- Value for money (VfM):
  - Optimal risk allocation: risk to be transferred to party best positioned to manage risk at lowest costs
  - Revenue risk inherently difficult to manage for both parties
  - Public agency possibly somewhat better positioned to accept revenue risk as it has (some) control over regional development
  - If revenue risk is transferred, Developer will either price risk (possibly inefficient risk pricing) or may decide not to bid
  - Retaining revenue risk may therefore create VfM
- Access to private capital (financeability and fiscal impact):
  - P3 can accelerate projects through access to private capital
  - Fiscal perspective, based on non-recourse off-balance sheet benefits of P3s, may encourage Agencies to transfer revenue risk

Discussion Paper employs four criteria to evaluate revenue risk sharing mechanisms

- **Value for money:** How does proposed revenue risk sharing mechanism affect VfM? Does it follow optimal risk allocation?
- **Fiscal impacts:** What are fiscal impacts of proposed revenue risk sharing mechanism? Does it allow for off-balance sheet financing? Direct or contingent liabilities?
- **Financeability:** How does proposed mechanism affect Developer's ability to finance project? Does it help attract private capital and/or reduce cost of capital?
- **Ease of implementation:** How difficult is it to monitor proposed revenue risk sharing mechanism? Potential for unintended bidding behavior? Ease of comparison of bids in procurement stage?

Questions?

Submit a question using the chat box

Present Value of Revenues

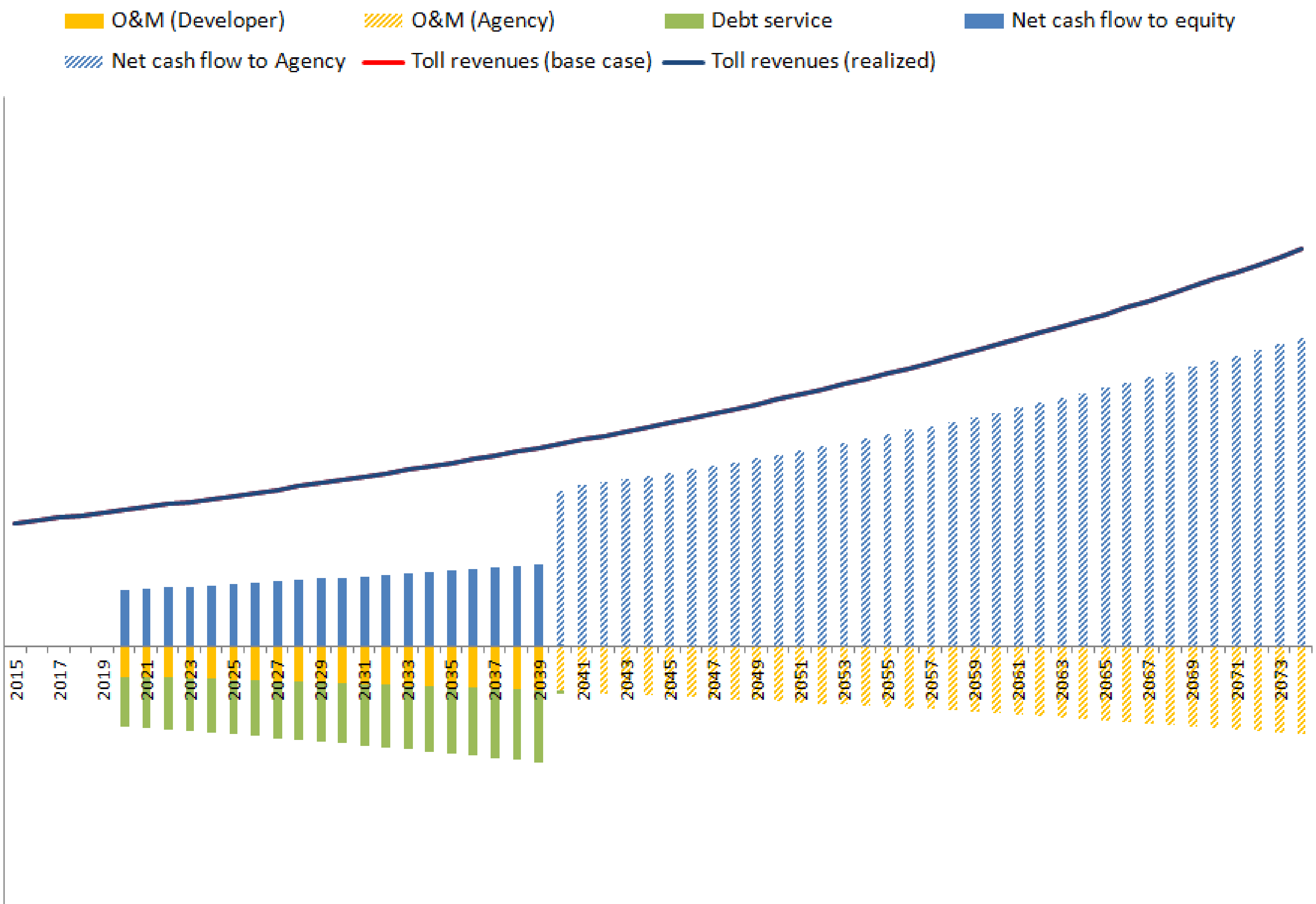
Present Value of Revenues (PVR): Protects Developer but requires flexible Lenders

Toll concession ends when present value of realized revenues to Developer equals bid PVR. End date of concession is flexible, potentially with cap on maximum concession length.

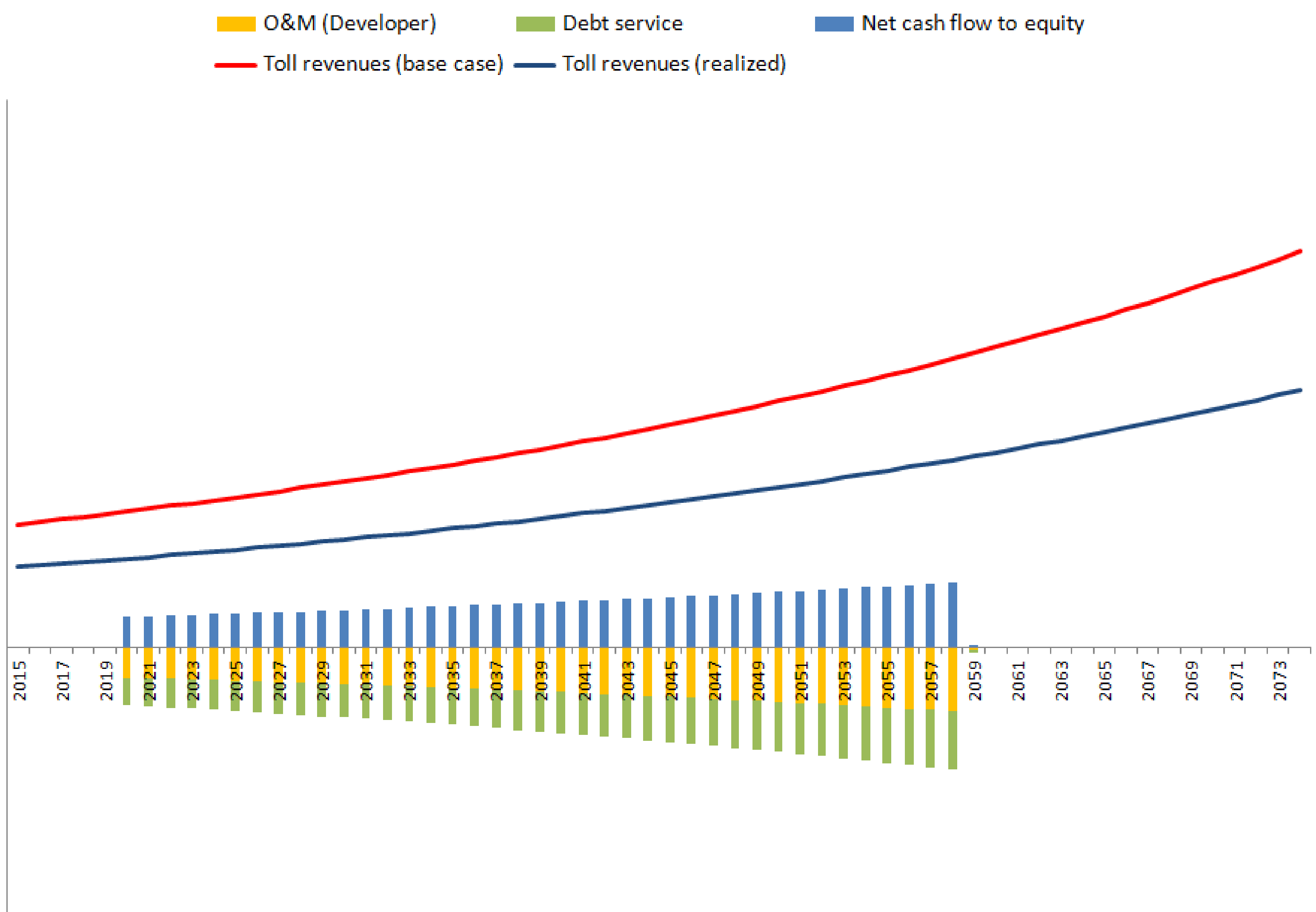
- **VfM**: Developer is protected against downside revenue scenarios, so inefficient risk pricing is unlikely
- **Fiscal**: No immediate impact on Agency, but contract extension means Agency will start receiving revenues later.
- **Financeability**: Lenders are protected, but Lenders need to be flexible as repayment is made
- **Implementation**: Gross revenues are easily monitored; key issue is correct weighted average cost of capital (WACC) in PVR bid and performance penalties to incentivize Developer.

