

Global vaccine market

Global Vaccine and Immunization Research Forum

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Agenda

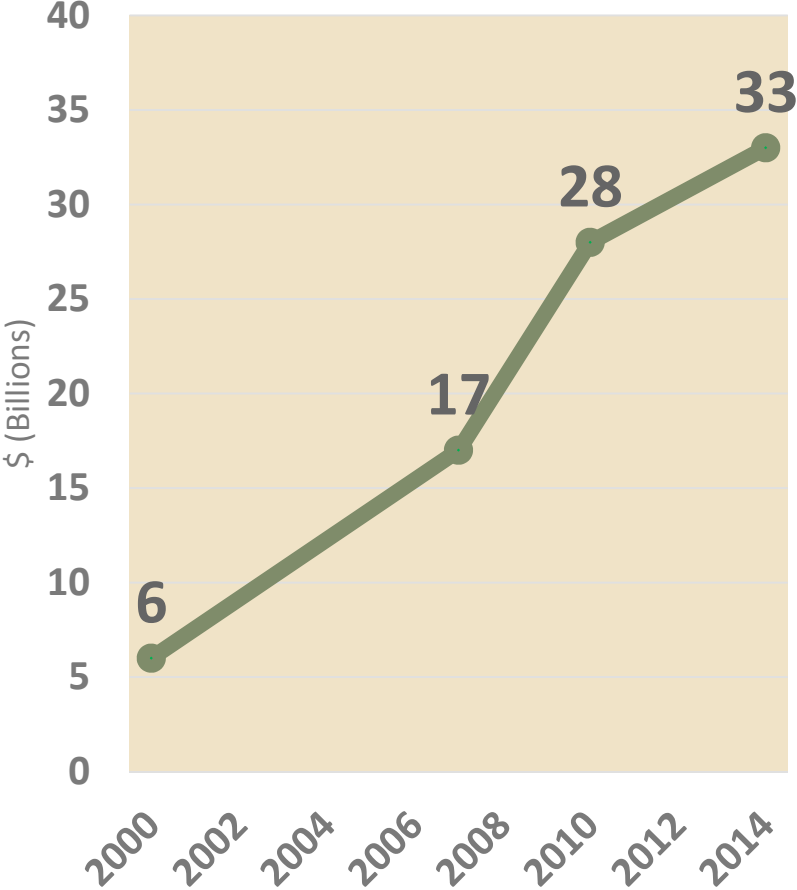
- Overview of global vaccine market
 - Demand
 - Supply
 - Financing
- Vaccine development and vaccine markets
- Product life-cycle

Demand – critical factors

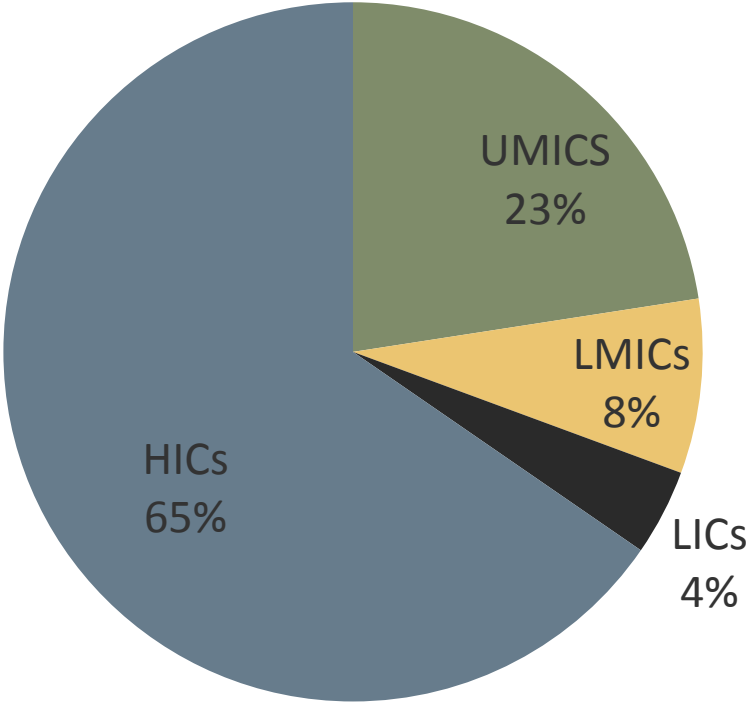
- Epidemiology:
 - Global and local;
 - Individual and community
- Perceived safety – vaccine hesitancy
- Perceived value for money
- Fit with delivery system

Demand – growing market

Vaccine Market Growth

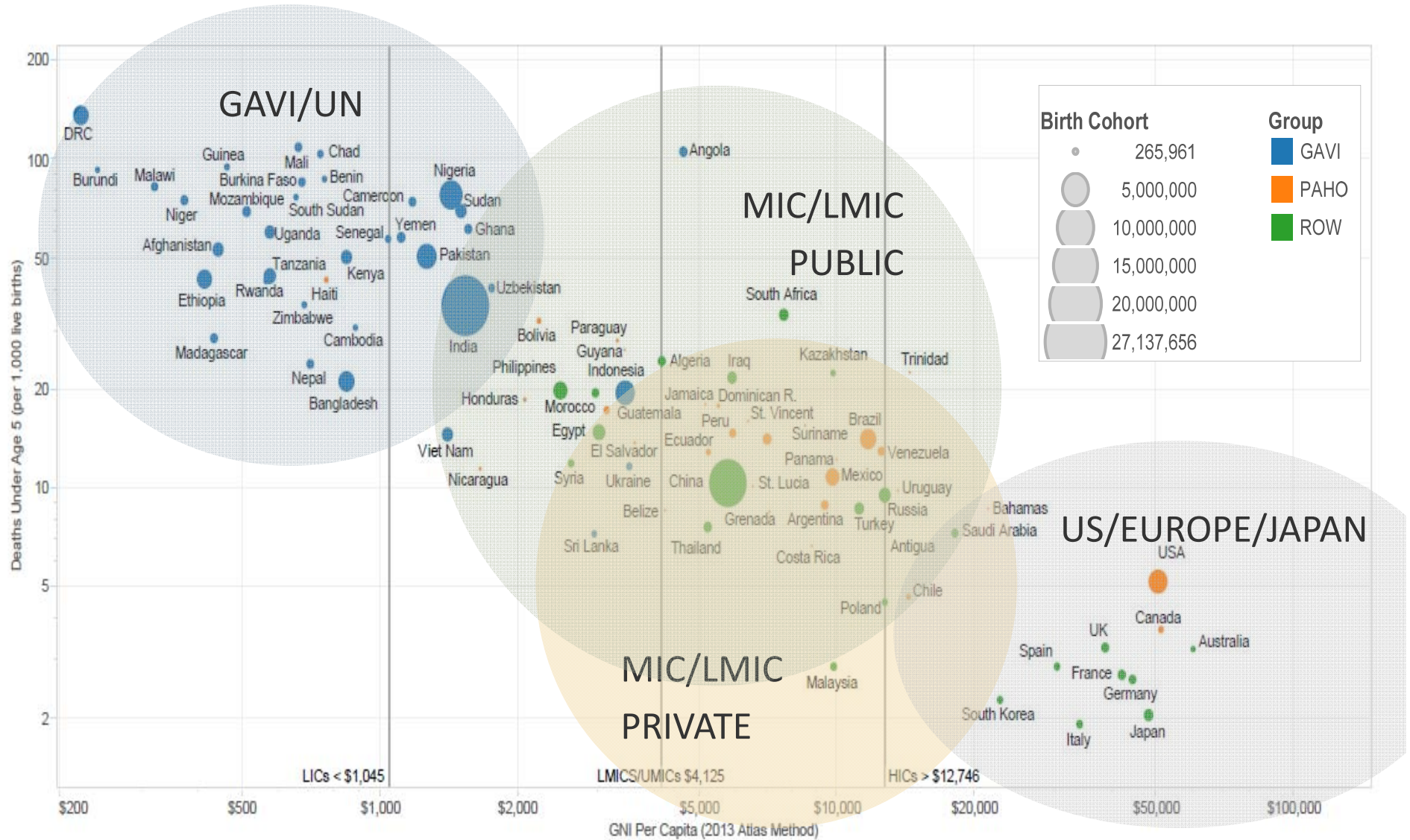


Vaccine Market Share 2014 (US\$ Approximate Value)



Source: Global Vaccine Market Model preliminary routine immunization market value analysis, March 2016

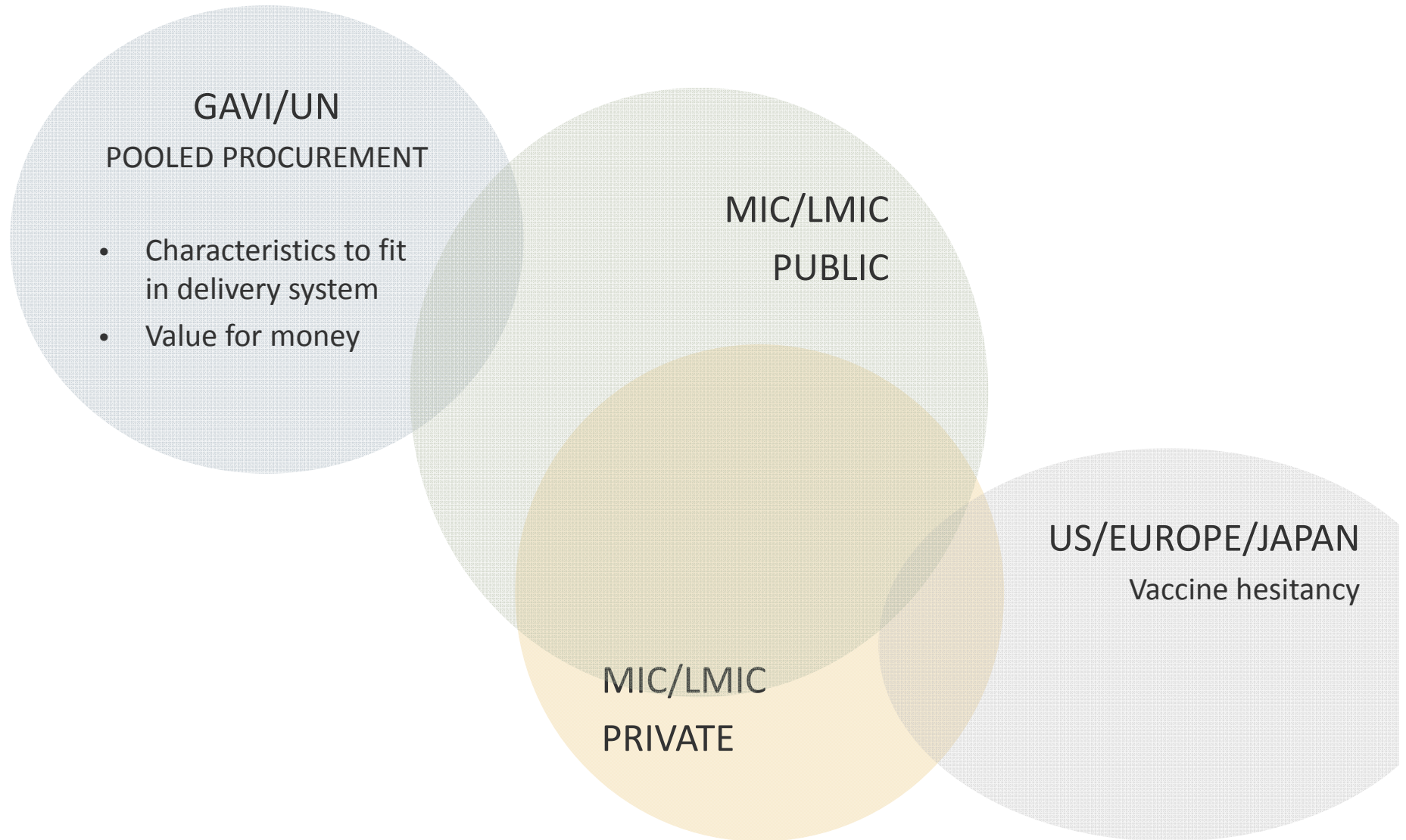
Global vaccine markets



Note: Only non-PAHO countries with >250,000 annual birth cohort included.

