

Pulse of the Industry

Medtech Report 2016

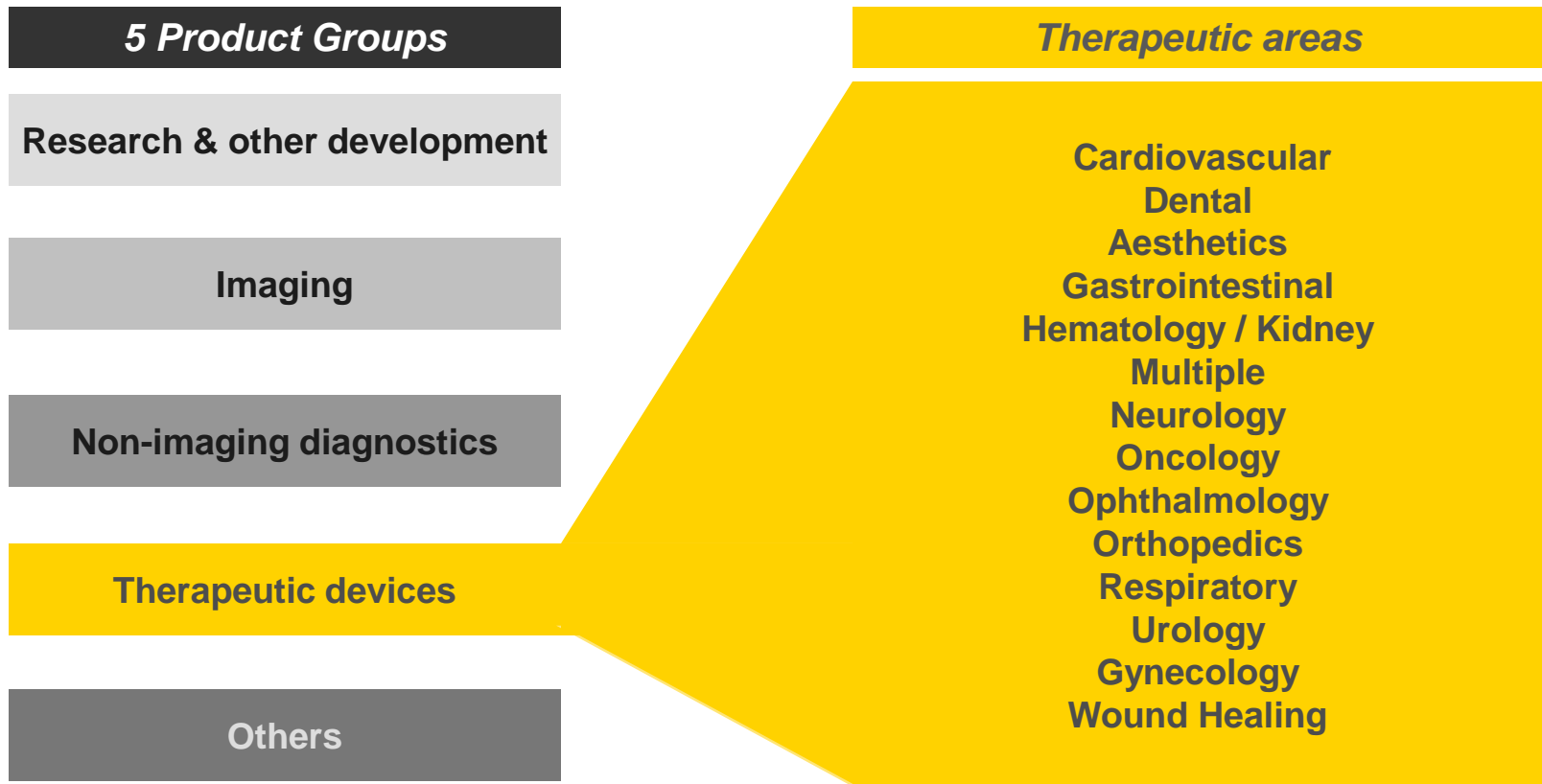
Berne, 16 May 2017

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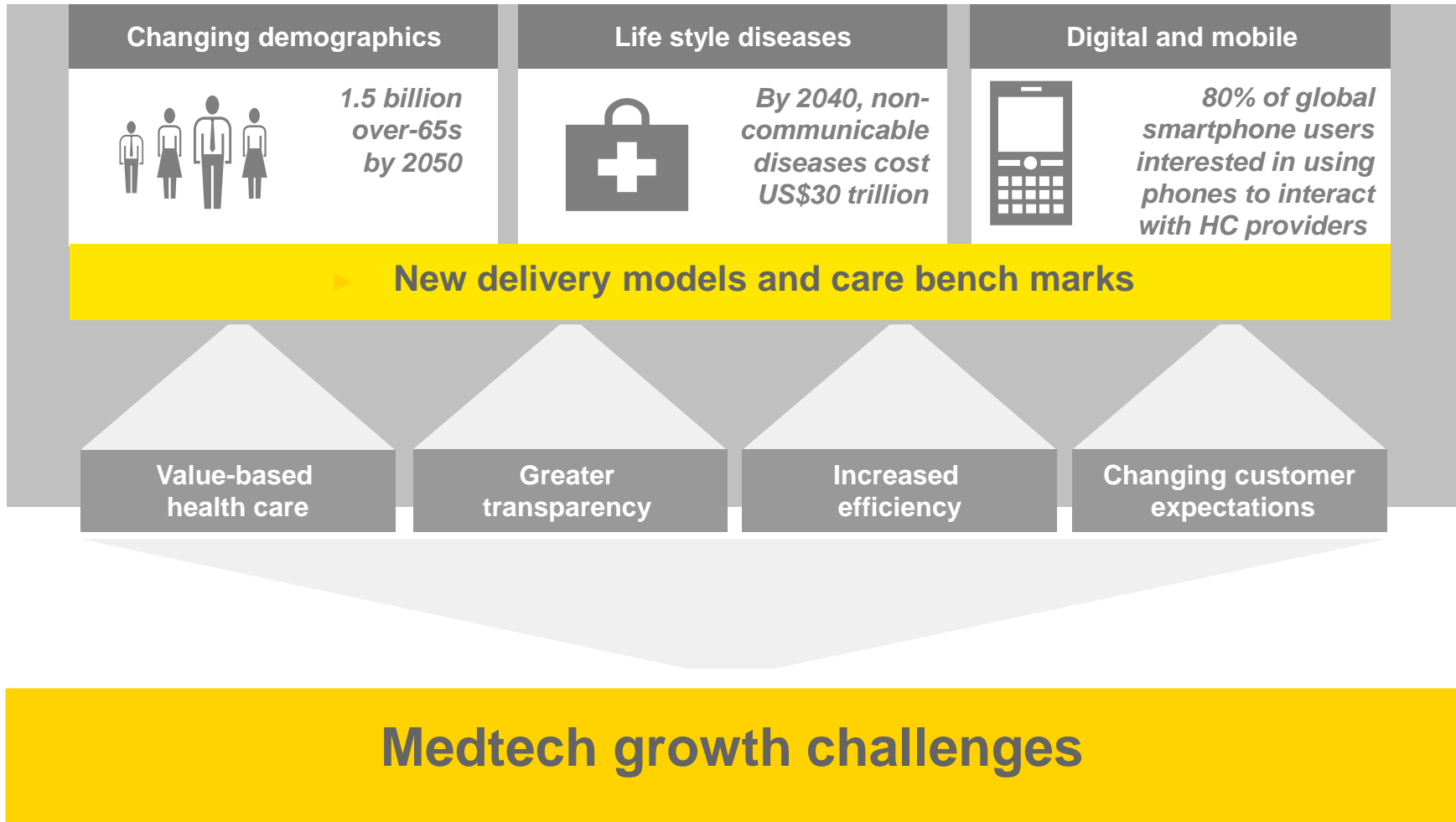
Diversity of the Medtech Industry