PVR: Base revenues case

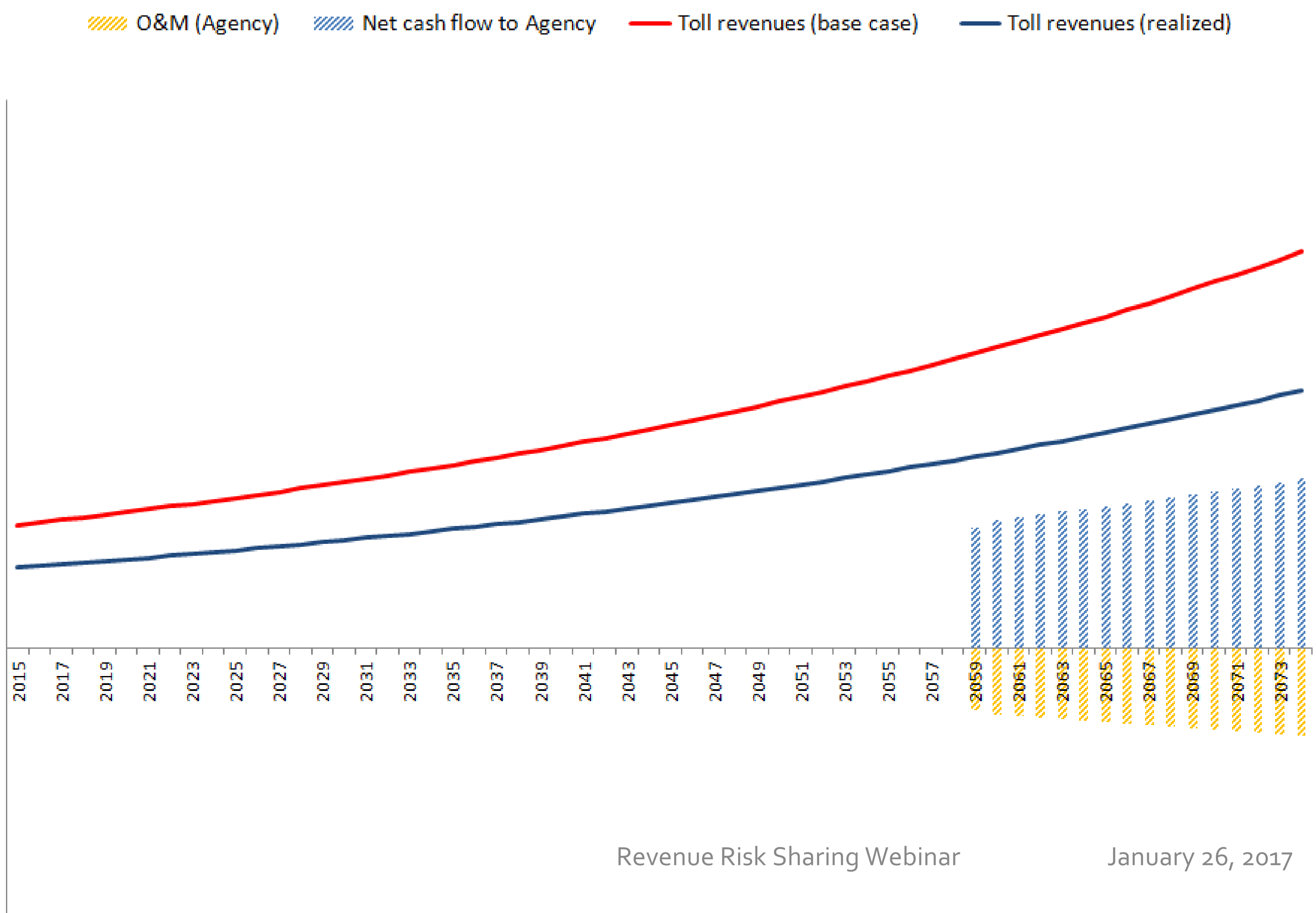
Developer & Agency perspective



PVR: Extreme downside revenues case
Developer perspective



PVR: Extreme downside revenues case
Agency perspective



Minimum Revenue Guarantee

Minimum Revenue Guarantee (MRG): Facilitates financing but creates larger contingent liabilities

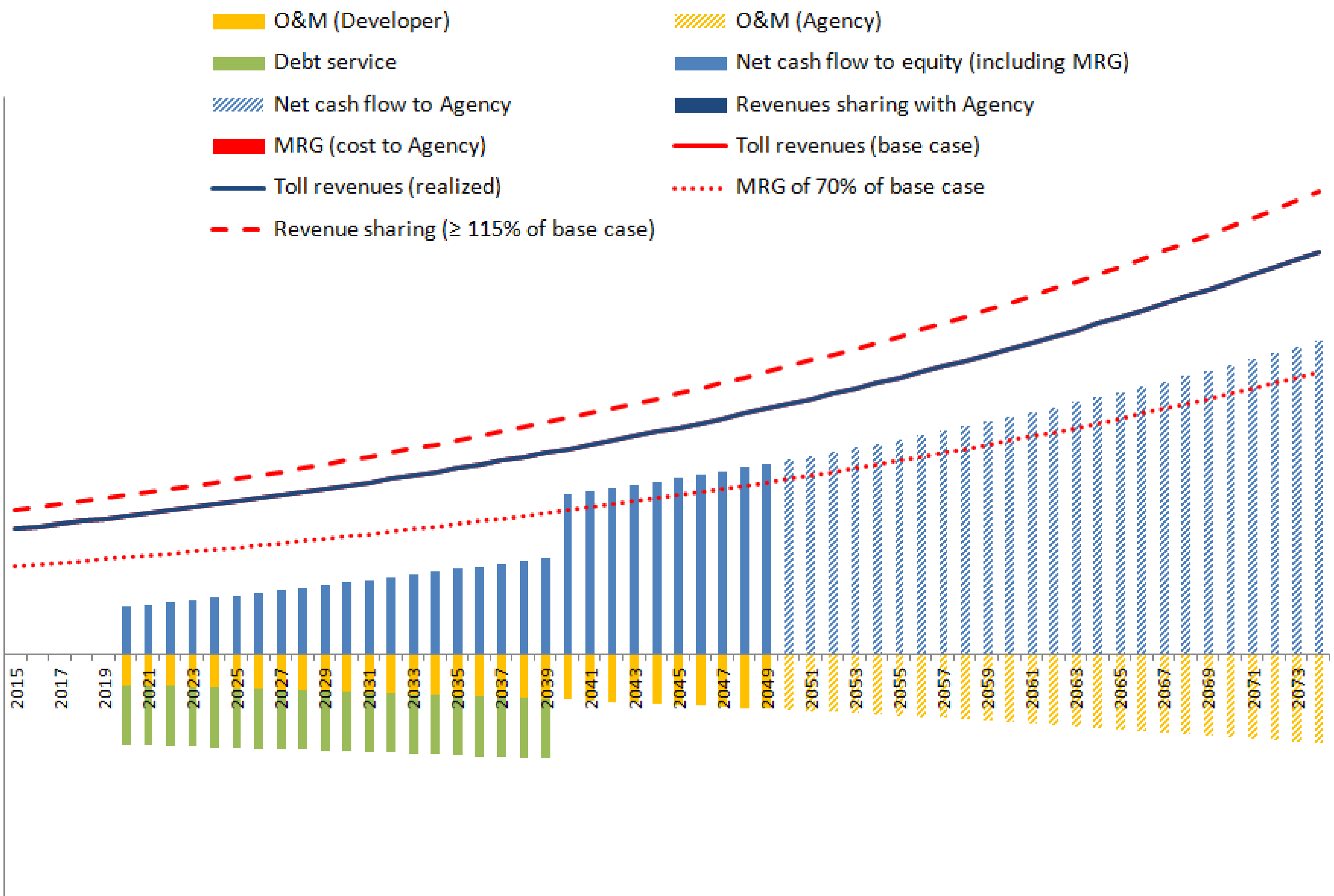
Agency sets minimum revenue line and pays shortfall to Developer when realized revenues fall below guaranteed line. From reciprocity perspective, protect not only downside, but also share in upside (revenue sharing bands). Agencies not in position to accept significant fiscal liabilities, combination of PVR and lower MRG could be an option.