Source: World Bank GNI 2013, UNPD Population Prospects 2012 Edition, GAVI Website, September 2014

Global vaccine markets

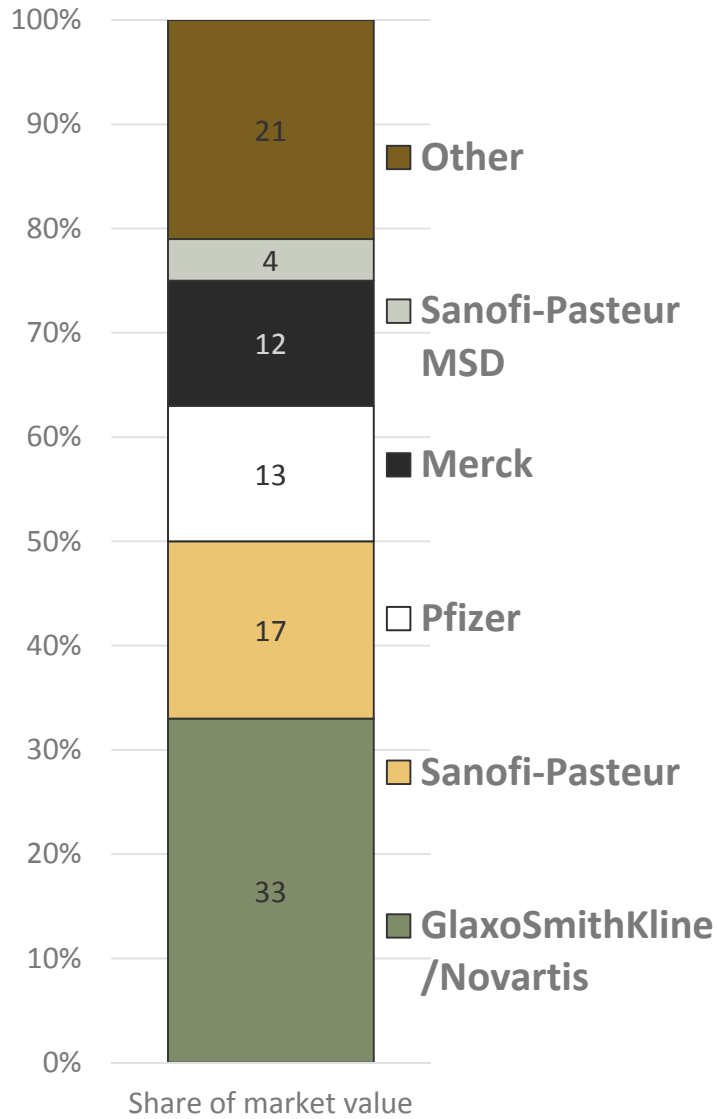


*Note: Only non-PAHO countries with >250,000 annual birth cohort included.
Source: World Bank GNI 2013, UNPD Population Prospects 2012 Edition, GAVI Website, September 2014*

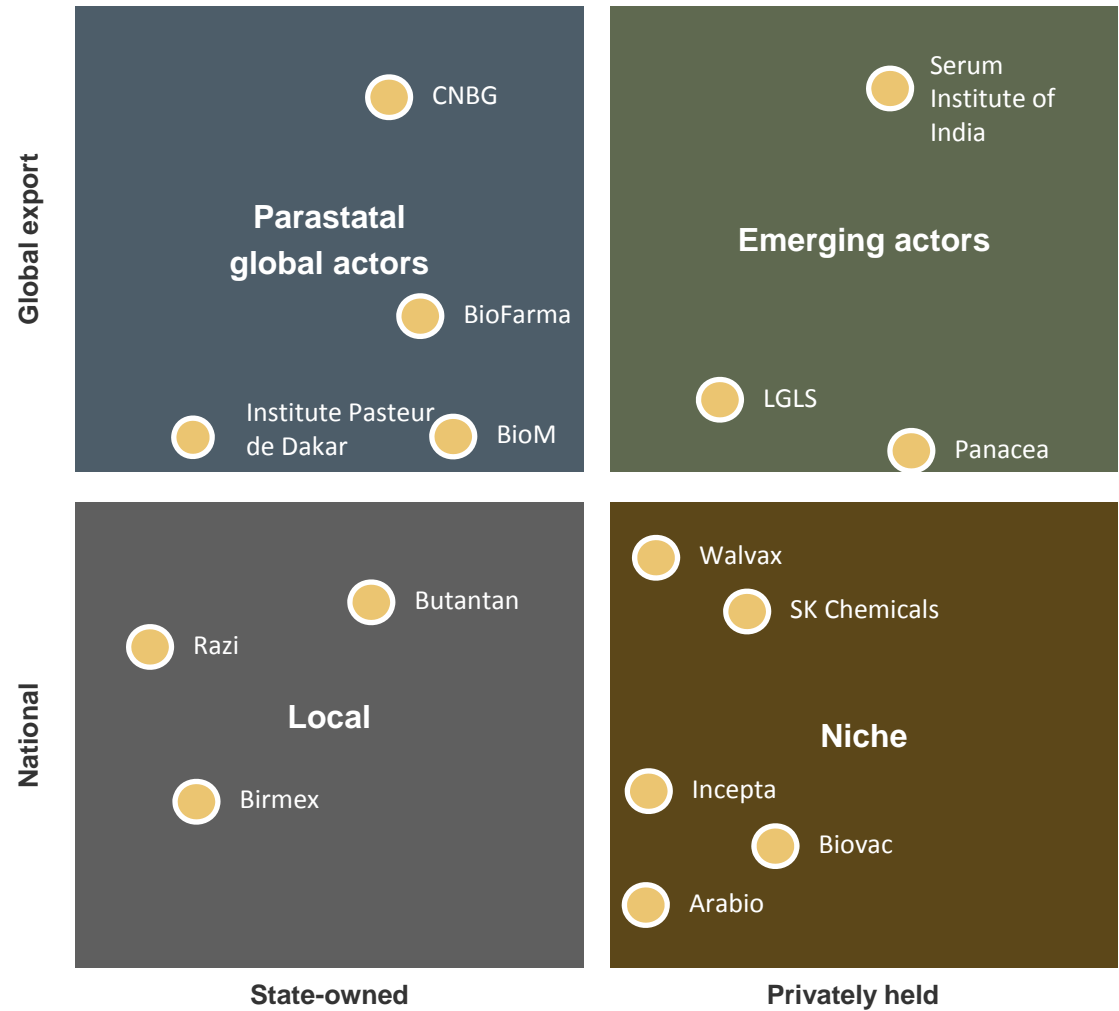
Supply

- Regulatory requirements: national and WHO PQ
- Predictability of demand
- Reliability and scale of production

Vaccine manufacturers

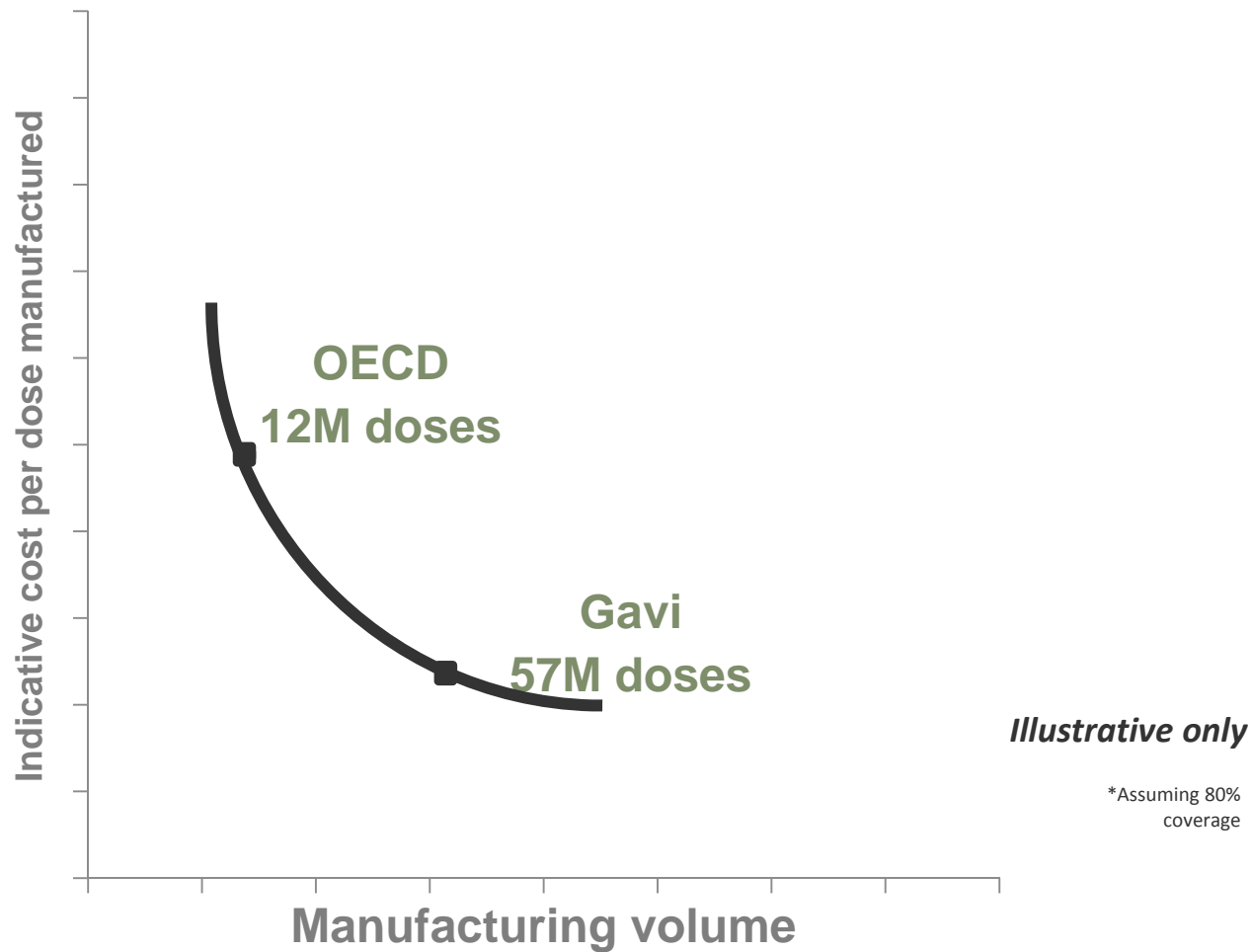


Developing country vaccine manufacturers



Source: Miloud Kaddar, WHO, "Global Vaccines Market Features and Trends" Presentation. Geneva, 2012; GAVI website, October 2014; PATH analysis

Scale matters in vaccine manufacturing: larger production can help drive down unit costs.

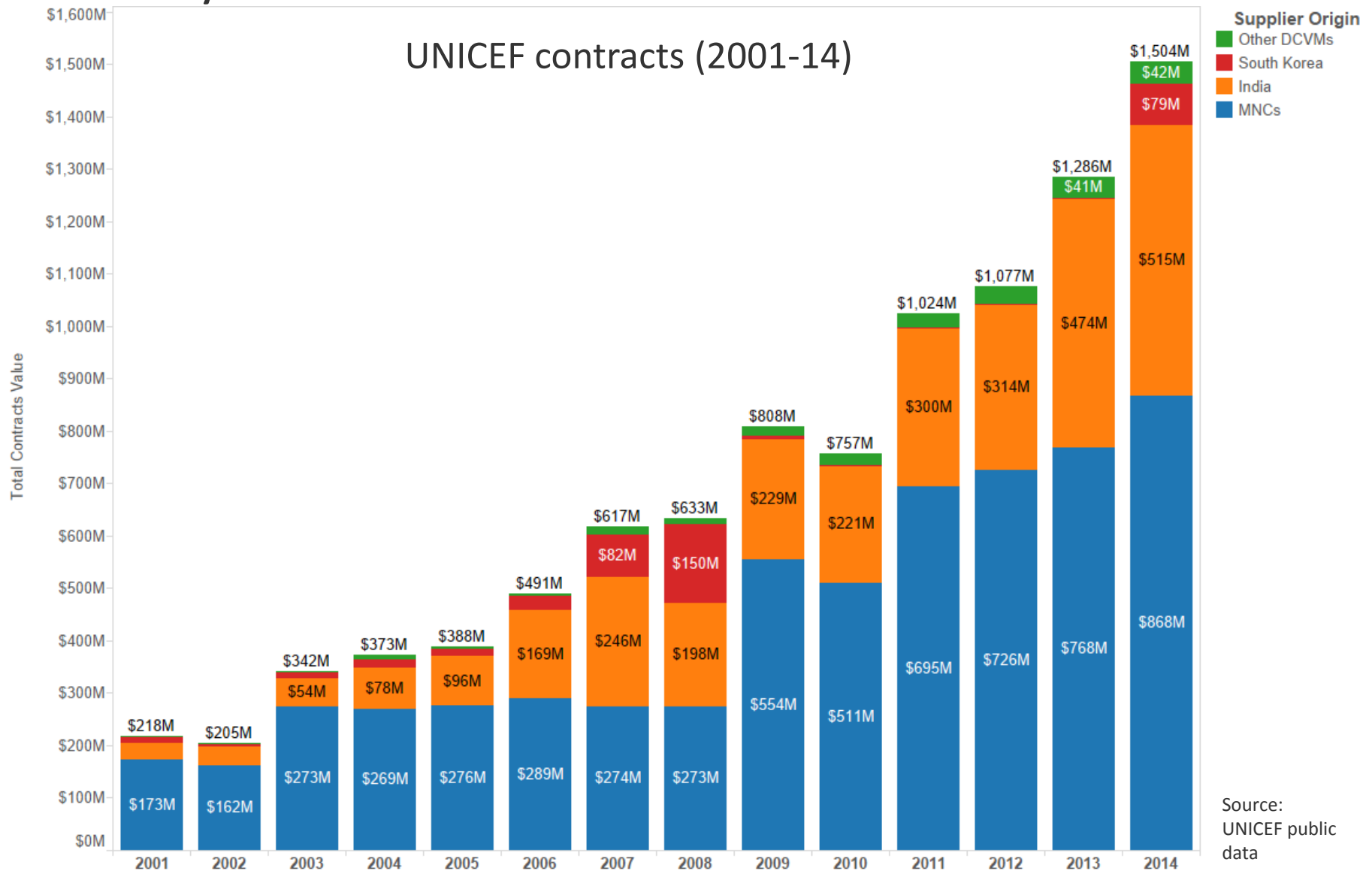


Source: United Nations, Department of Economic and Social Affairs, Population Division (2015). World Population Prospects: The 2015 Revision, custom data acquired via website.