Structure and Categories in Pulse 2016

- „Conglomerates“ and „Pure-Plays“ (only listed companies)
- Product groups and therapeutic areas
- Focus on developments in USA and Europe



Mega trends are disrupting health care and medtech business models

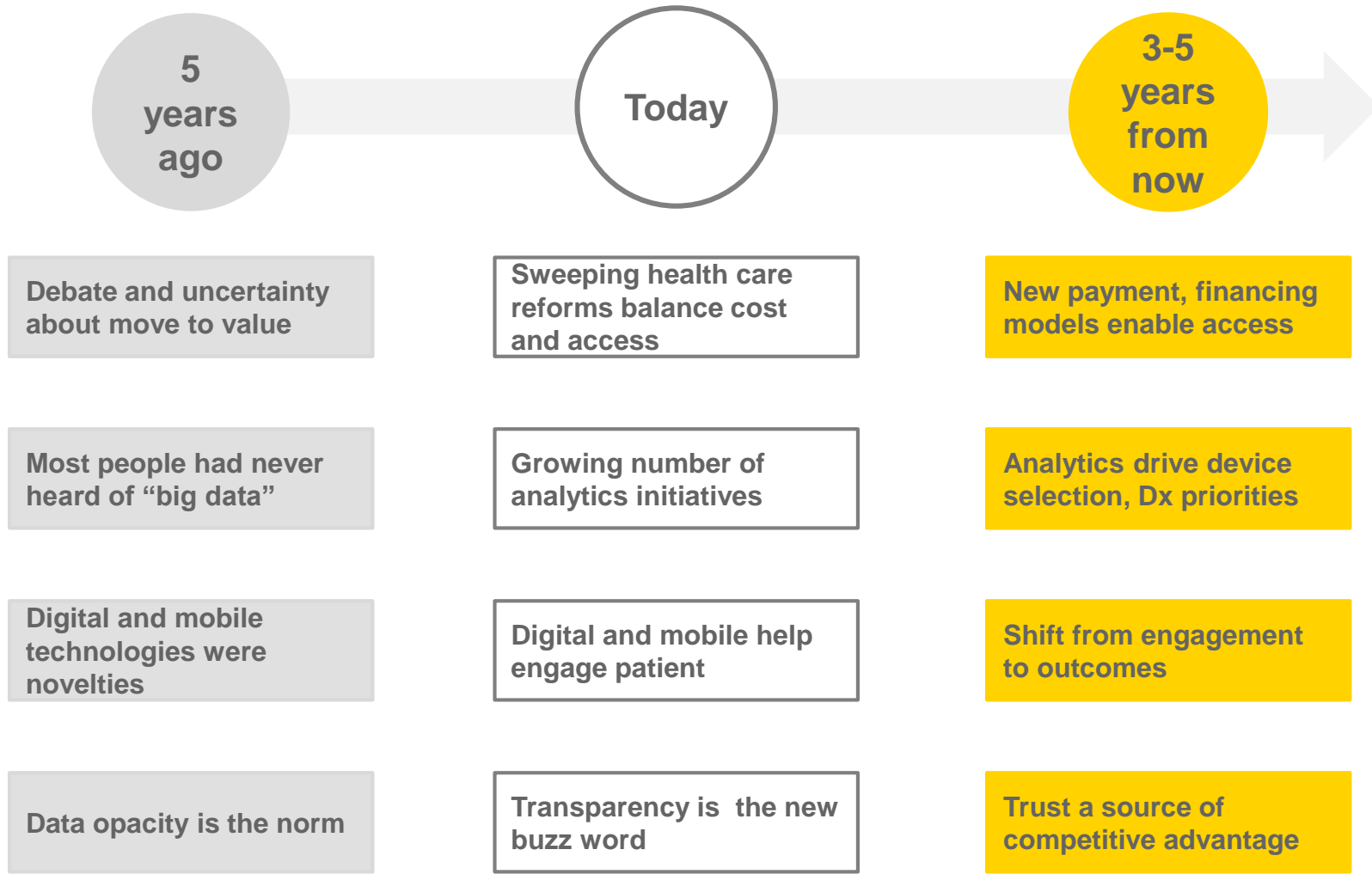


Top trends: MedTech industry in transition challenges for the growth of the MedTech



- ▶ **MedTech - an industry in transition**
 - ▶ consumer power
 - ▶ patient outcome
 - ▶ competition with new players (health IT)
 - ▶ digitalization
- ▶ **New business models**
 - ▶ new partner models (J & J/verily)
 - ▶ convergence MedTech - Healthcare - Health IT-therapy
 - ▶ innovations outside MedTech core area
- ▶ **Portfolio optimization**
 - ▶ market leadership and depth
 - ▶ diversification product / service cost
- ▶ **Carrier as a negotiating partner**
 - ▶ pricing vs. market penetration
 - ▶ comparative effectiveness
 - ▶ bundled payments
- ▶ **Regulatory: successes and challenges**
 - ▶ higher approval rates for 510 k products
 - ▶ PMA approvals will increase
 - ▶ MDR in Europe as a new hurdle?