- **VfM**: Developer protected so inefficient pricing unlikely
- **Fiscal**: Relatively large MRG could be defensible, yet creates immediate contingent fiscal liabilities
- **Financeability**: Creates certainty for Lenders
- **Implementation**: Very effective and transparent mechanism that is relatively easy to implement; key challenges are revenue guarantee level and valuation of contingent liability

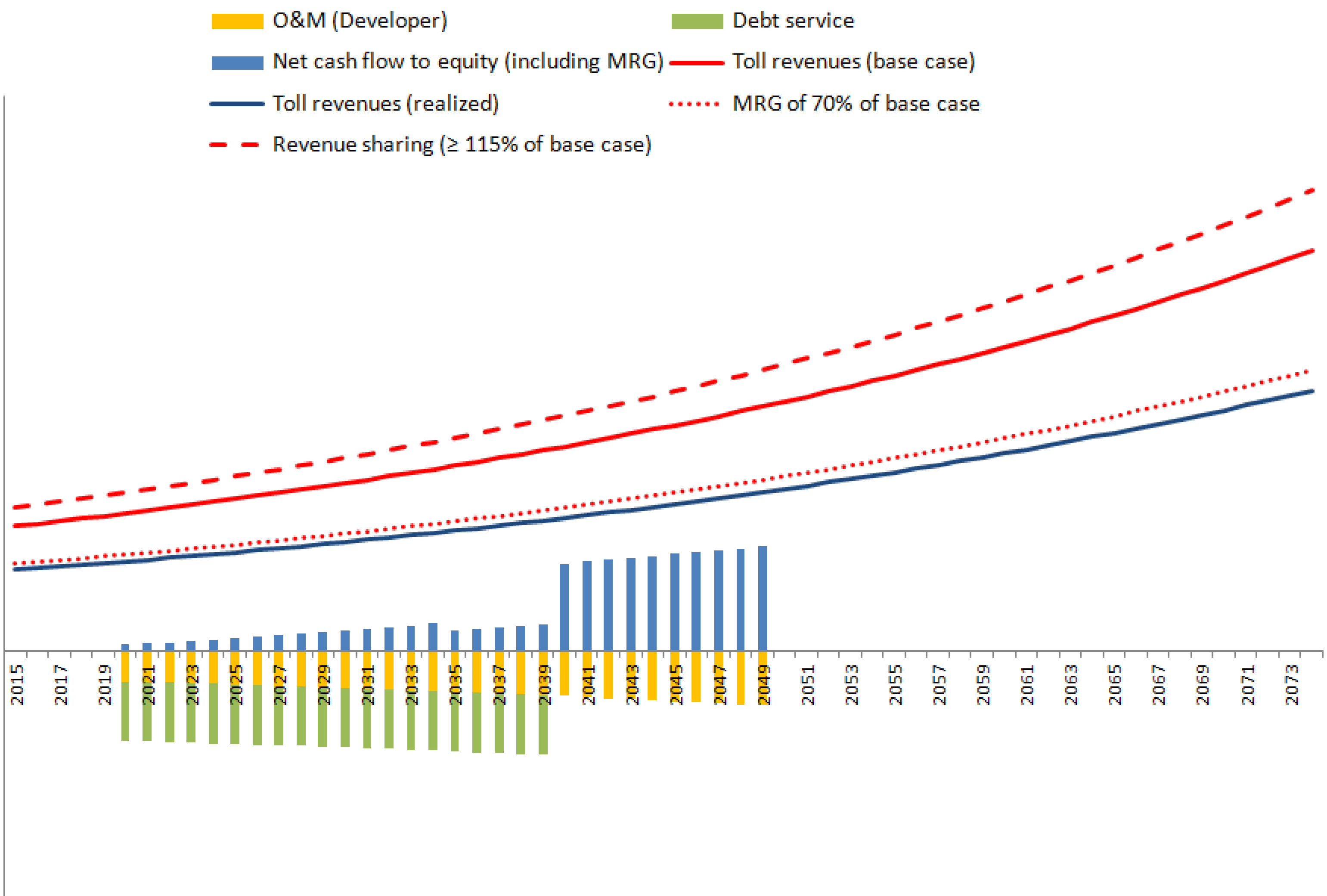
MRG: Raises issues of direct vs. contingent liabilities or certain vs. uncertain costs to Agency

- Example of direct liability: upfront subsidy to Developer (Agency ***will*** incur cost regardless of traffic)
- Example of contingent liability: Minimum Revenue Guarantee to Developer (Agency ***may*** incur cost, depending on realized traffic/revenue)
- Contingent liabilities can help share revenue risk between Developers and Agencies:
  - Contingent liability can cause significant fiscal burden if traffic/revenues are lower than expected
  - Uncertainty in contingent liabilities makes valuation or fair comparison with direct liabilities difficult ($100M upfront subsidy vs. 20 year MRG of $15M per year)