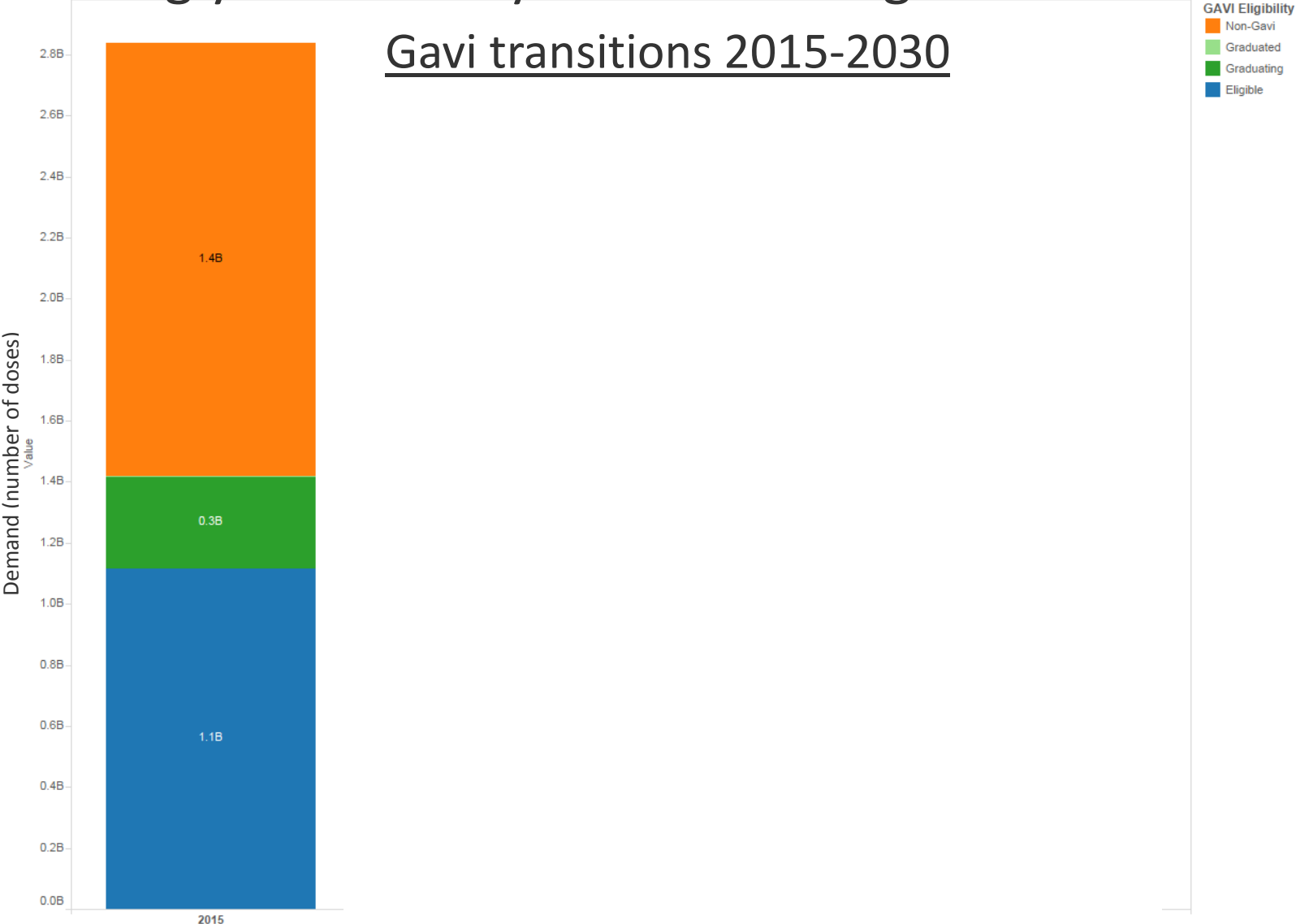
Financing

- Perceived value for money by market
- Tiered pricing
- Perceived reliability and timeliness of payor

The GAVI/UNICEF procurement has doubled in value in the last 5 years alone.

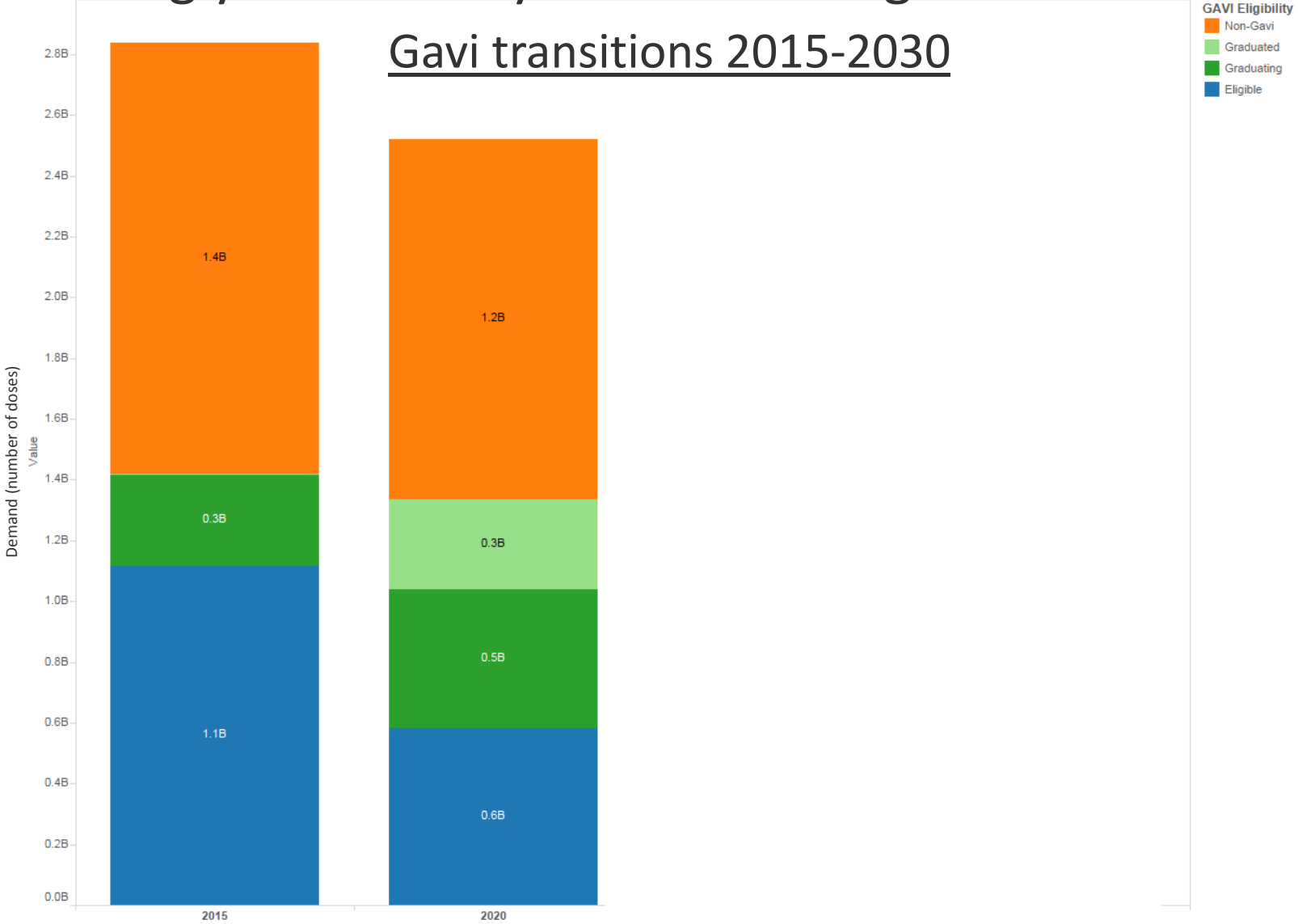


As countries transition from Gavi and ODA, vaccines will be increasingly financed by domestic budgets.



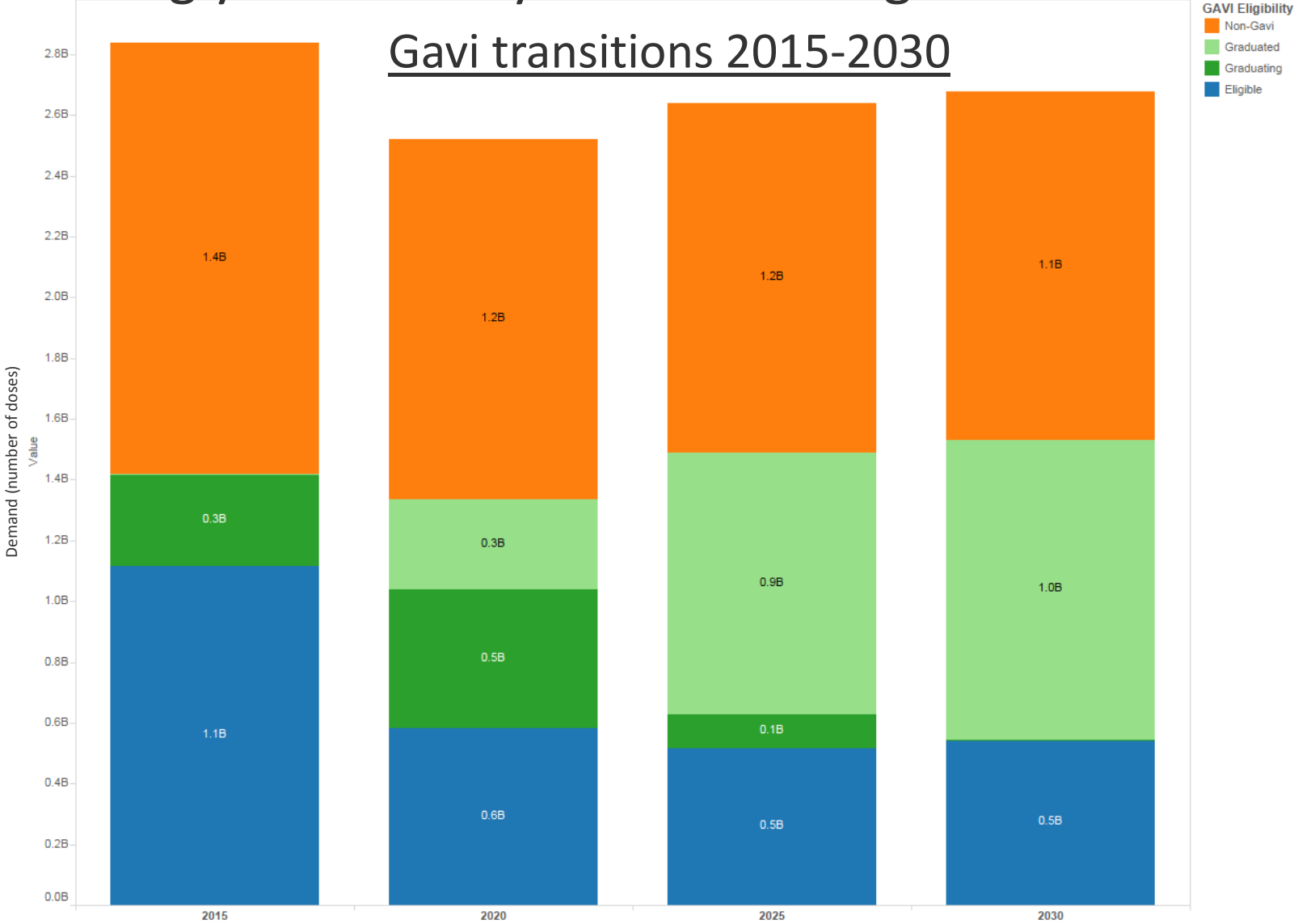
Source: PATH Global Vaccines Market Model. Provided for illustrative purposes only.

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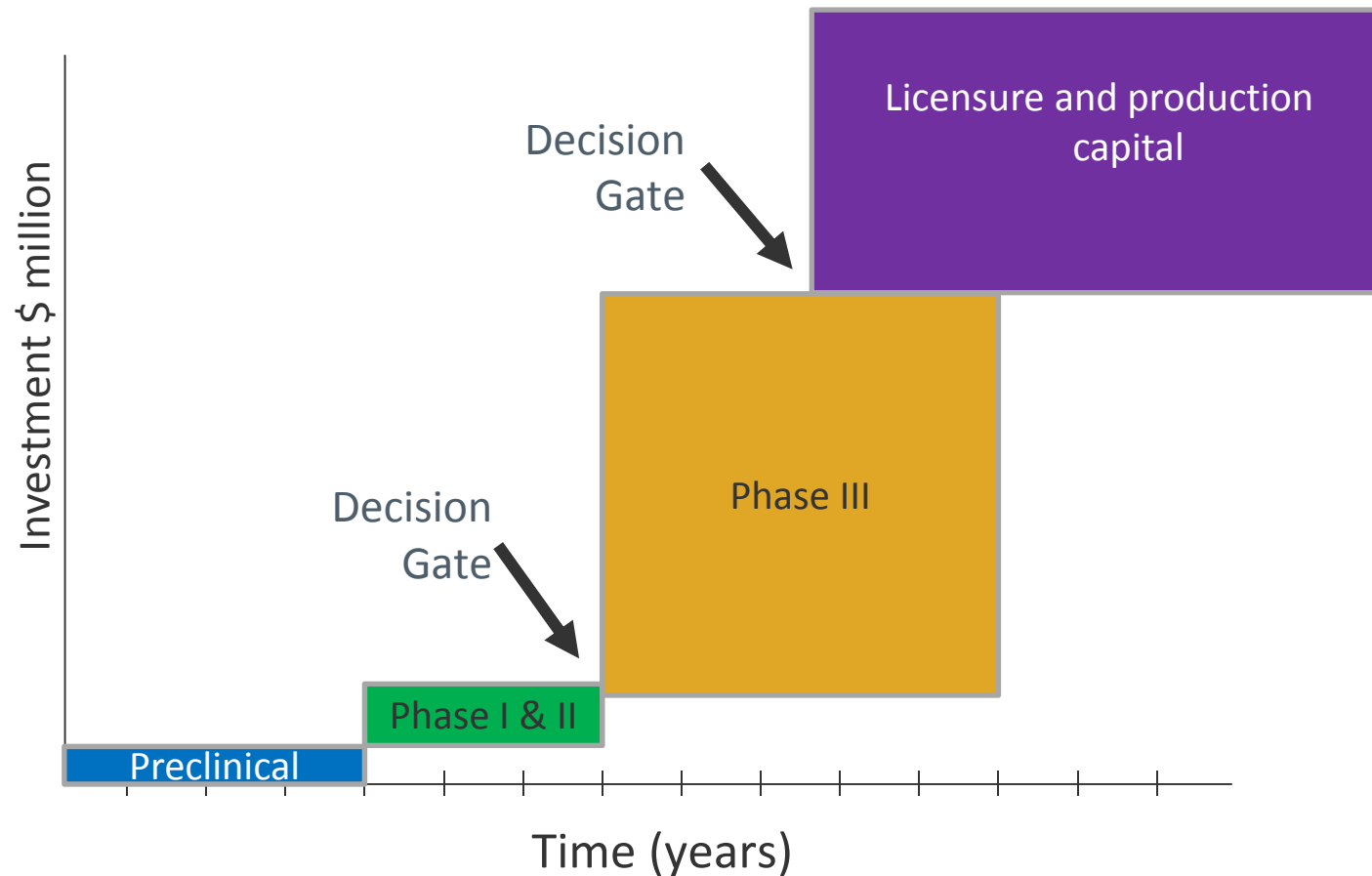


Source: PATH Global Vaccines Market Model. Provided for illustrative purposes only.