The pace of change is accelerating...

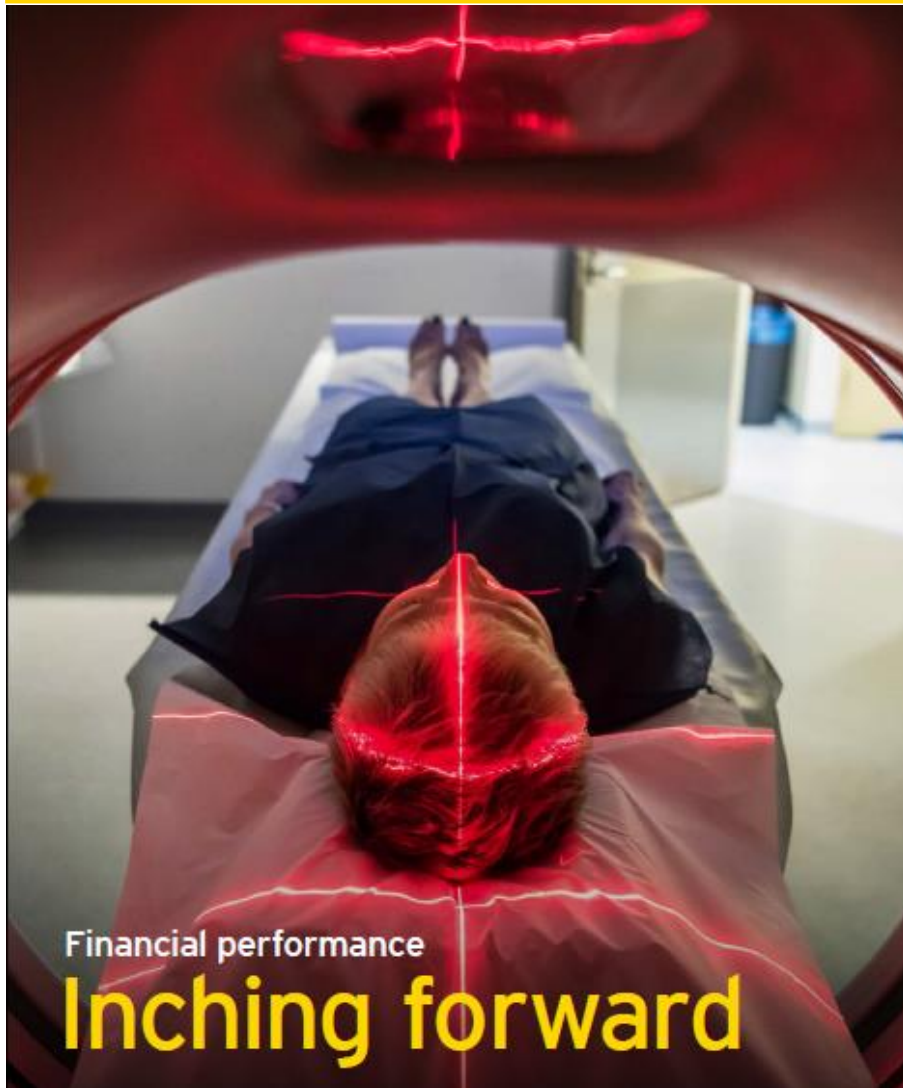


Mixed financial metrics show an industry in transition ...

- ▶ Total medtech revenue contracts 1% due to underperforming conglomerates and F/X headwinds
- ▶ Despite flagging revenues, medtech's cumulative market cap outperforms the broader market
- ▶ In a period of transition, companies return cash to shareholders, pare back R&D spending
- ▶ Financing total is the second lowest since 2010, but venture investment reached a new high of US\$5.6b
- ▶ Strong M&A climate driven by need to quickly create scale and strength in therapeutic areas