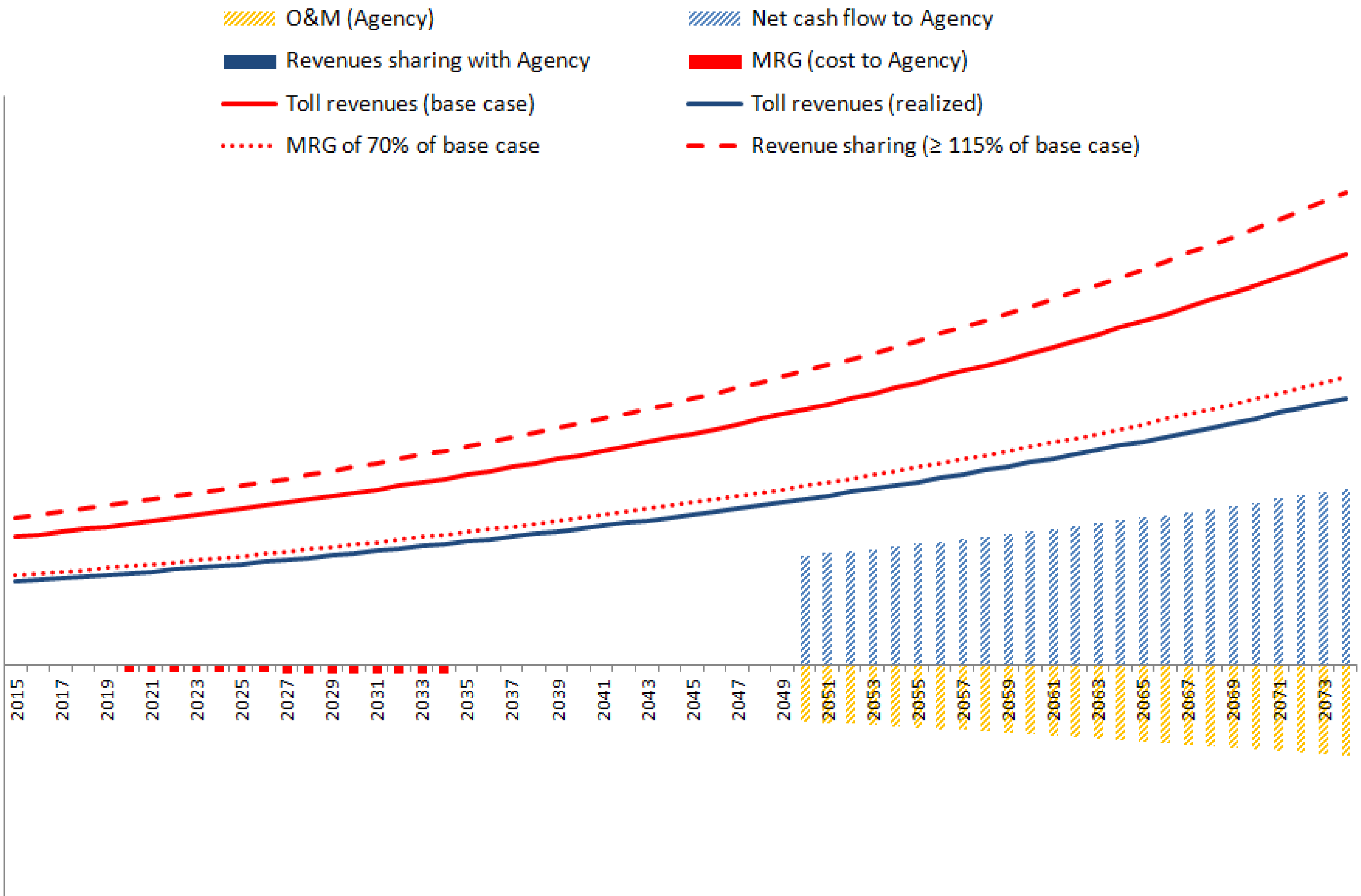
MRG: Base revenues case
Developer & Agency perspective



MRG: Extreme downside revenues case *Developer perspective*



MRG: Extreme downside revenues case
Agency perspective



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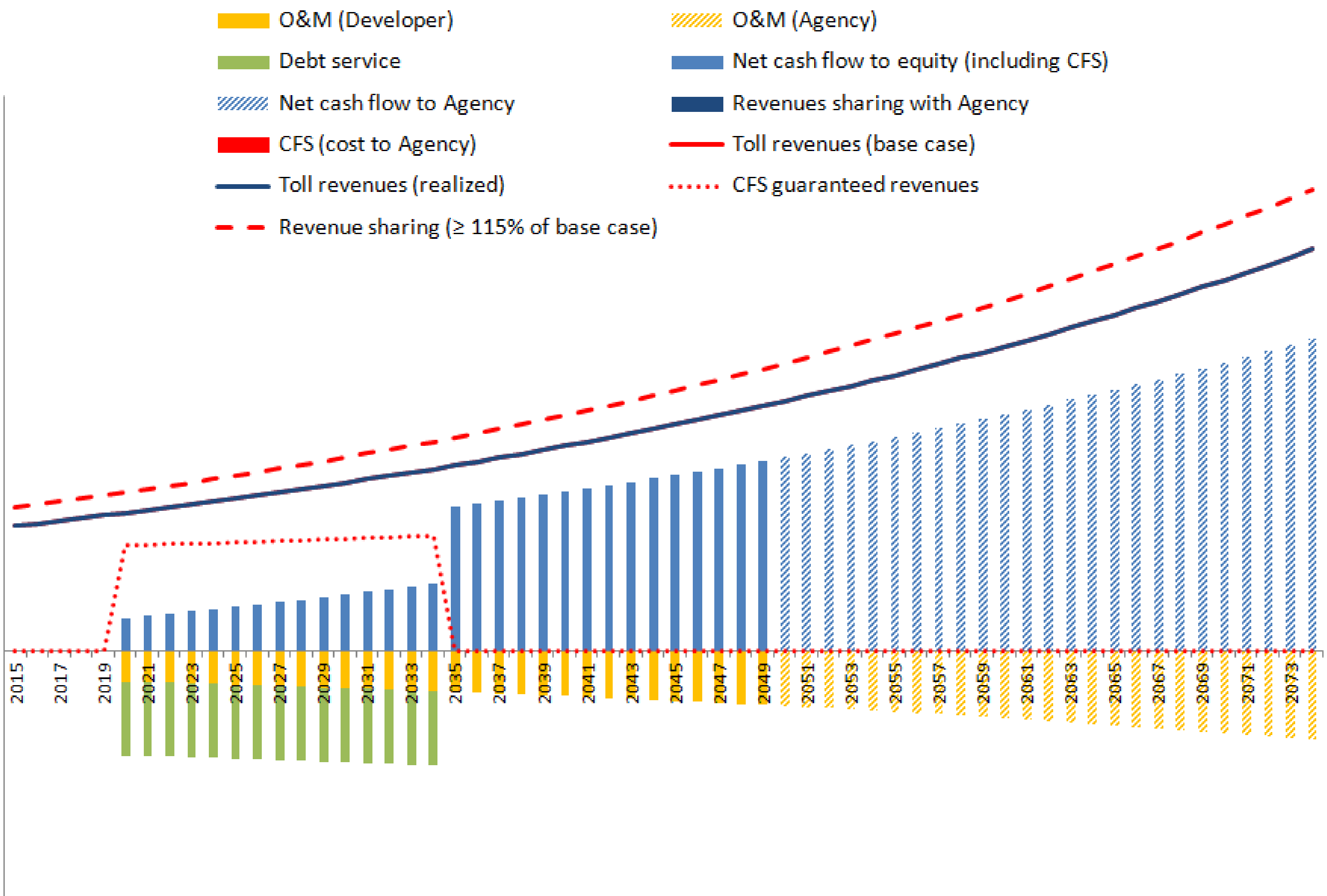
Contingent Financial Support

Contingent Finance Support (CFS): Similar to MRG, also covering O&M risks and being tested in U.S.