Vaccine Development – why markets matter

- Demand and financing depends on characteristics of vaccine
 - Fit with delivery system and schedule
 - Value for money
- Significant investment

Investments in vaccine development and production are significant. The expected market size is a critical factor.

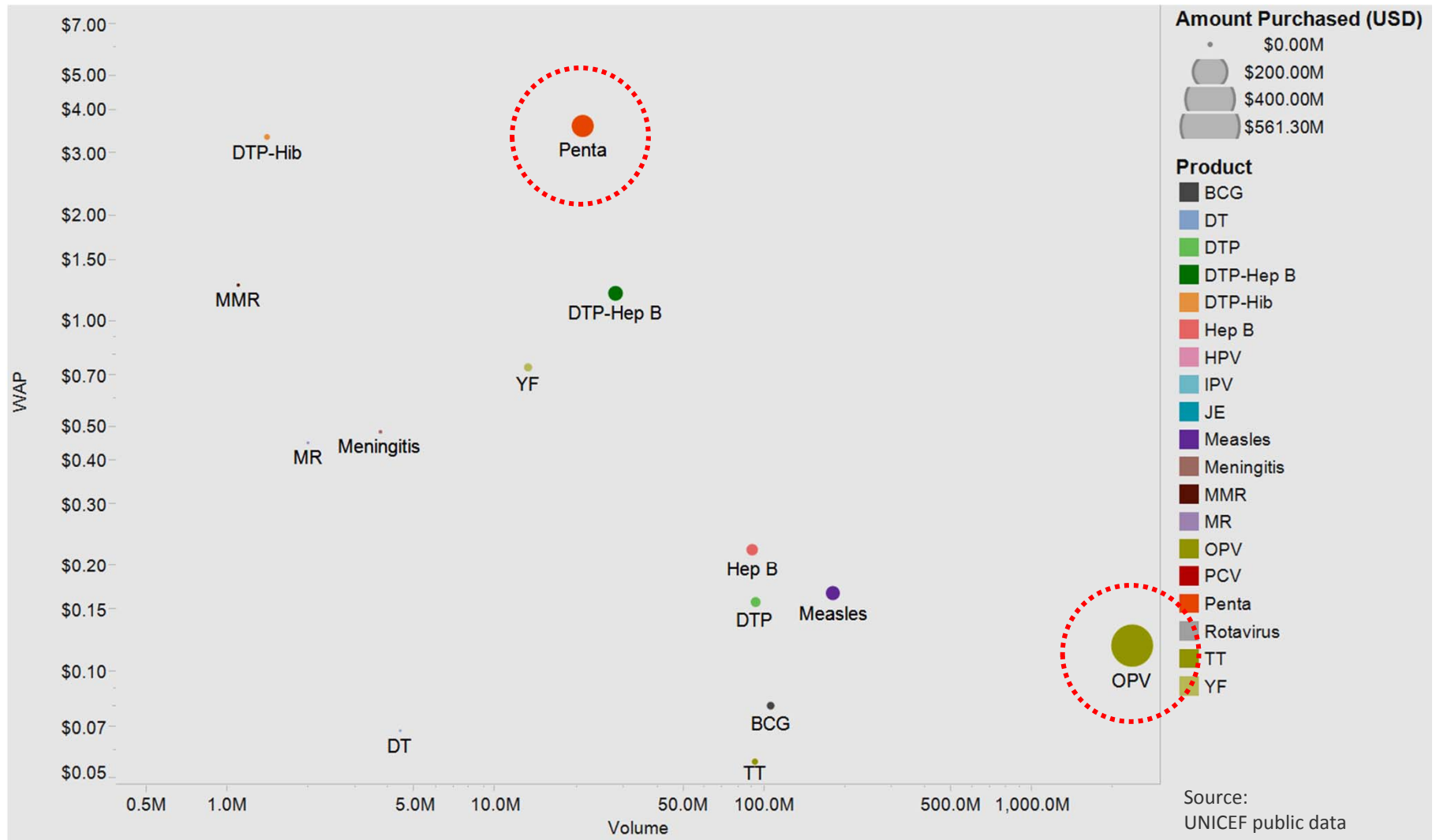


*All costs sourced from Light, Donald W., Jon Kim Andrus, and Rebecca N. Warburton. "Estimated research and development costs of rotavirus vaccines." *Vaccine* 27.47 (2009): 6627-6633, updated to 2016 USD

Product life-cycle

	Product launch	Early market penetration	Maturity
Number of products	1	1-2	Several
Product capacity	Low	Medium	High
Cost/unit	High	Relatively high	Yield and learning curve gains
Price	High	Tiers (High/middle income)	Competitive <ul style="list-style-type: none"> - Multiple tiers - Lowest tier for the poorest