Financial Key Performance Indicators

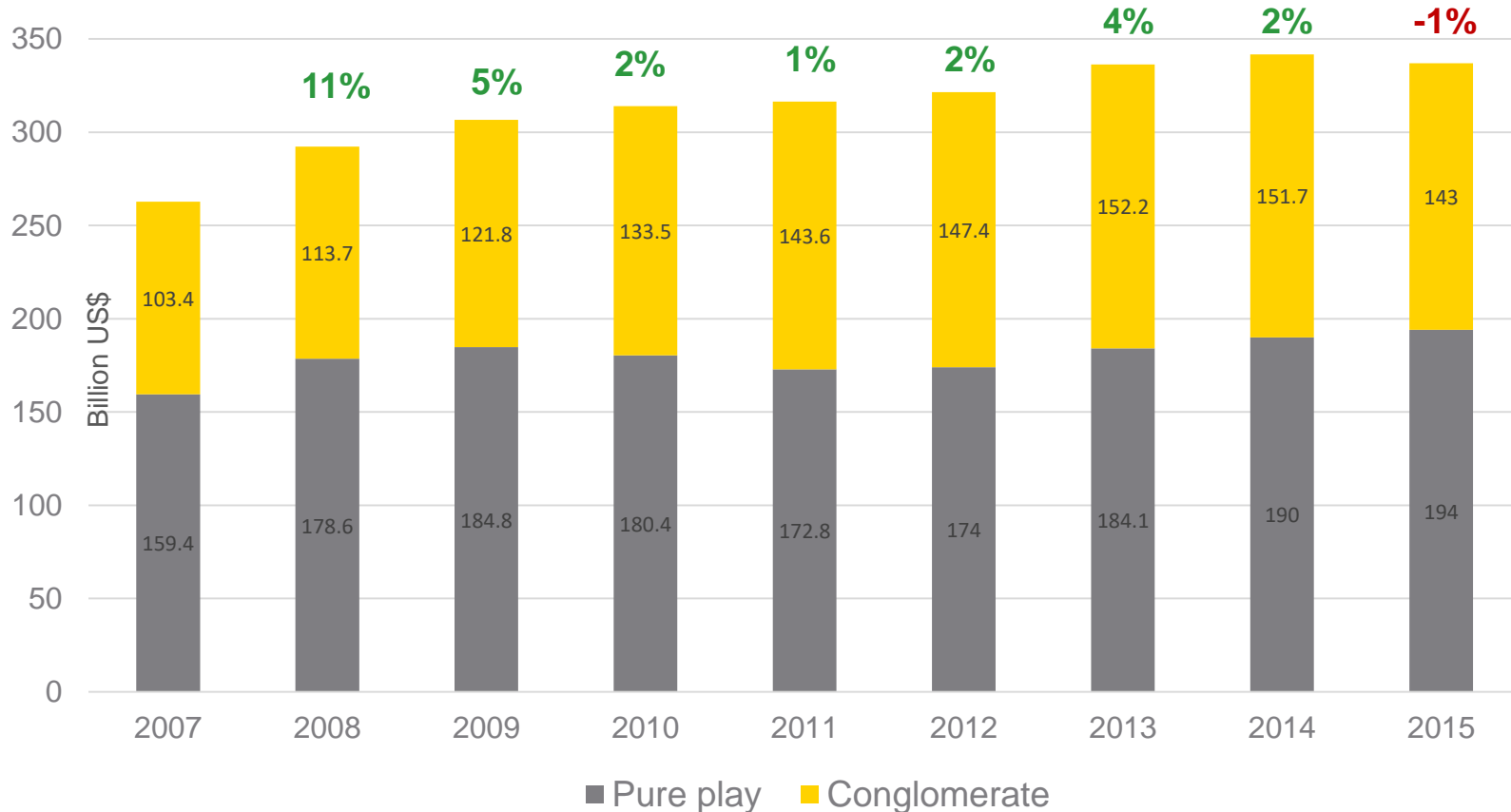
Where stands the medtech industry?



Medtech growth isn't sustainable

Stagnation of the sector revenue as a whole

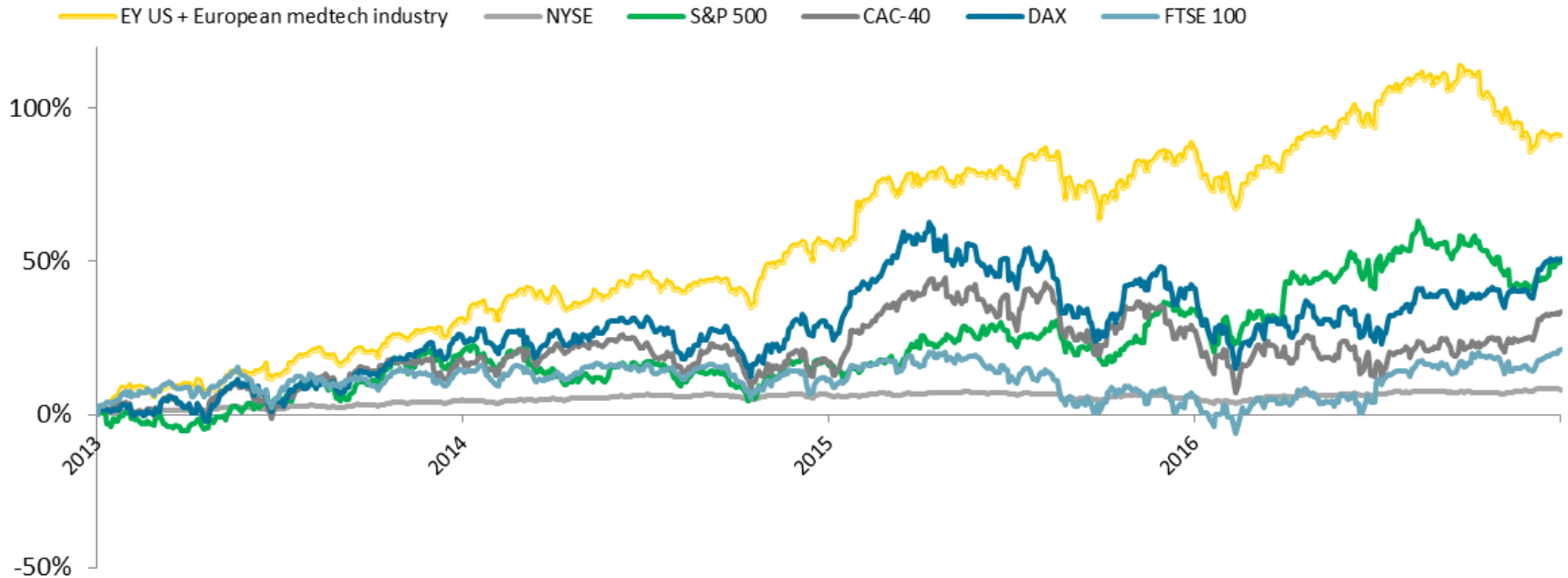
Medtech revenues between 2007 and 2015



Source: EY, Capital IQ and company filings.