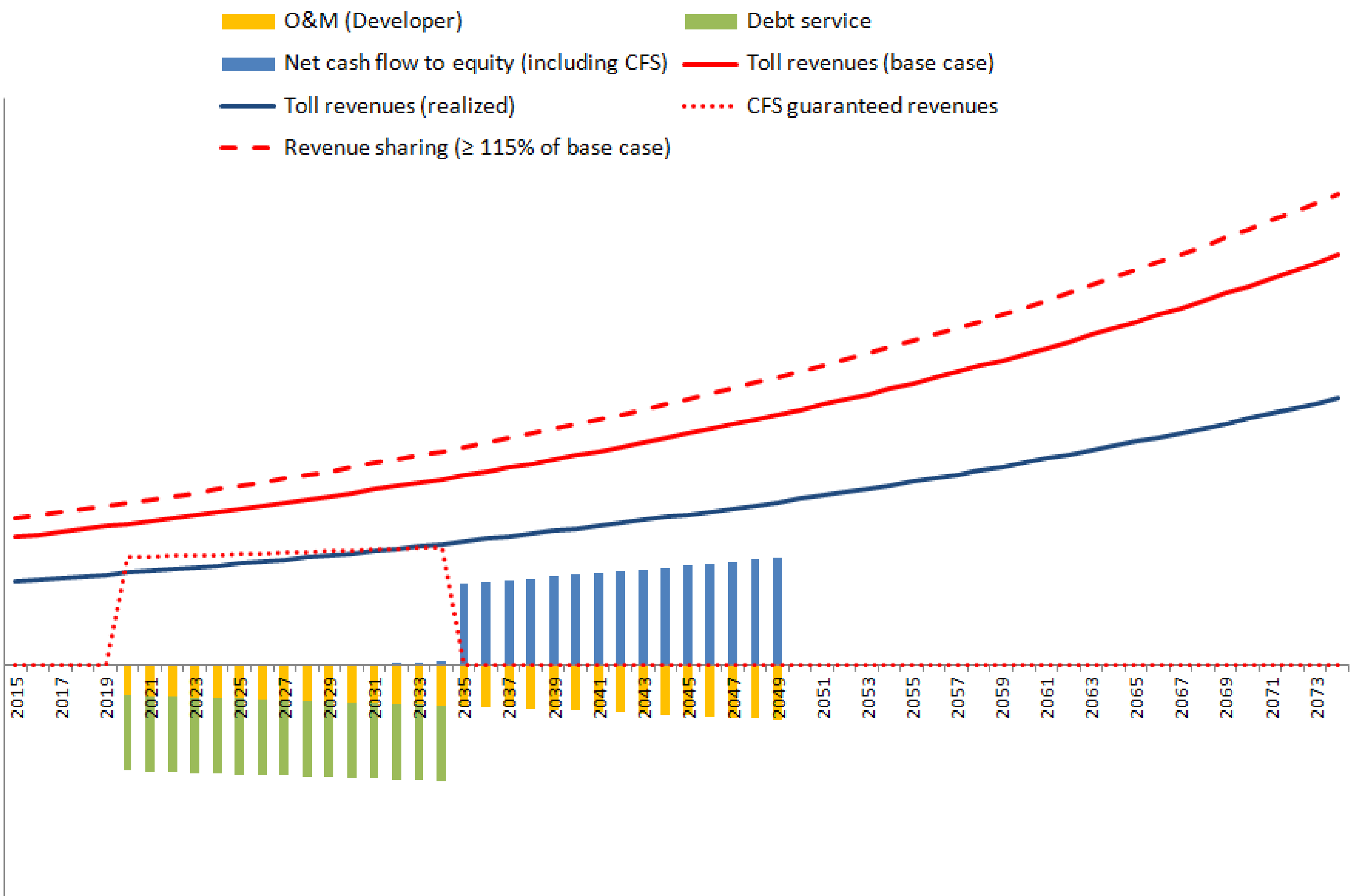
Under CFS, Agency guarantees that project will be able to re-pay debt to Lenders, even under downside scenarios. Similar to MRG, but downside scenarios could be caused by 1) lower than expected revenues (as under MRG) or 2) higher operating costs.

- **VfM**: Sub-optimal compared to MRG since Developer should be in best position to manage lifecycle costs
- **Fiscal**: Creates contingent liabilities
- **Financeability**: Lenders receive excellent protection
- **Implementation**: Being tested in U.S. market (NC I-77) with average implementation issues; key challenges are revenue guarantee level and valuation of contingent liability

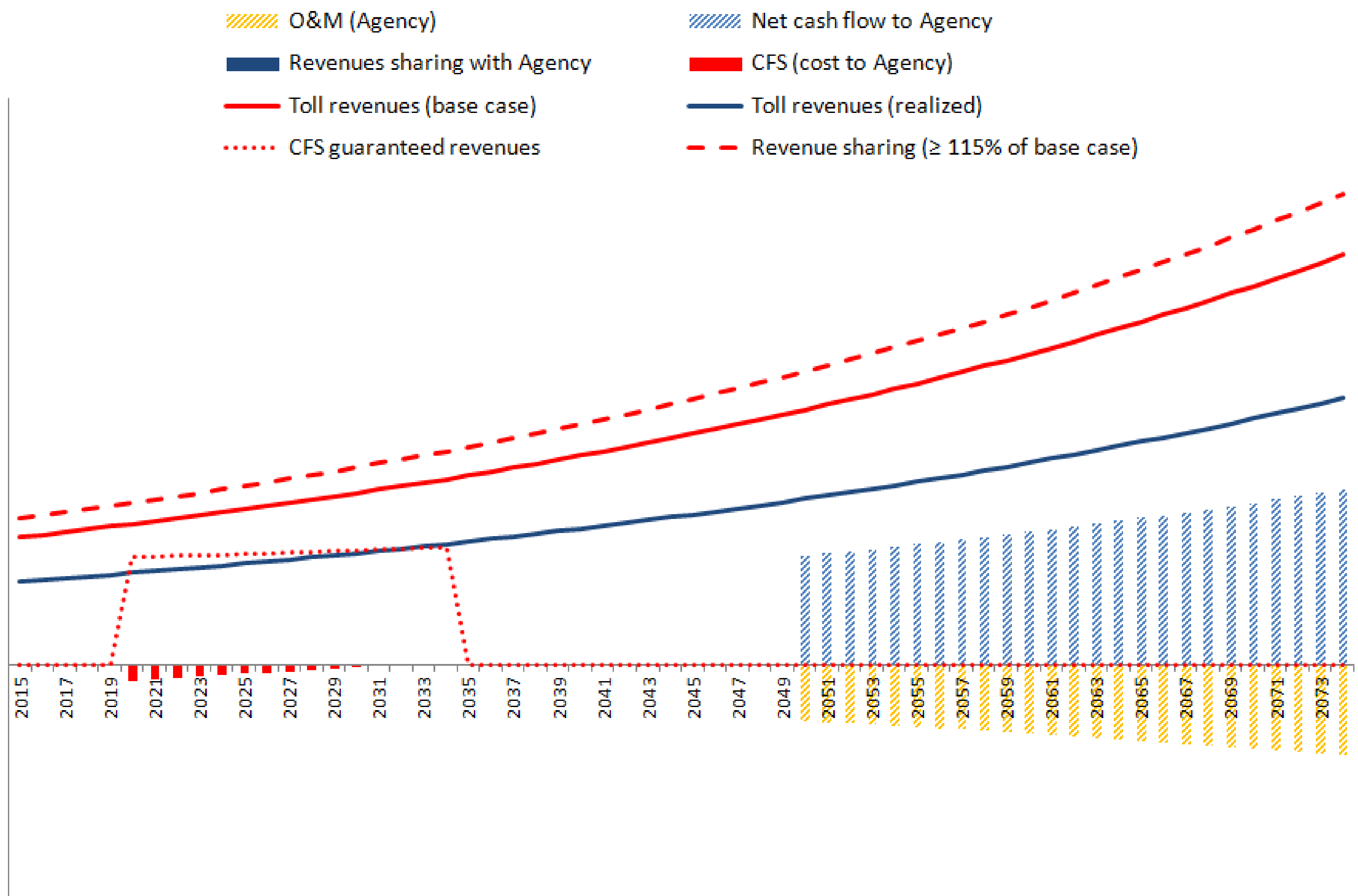
CFS: Vase revenues case
Developer & agency perspective