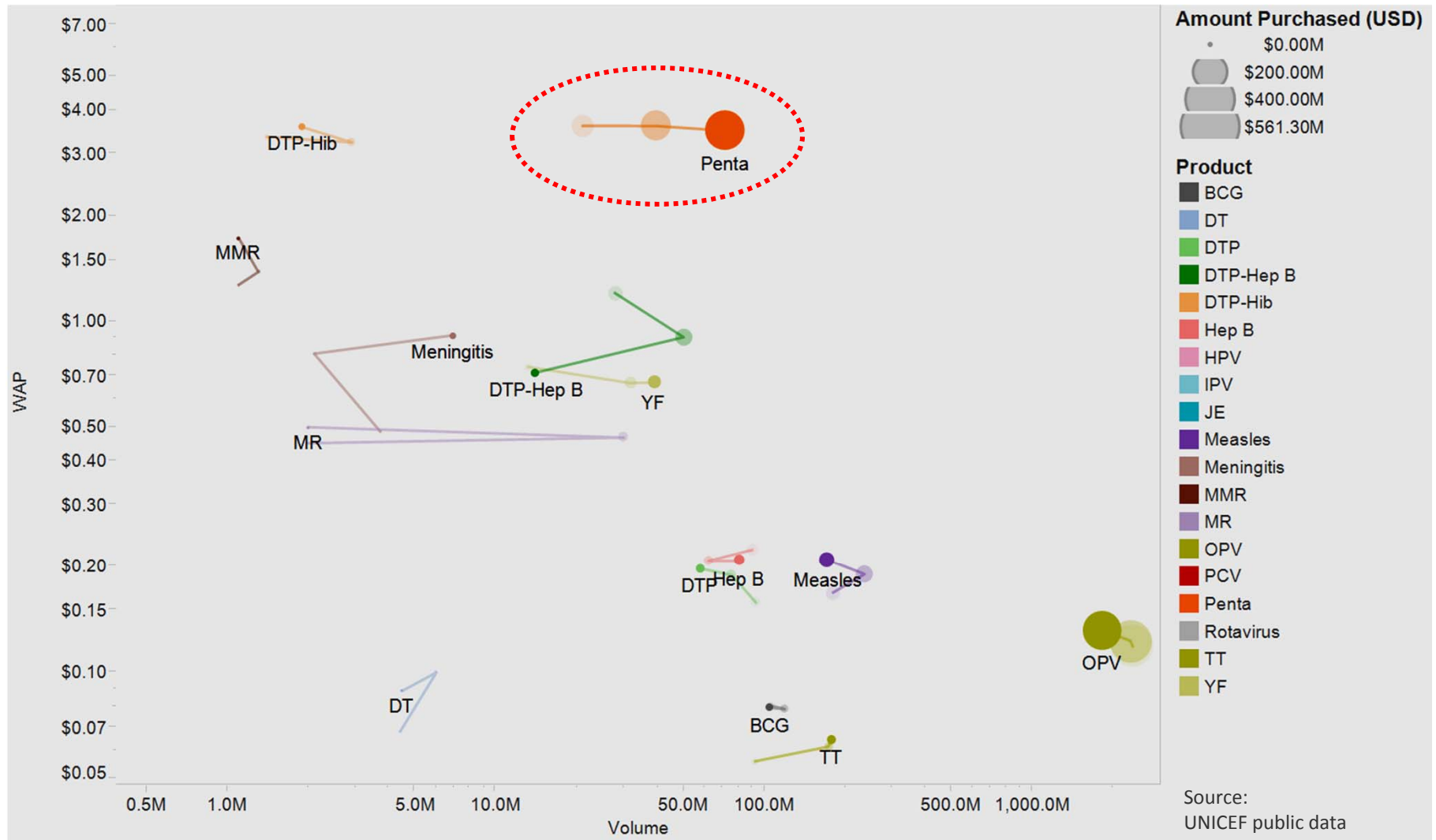
Changing landscape - 2006



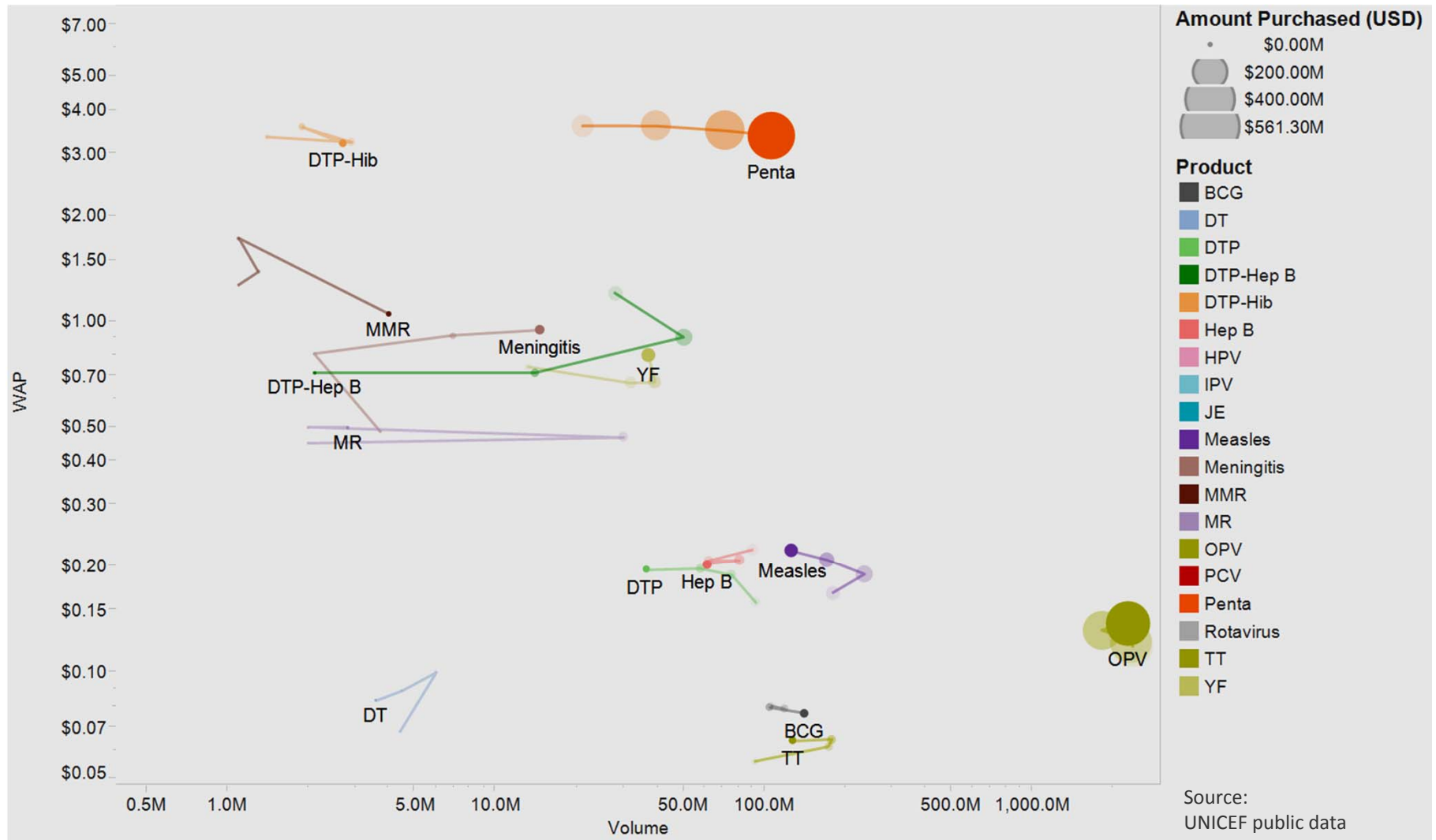
Changing landscape - 2007



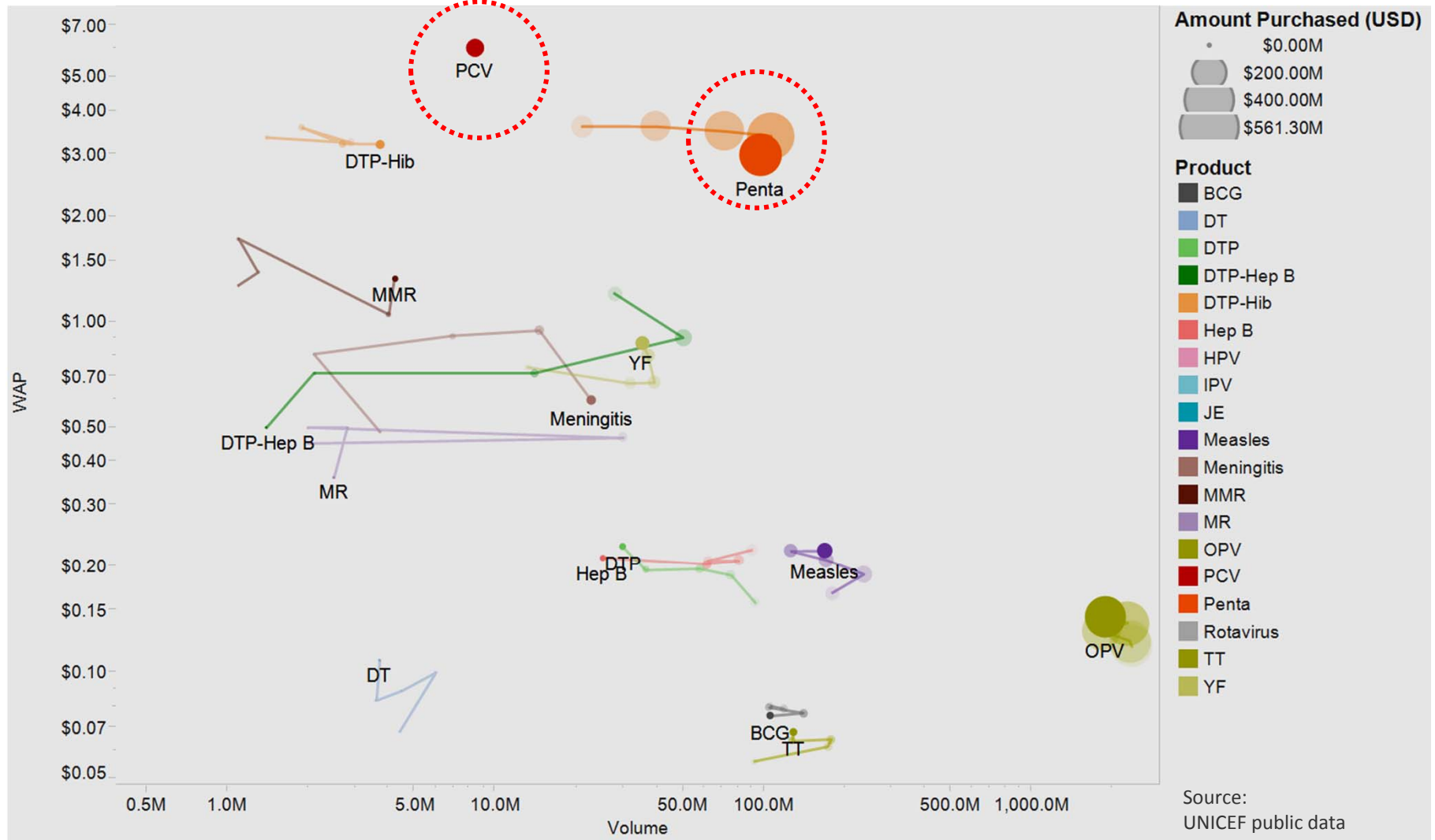
Changing landscape - 2008



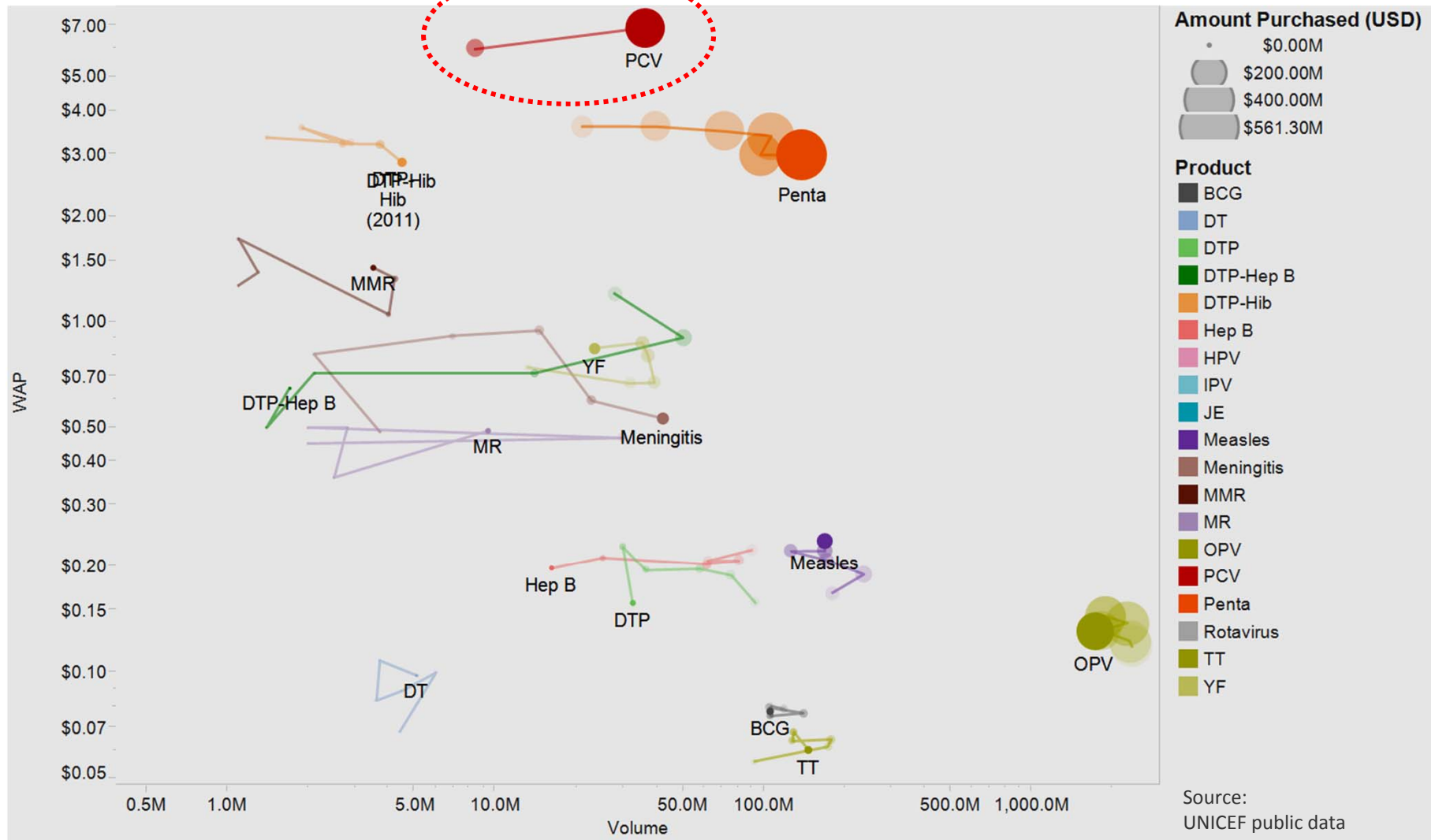
Changing landscape - 2009



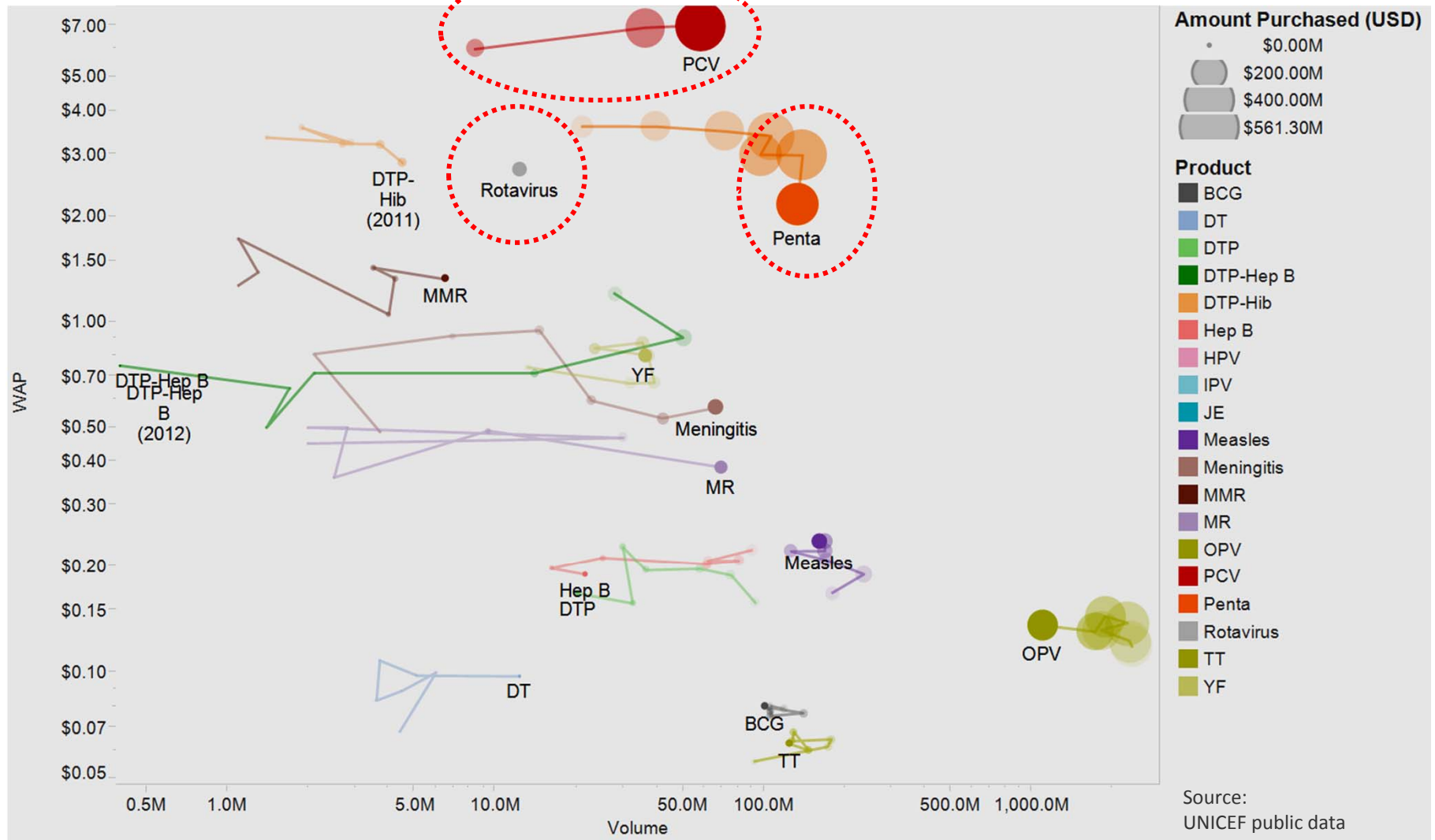
Changing landscape - 2010



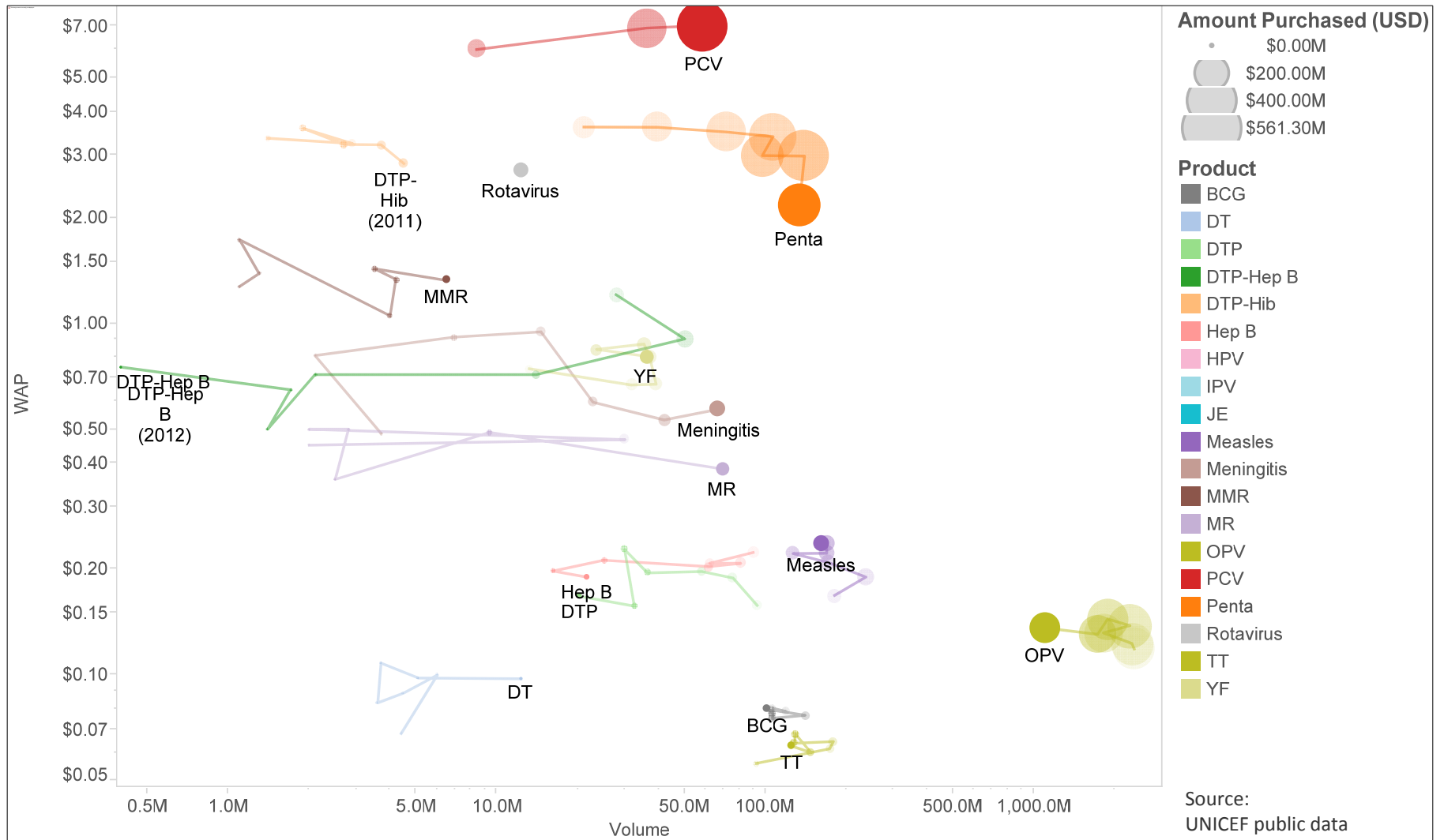
Changing landscape - 2011



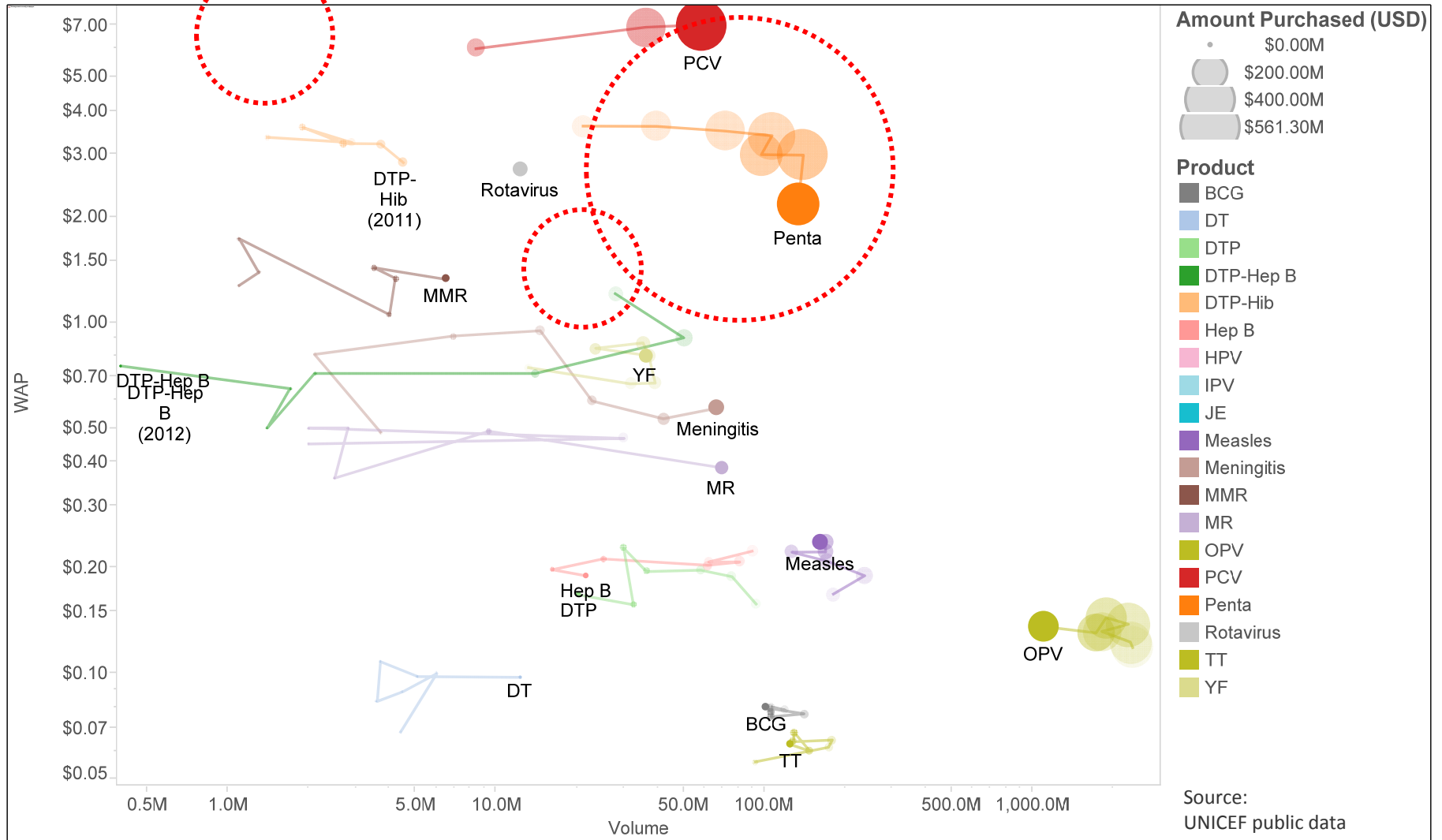