Medtech still outperforming the broader capital markets

US and European medtech market capitalization relative to leading indices 2013-H12016



Overview of the KPIs

USA / Europe combined

Public company data	2015	2014	% change
Revenues	\$337.3	\$341.3	-1%
Conglomerates	\$143.3	\$151.7	-6%
Pure-play companies	\$194.0	\$189.6	2%
Commercial leaders	\$176.3	\$172.0	2%
Non-commercial leaders	\$17.7	\$17.6	0.4%
R&D expense	\$15.0	\$14.1	6%
SG&A expense	\$65.1	\$63.3	3%
Net income	\$13.7	\$16.2	-15%
Market capitalization	\$717	\$636	13%
Number of employees	748,300	648,300	15%
Number of public companies	455	453	0.4%

Overview of KPIs

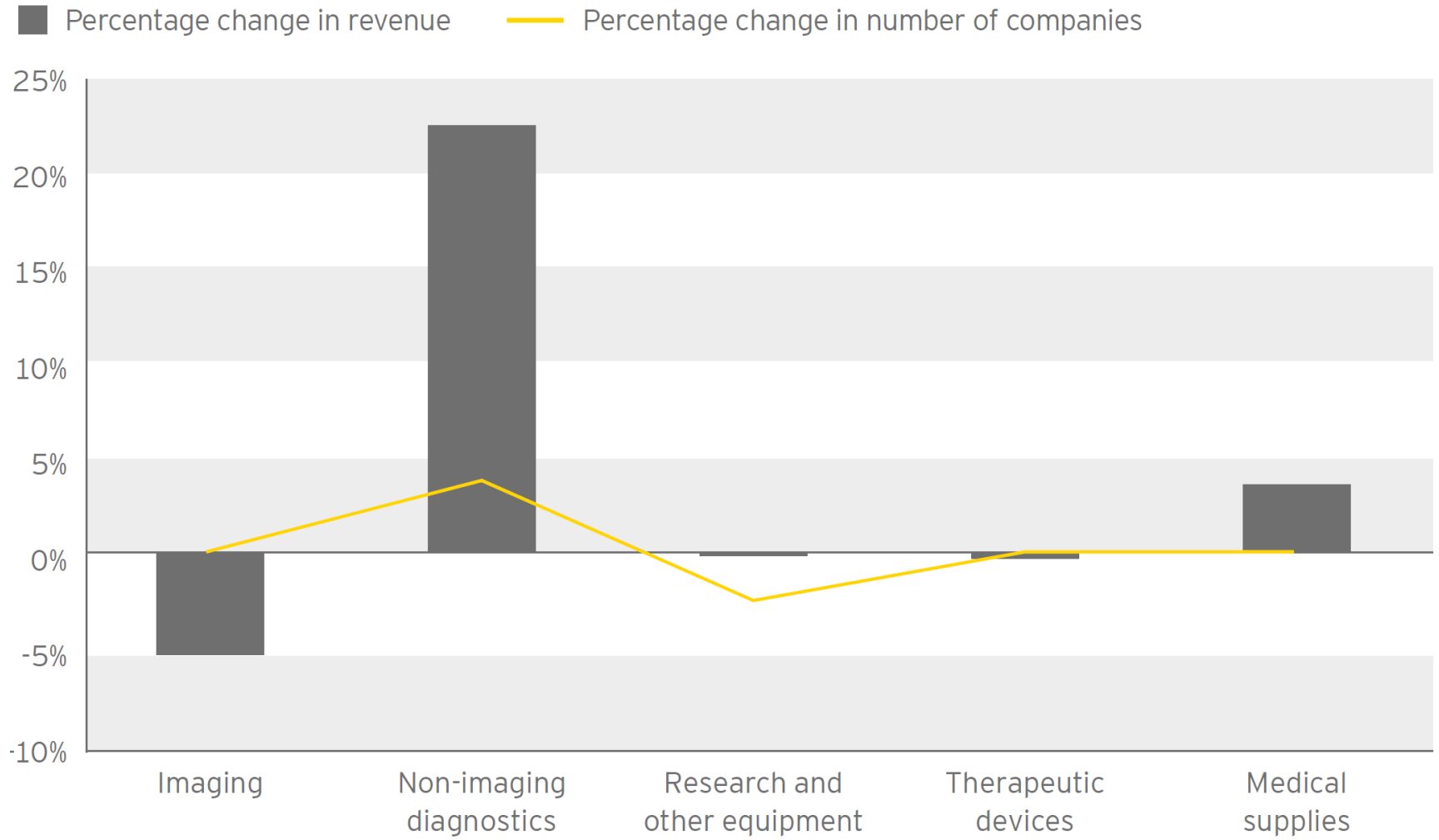
Europe

(US\$b)