CFS: Extreme downside revenues case
Developer perspective



CFS: Extreme downside revenues case
Agency perspective



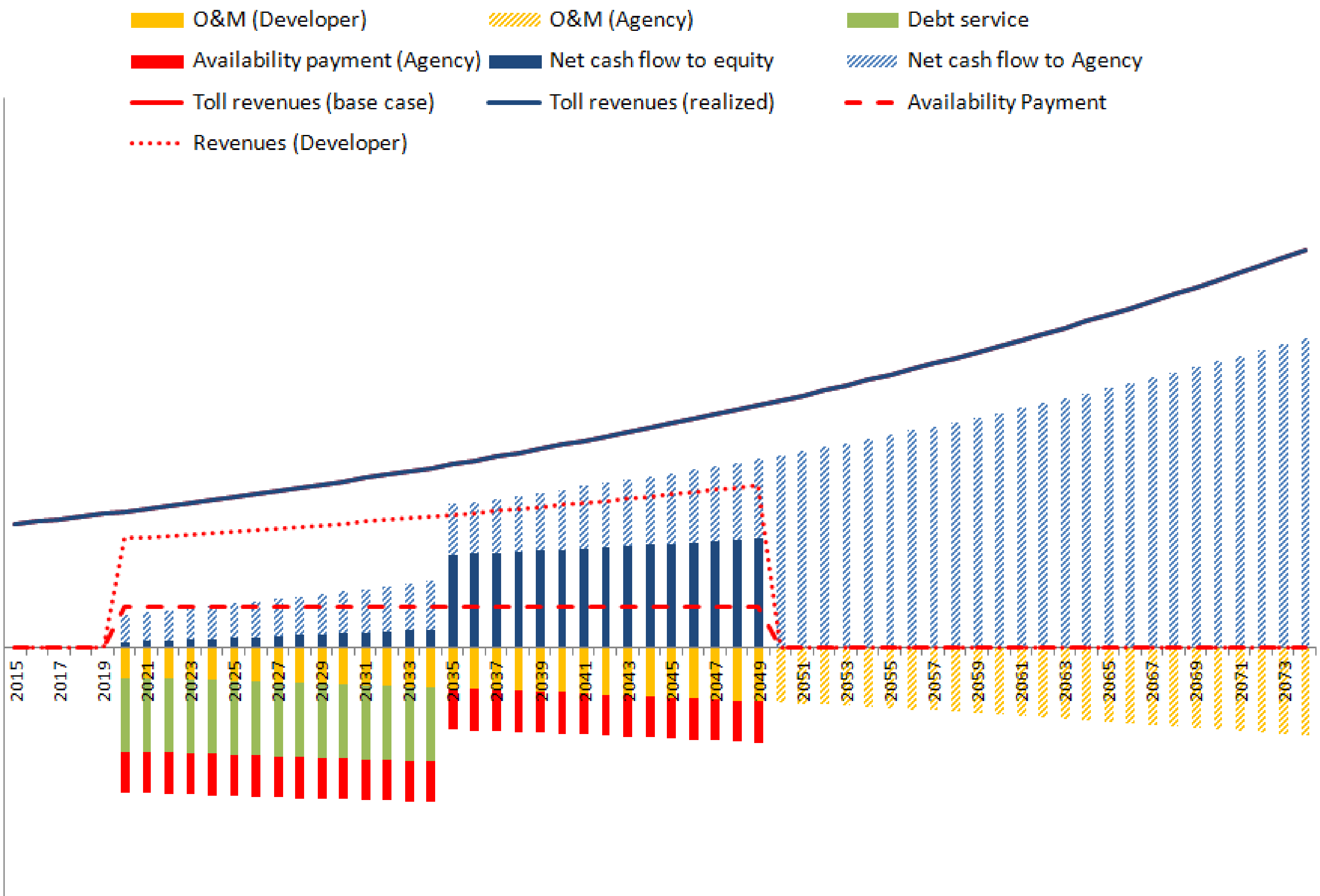
Availability Payment with Revenue Sharing

Availability Payment (AP) with Revenue Sharing: Providing level of certainty while sharing revenues

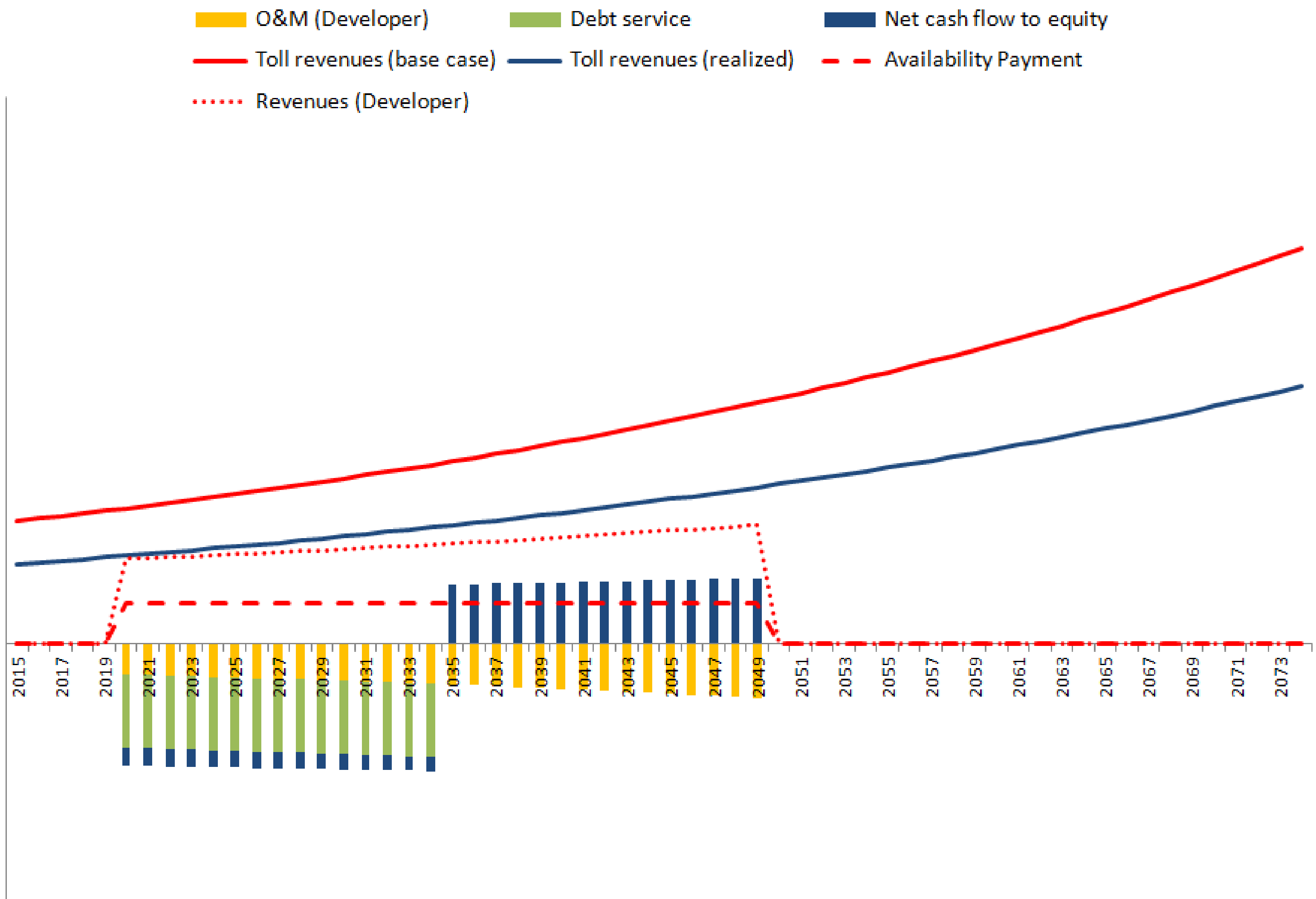
Developer receives AP (after performance deductions) and a share of all realized revenues, with remainder of revenues flowing to Agency.

- **VfM**: AP component provides certainty to Developer and Lenders, hence reducing inefficient risk pricing while revenue risk exposure incentives Developer
- **Fiscal**: Creates long-term liabilities but also generates future revenues for Agency
- **Financeability**: Improved financeability compared to full revenue risk transfer, but credit analysis uncertainty – AP or toll?
- **Implementation**: Coherent procurement strategy required, either bid AP level or level of revenue sharing