Changing landscape - 2012



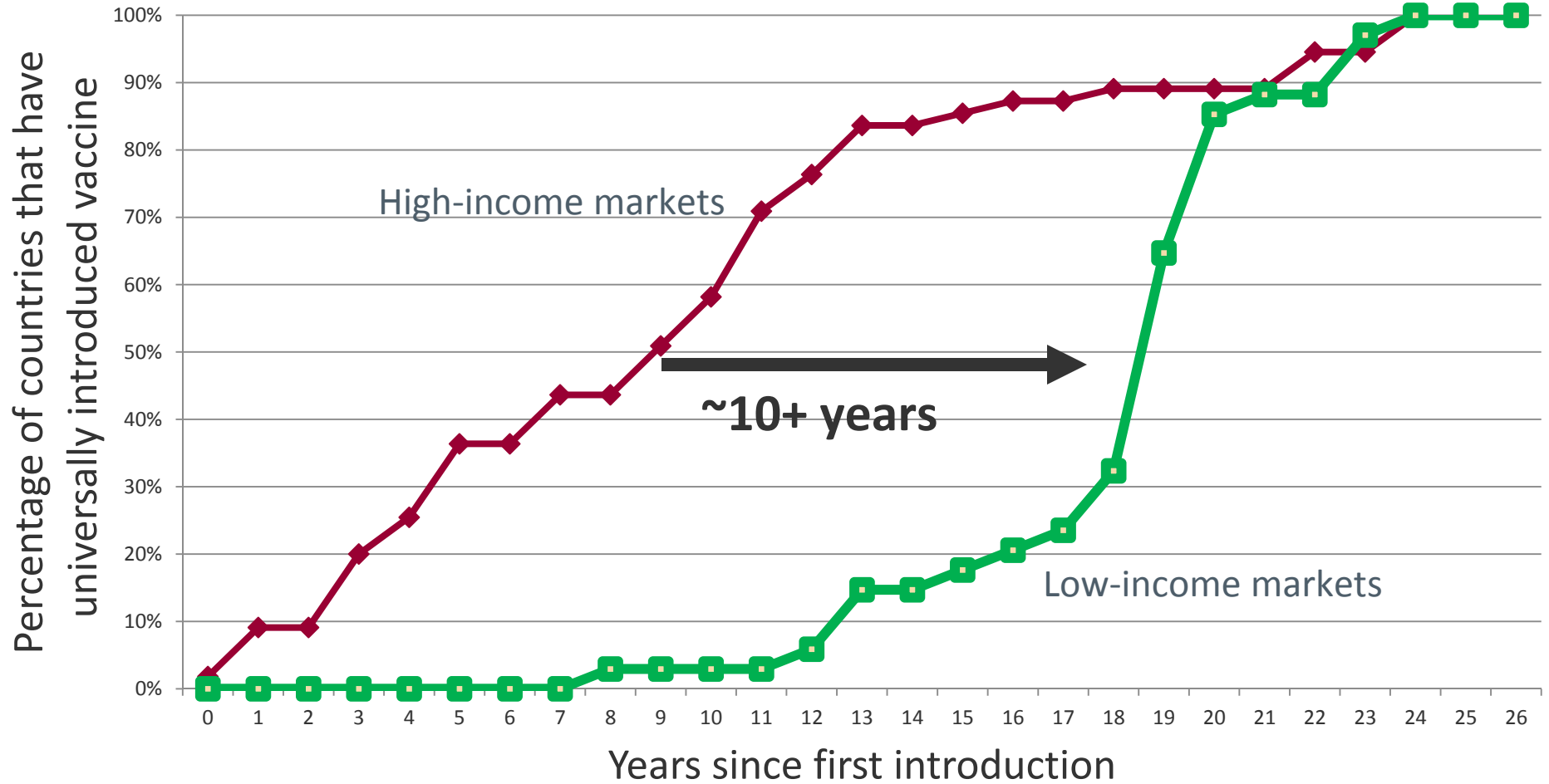
Changing landscape - 2013



Changing landscape - 2014

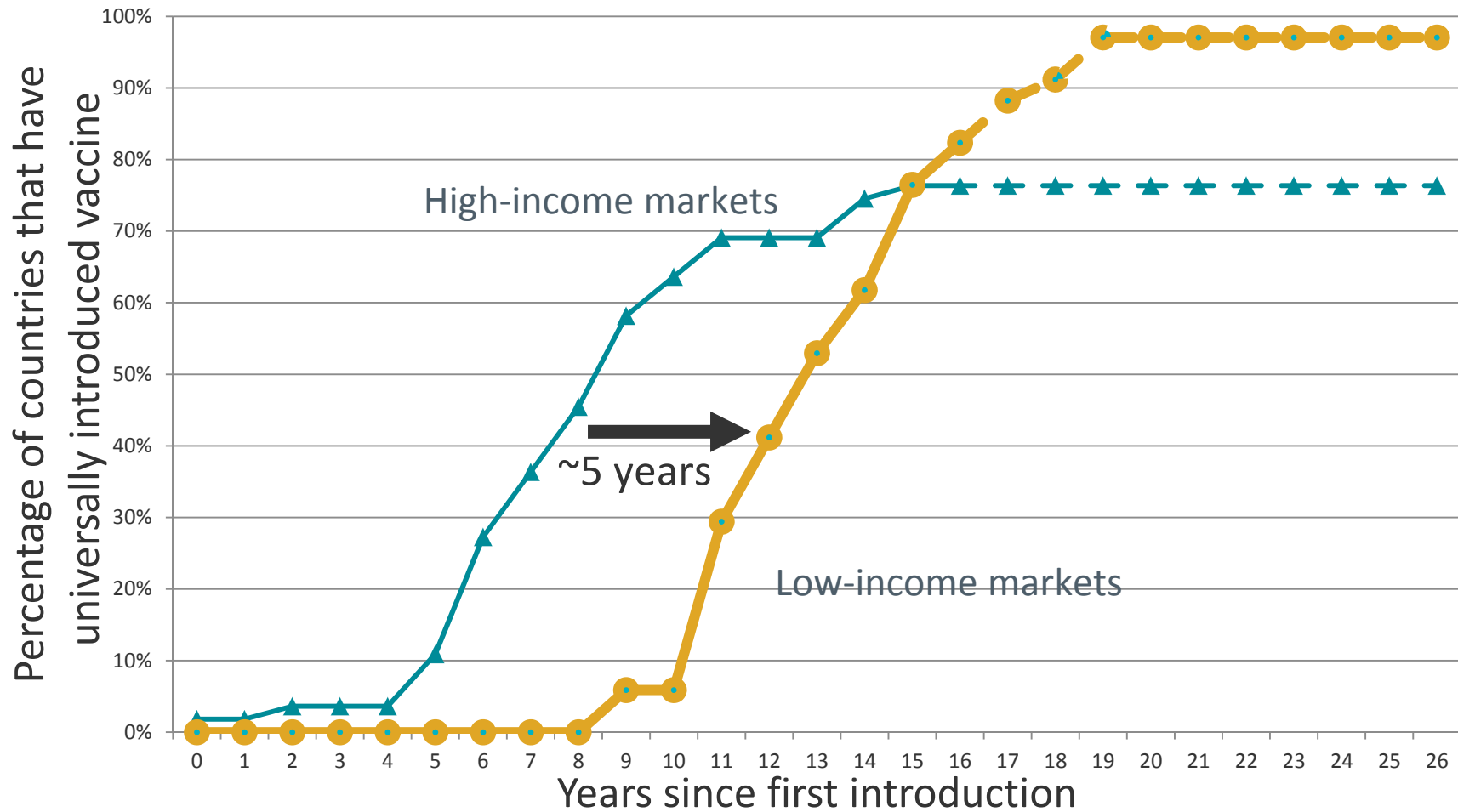


Hib vaccine introduction: high- and low-income markets



Source: International Vaccine Access Center (IVAC), Vaccine Information Management System (VIMS) Global Vaccine Introduction Report, December 2015. Johns Hopkins Bloomberg School of Public Health.