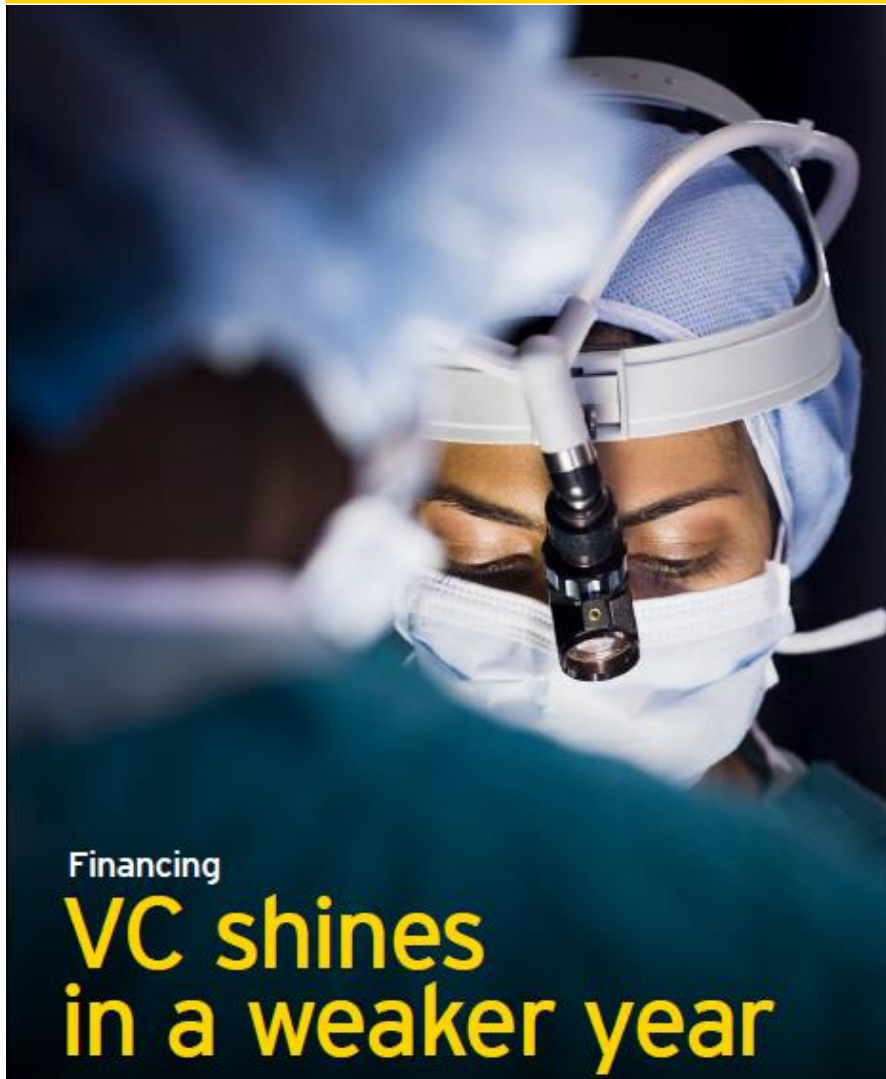
Public company data	2015	2014	% change	Non-commercial leaders as percentage of industry total
Total industry revenues	\$128.5	\$106.4	21%	
Conglomerates	\$61.6	\$66.4	-7%	
Pure-play: commercial leaders	\$62.1	\$35.4	75%	
Pure-play: non-commercial leaders				
Revenues	\$4.7	\$4.7	2%	4%
R&D expense	\$0.6	\$0.5	33%	27%
SG&A expense	\$2.3	\$2.0	12%	17%
Net income (loss)	\$(0.7)	\$(0.4)	-56%	NA
Market capitalization	\$23.9	\$16.6	43%	18%
Number of employees	23,600	13,100	80%	15%
Number of public companies	175	179	-2%	88%