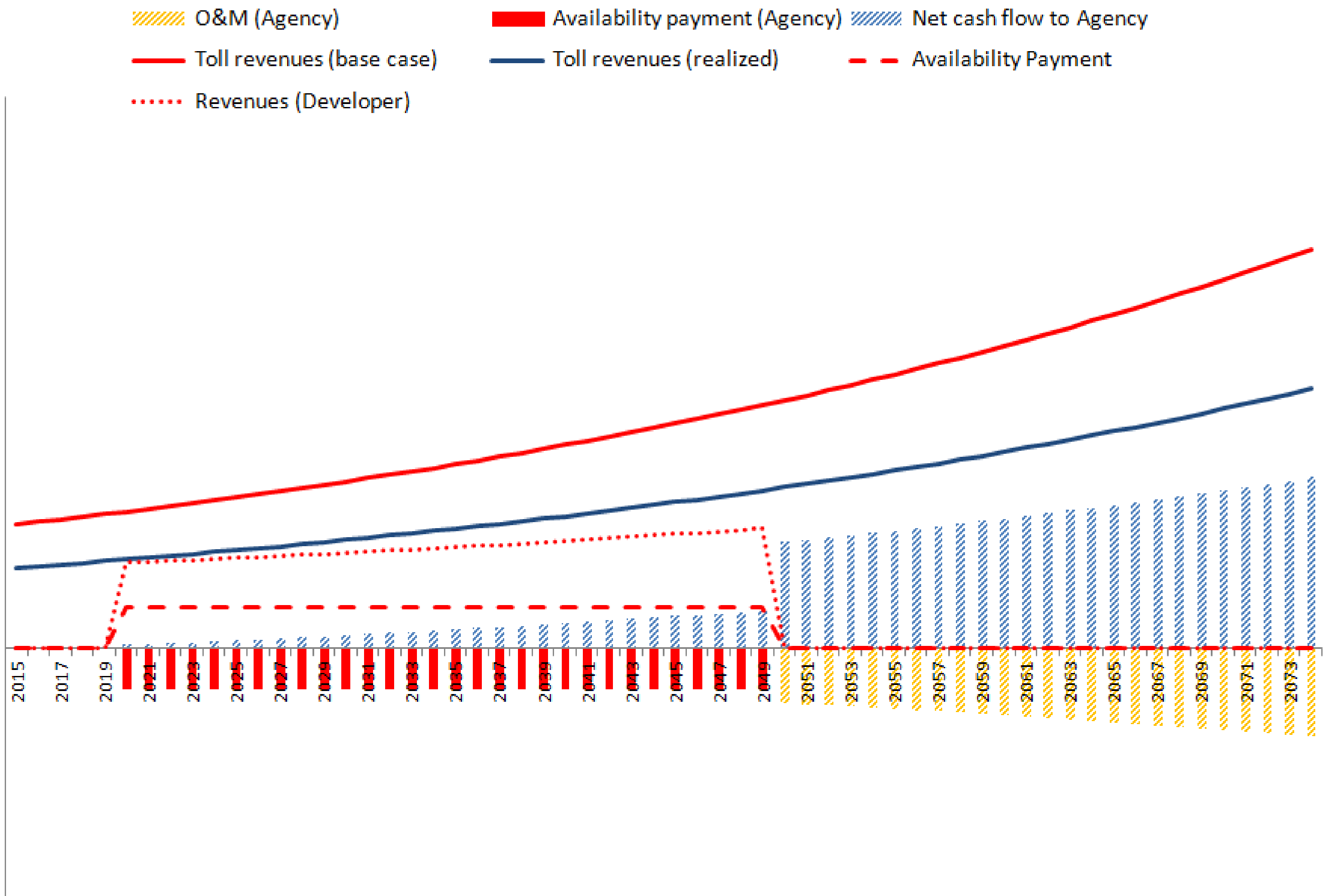
AP with Revenue Sharing: Base revenues case
Developer & Agency perspective



AP with Revenue Sharing: Extreme downside revenues case, *Developer perspective*



AP with Revenue Sharing: Extreme downside revenues case, *Agency perspective*



Questions?

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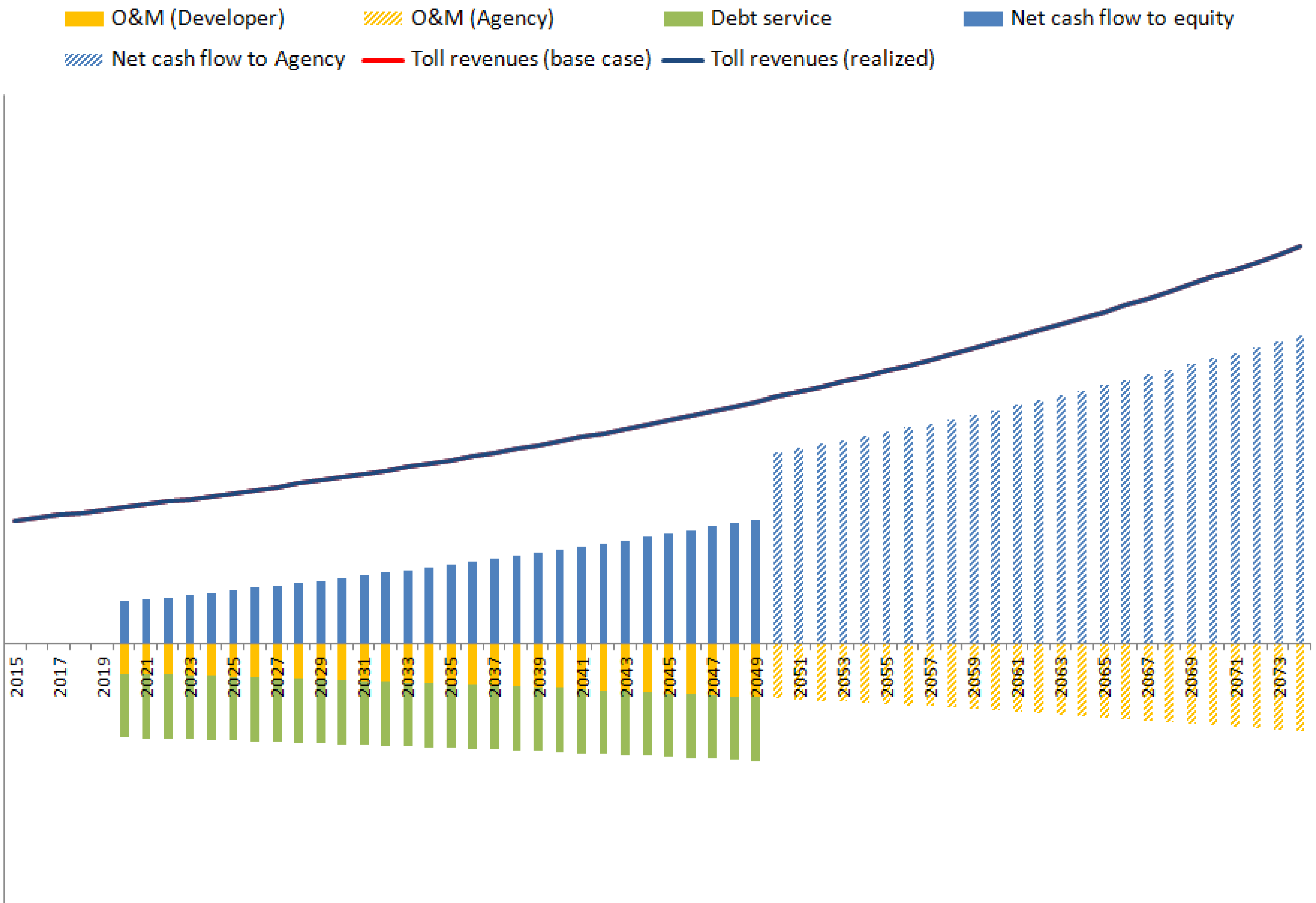
Innovative Finance Programs

Innovative Finance Programs (IFP): Flexible financing terms to absorb revenue risk