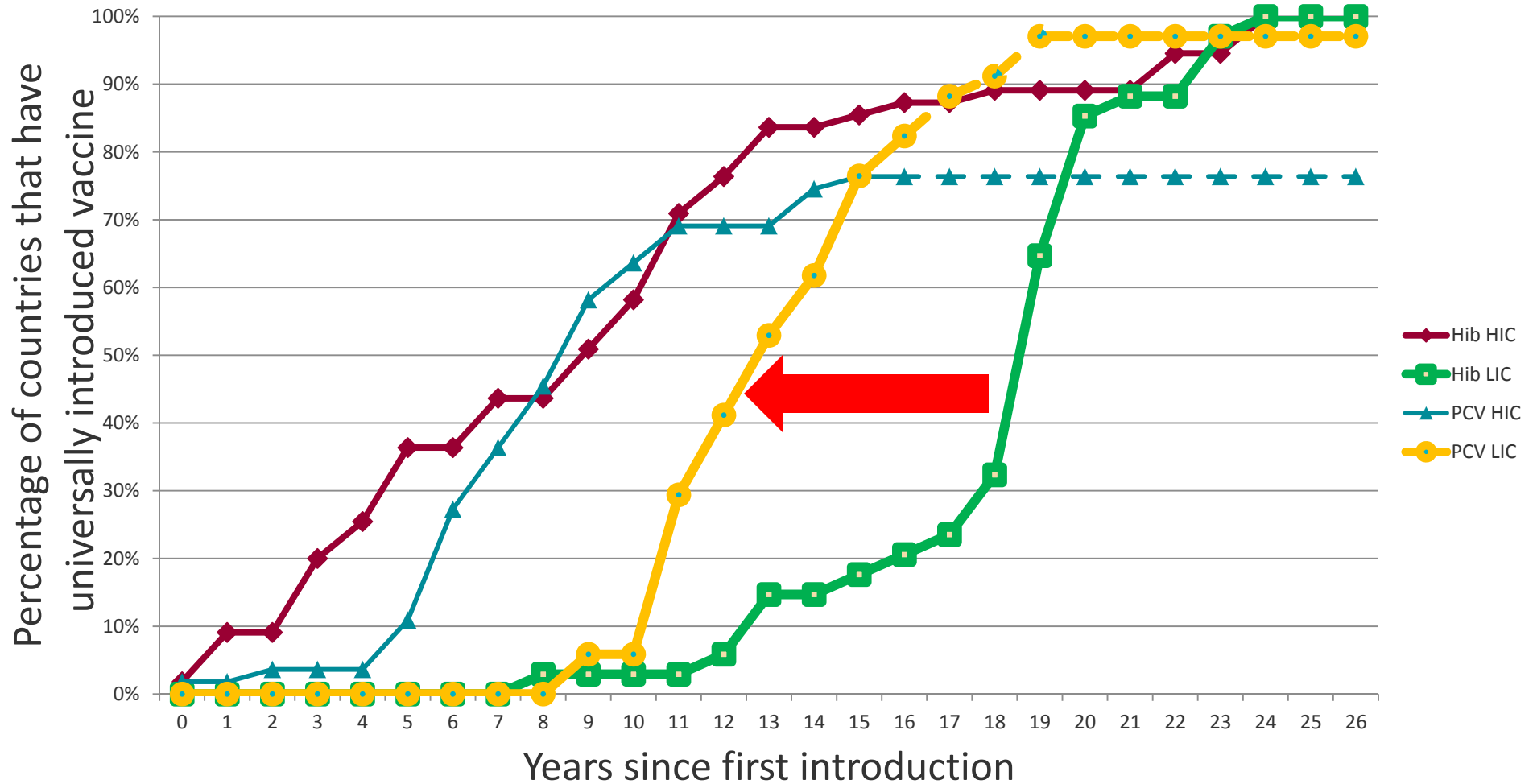
PCV vaccine introduction: high- and low-income markets



Note: Limited projections are available for PCV introduction in high-income countries

Source: International Vaccine Access Center (IVAC), Johns Hopkins Bloomberg School of Public Health. Vaccine Information Management System (VIMS) Global Vaccine Introduction Report, December 2015.

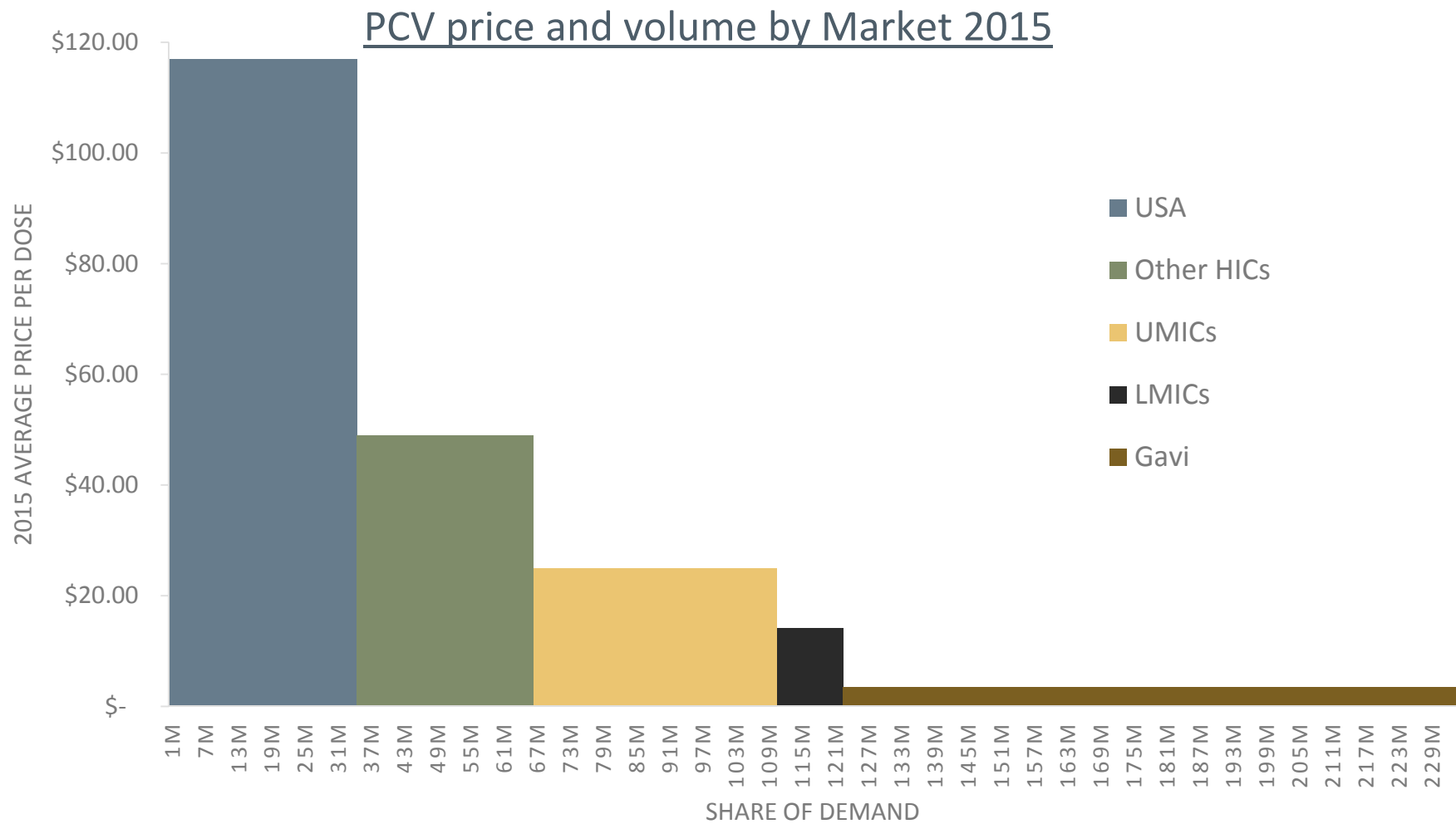
New vaccines are reaching children in developing countries much more rapidly.



Note: Limited projections are available for PCV introduction in high-income countries

Source: International Vaccine Access Center (IVAC), Johns Hopkins Bloomberg School of Public Health. Vaccine Information Management System (VIMS) Global Vaccine Introduction Report, December 2015.

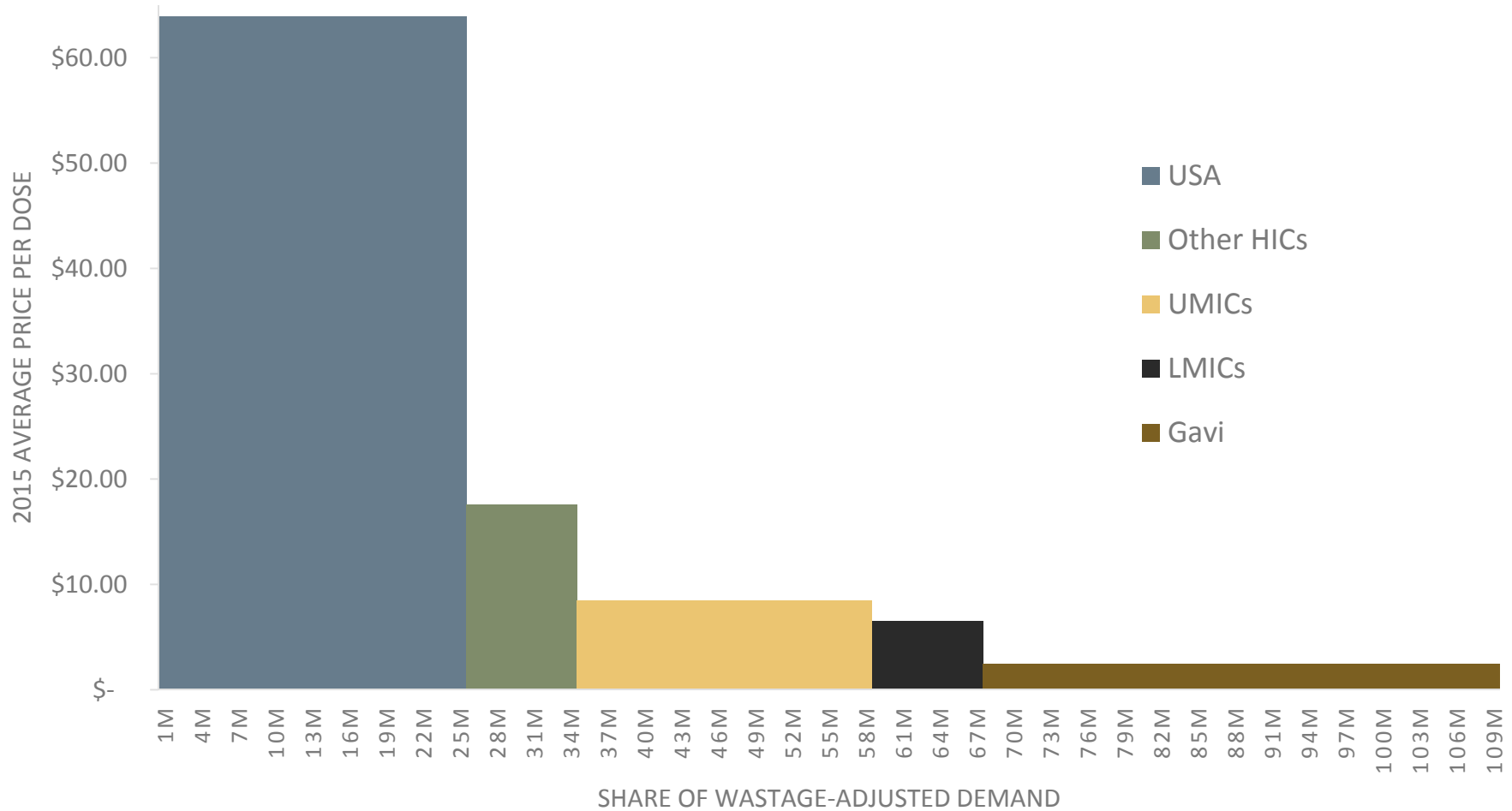
Tiered pricing enabled GAVI countries to access PCV earlier in the products lifecycles



Source: Global Vaccines Market Model, March 2016

Price tiering has also been critical in accelerating access to rotavirus vaccines.