Revenue development of sector

Diagnostic as growth driver

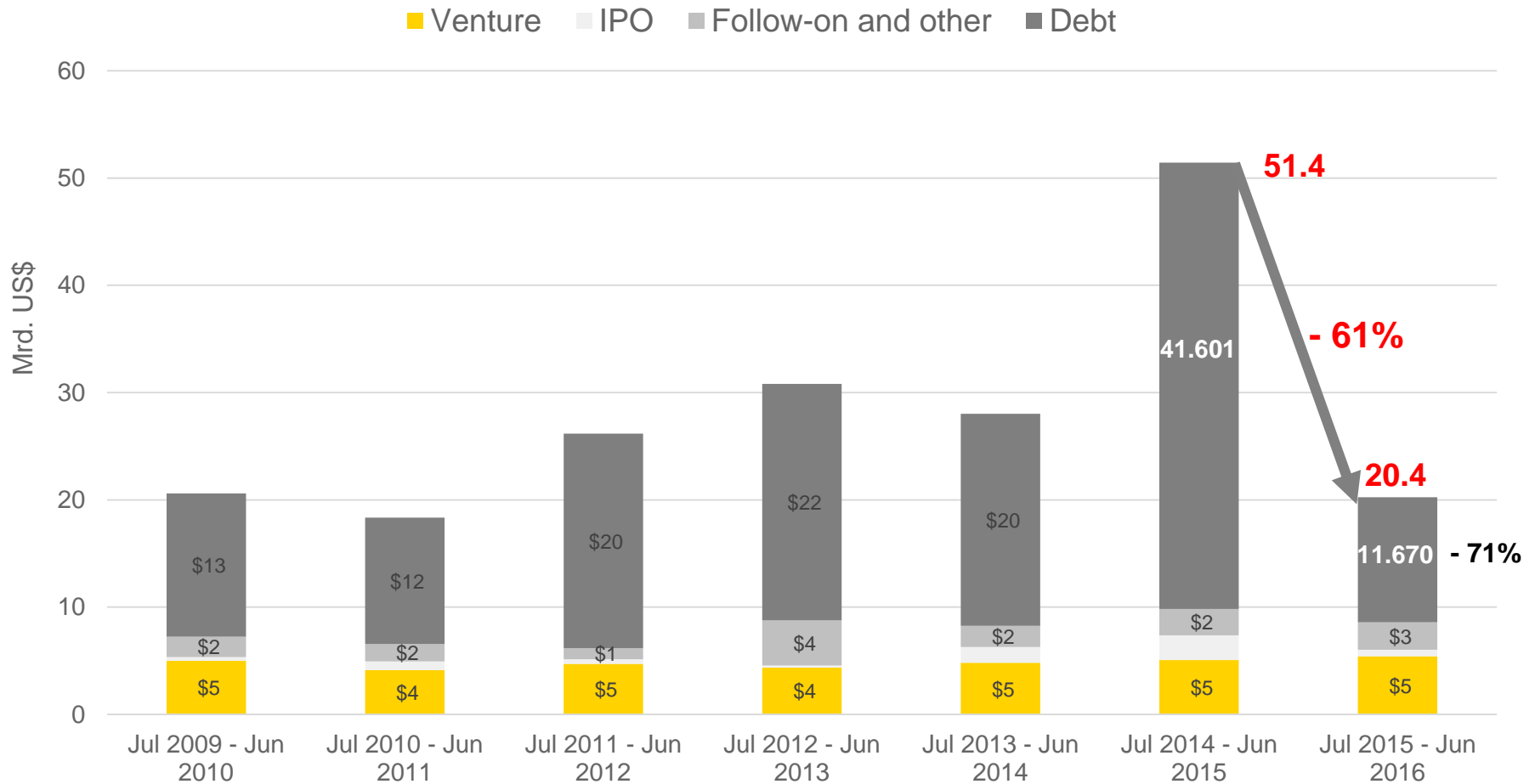


Financing with sunshine and shadows



Total financing declines

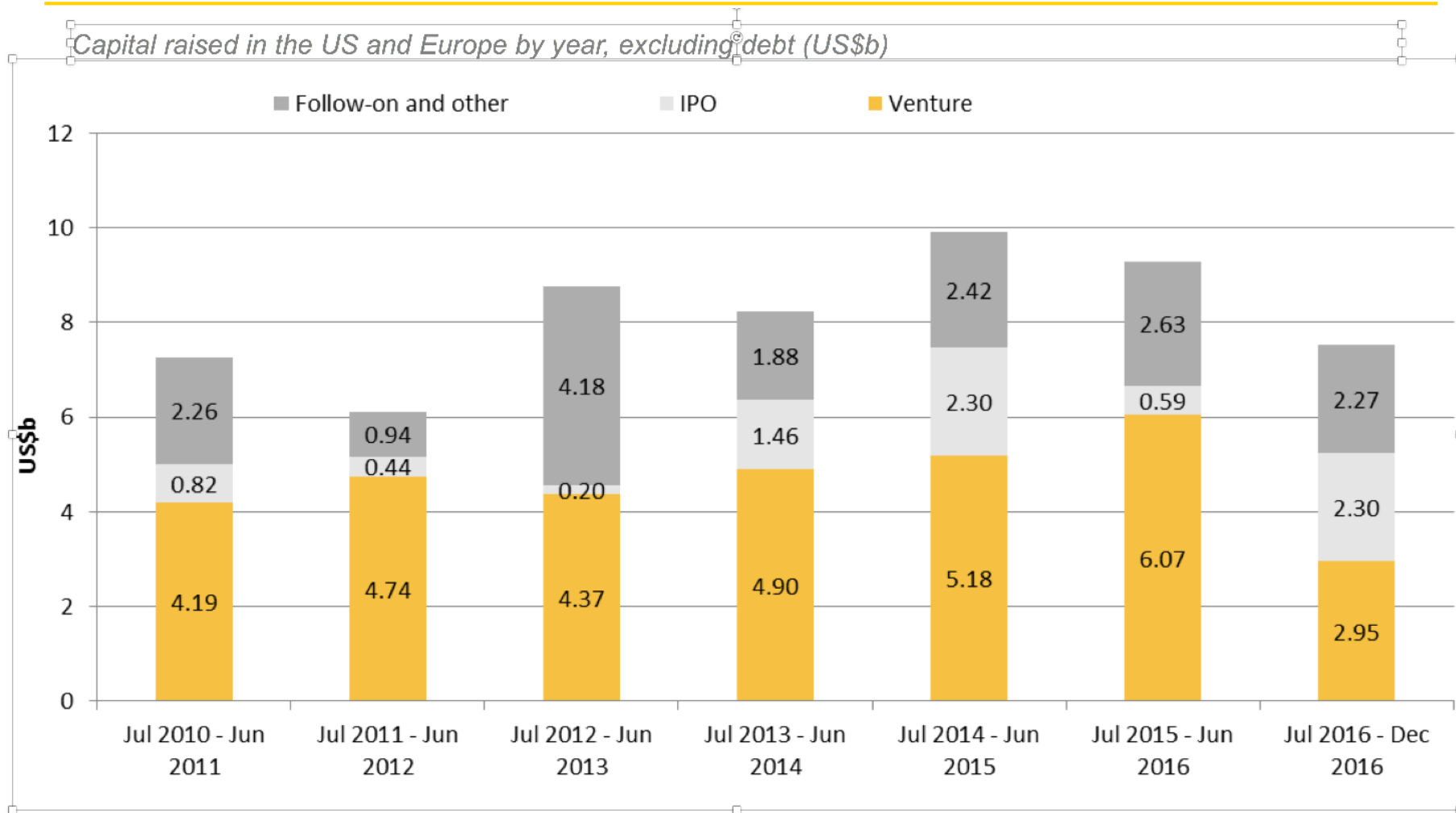
Less debt due to missing mega deals



Source: EY, BMO Capital Markets, Dow Jones VentureSource and CapitalIQ. Numbers may appear to be inconsistent because of rounding. PIPEs included in "Follow-on and other".

Capital development split in two parts

IPO window volatile – but positive FO / VC raise



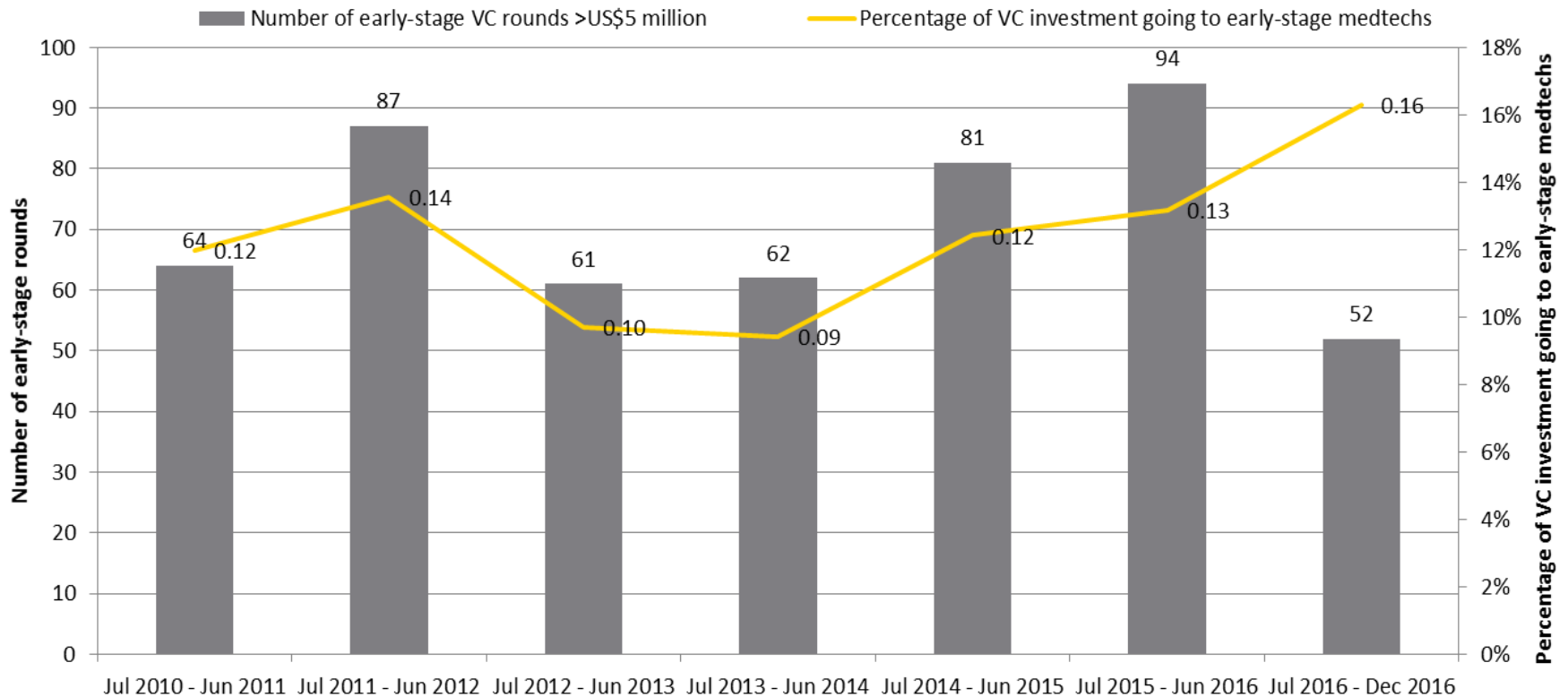
Source: EY, BMO Capital Markets, Dow Jones VentureSource and CapitalIQ.