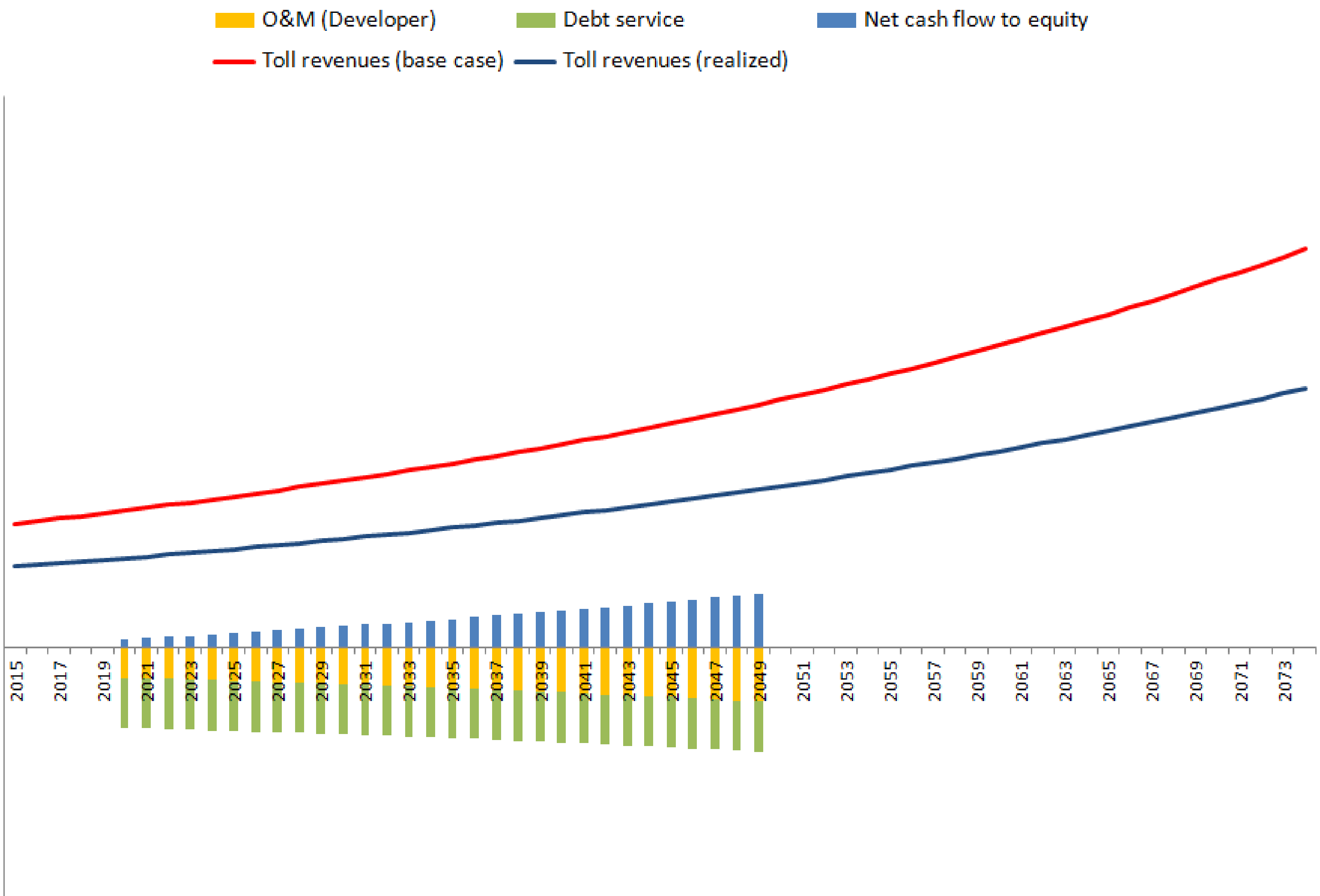
Flexible financing terms can reduce cash flow pressures: Mandatory and scheduled debt service payments (as TIFIA), variable interest rates depending on level of realized revenues.

- **VfM**: If Lenders can absorb (some) revenue risk, IFP should indeed reduce inefficient risk pricing and improve VfM
- **Fiscal**: Projects receive implicit subsidy if financing terms are not market-based, which may increase if interest rate or debt service are linked to revenues (contingent liability)
- **Financeability**: If public Lenders were to provide flexible financing terms, other Lenders may be better protected
- **Implementation**: IFPs do not pose major implementation difficulties but may require changes in legislation

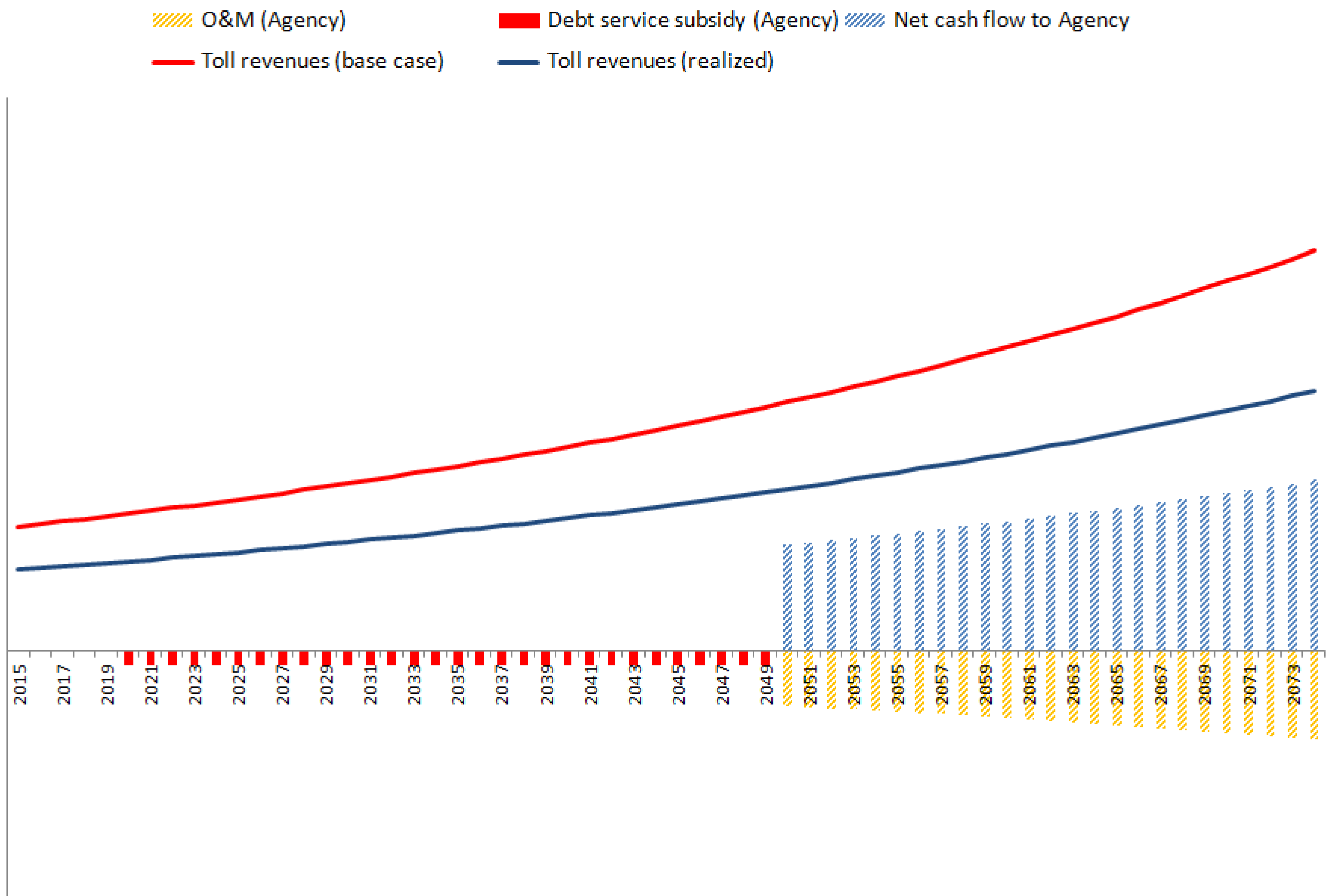
IFP Flexible Interest Rate: Base revenues case
Developer & Agency perspective



IFP Flexible Interest Rate: Extreme downside revenues case, *Developer perspective*



IFP Flexible Interest Rate: Extreme downside revenues case, *Agency perspective*



Summary of key characteristics of revenue risk sharing mechanisms

Criterion	Present Value of Revenues	Minimum Revenue Guarantee	Contingent Finance Support	Availability Payment & Revenue Sharing	Innovative Finance Programs
Value for Money	●●●	●●●	●●●	●●●	●●
Fiscal Impact	●●●	●●	●●	●	●●
Financeability	●●	●●●●	●●●●	●●	●●●
Ease of Implementation	●●●	●●●●	●●●	●●	●●●

***Key: More value or benefits* = ●●●● *Less value or benefits* = ●**

Questions?

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Upcoming P3 Webinars

- **February 2** P3 Project Financing
- **February 9** Use of Performance Measures in P3s
- **February 16** P3 Projects in the U.S.

To register for the webinars, please visit:

http://www.fhwa.dot.gov/ipd/p3/toolkit/p3_value_webinars

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