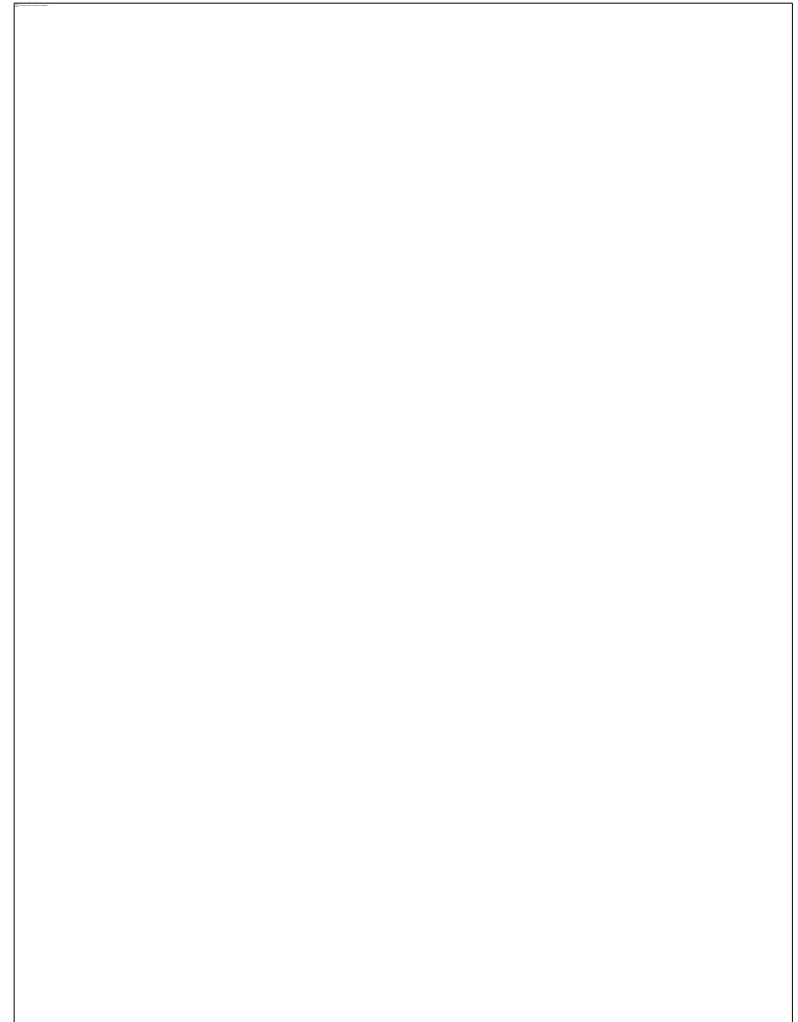
Rotavirus vaccine price and volume by Market 2015



Source: Global Vaccines Market Model, March 2016

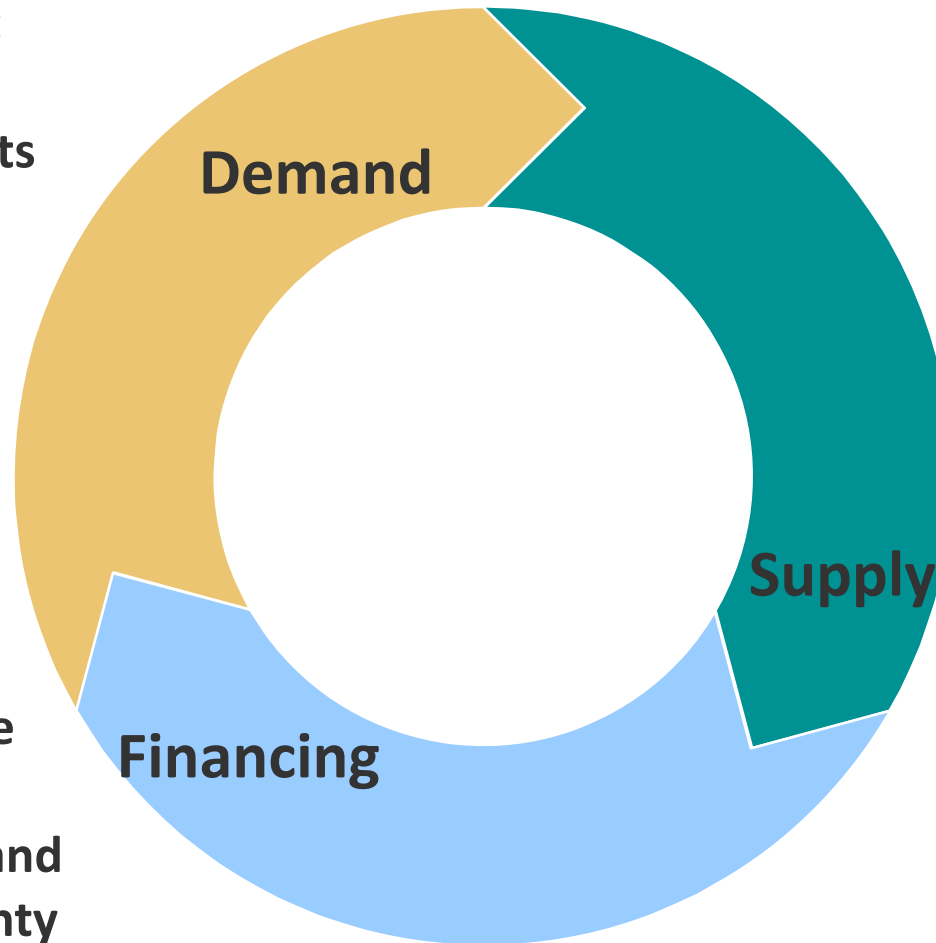
Vaccines without a dual market face other challenges.
Meningitis A vaccine was developed through a public private partnership.

- DEMAND: African MOHs request conjugate Men A vaccine available at ~\$0.50/dose
- DEVELOPMENT AND SUPPLY: PATH-WHO partnership with Serum Institute of India, FDA, NIH, and others
- FINANCING: BMGF invest \$75 million; gov'ts and donors purchase doses
- Vaccine available on market in 2010; TODAY – 235 million people protected
- By 2020, expect to protect ~ 400 million



The challenges – managing the vicious cycle:

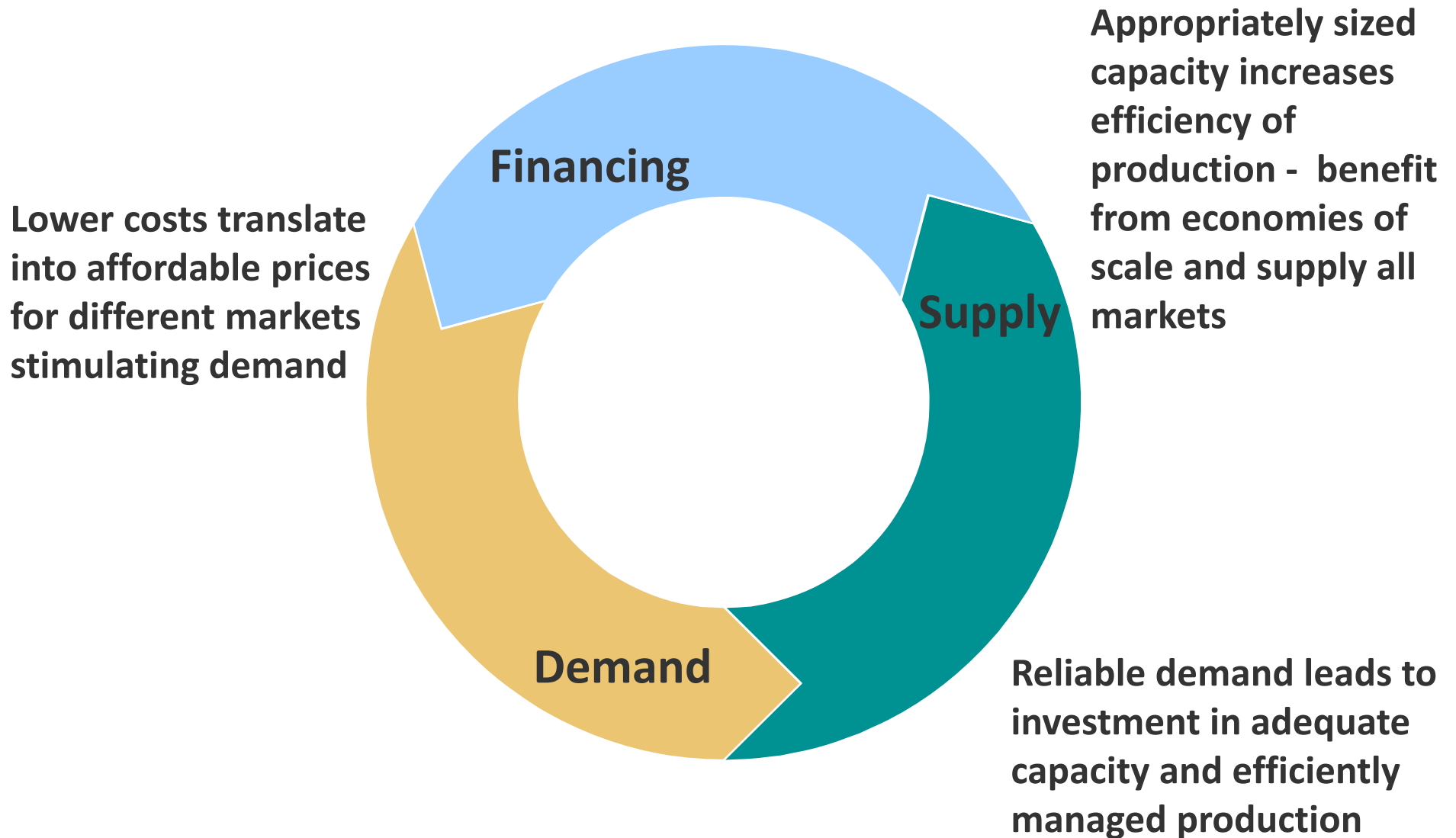
Uncertainty about demand leads to limited investments in capacity



Low capacity results in limited supply which creates shortages and keeps prices relatively high

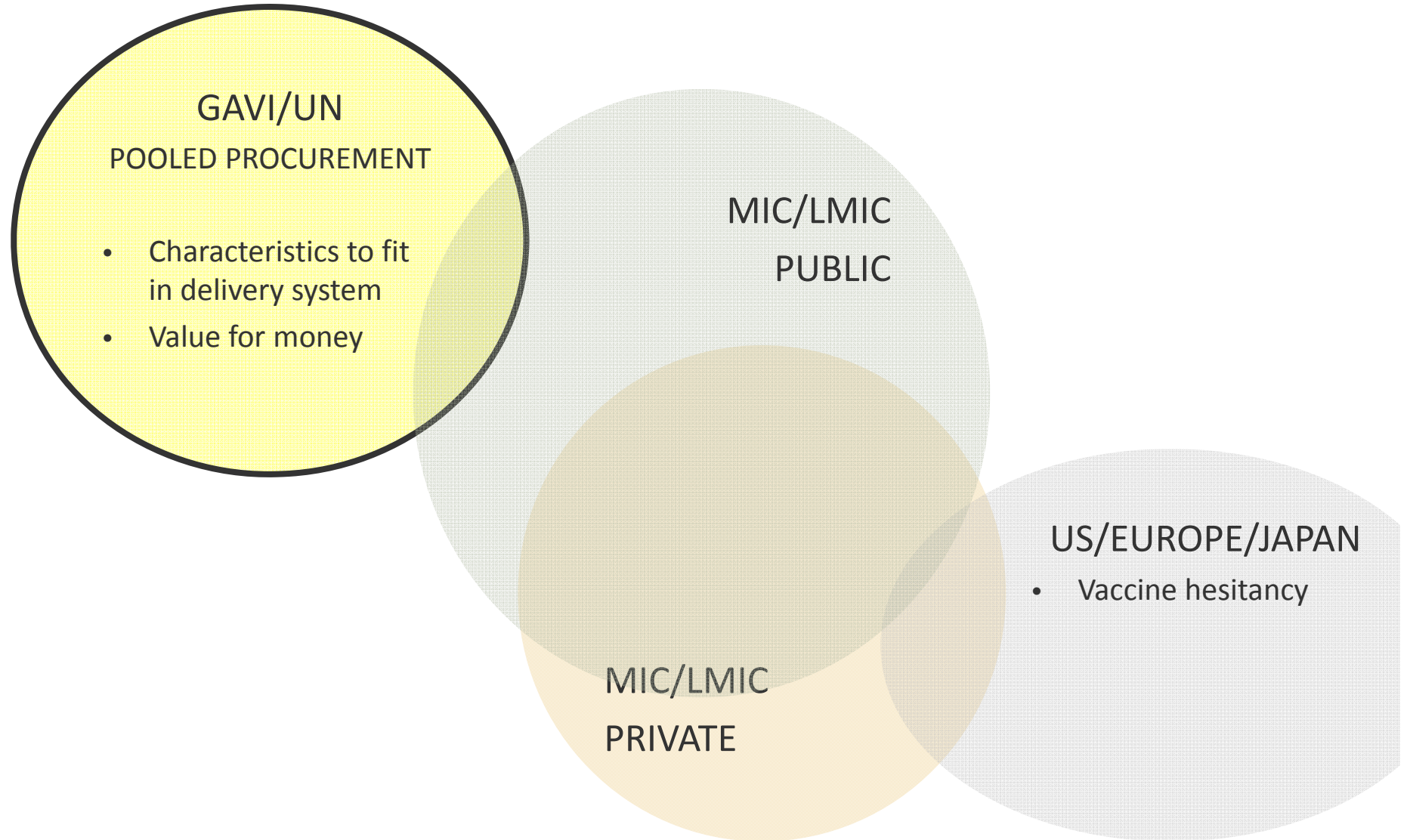
Higher prices raise questions about value for money and increase uncertainty about demand and financing

The challenges – creating a virtuous cycle:



Thank you!
www.path.org

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*Note: Only non-PAHO countries with >250,000 annual birth cohort included.
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