PIPEs included in "Follow-on and other".

VC does again more early stage financings

Good news for the future of medtech

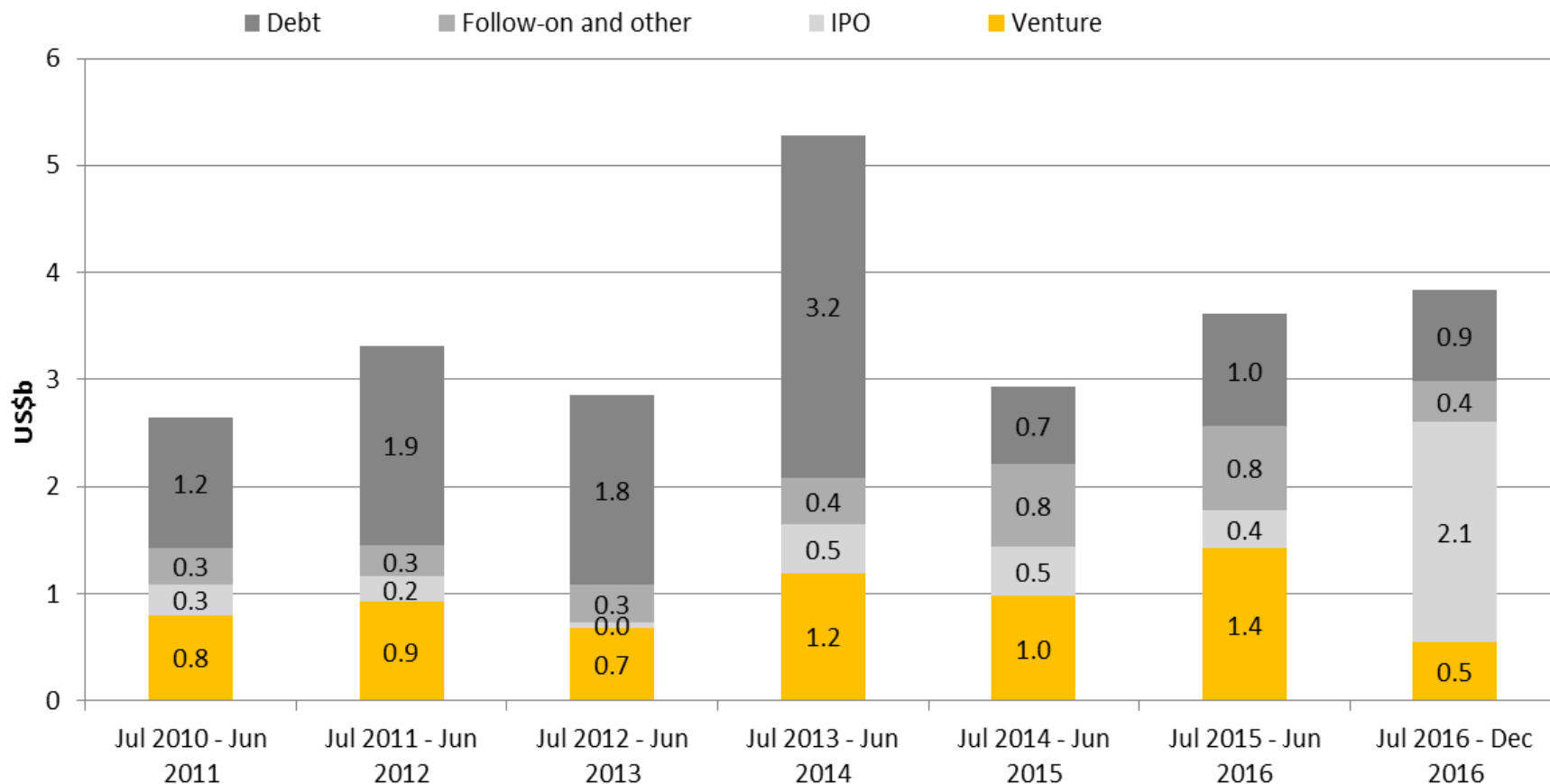
US and European early-stage VC rounds >US\$5 million



Source: EY, Dow Jones VentureSource and Capital IQ.
 Early-stage rounds are seed-, first- and second-round VC investments.

Financing in Europe with positive trends

Increase of VC and debt – IPOs slowing down in EU also



Source: EY, BMO Capital Markets, Dow Jones VentureSource and CapitalIQ.

PIPEs included in "Follow-on and other".

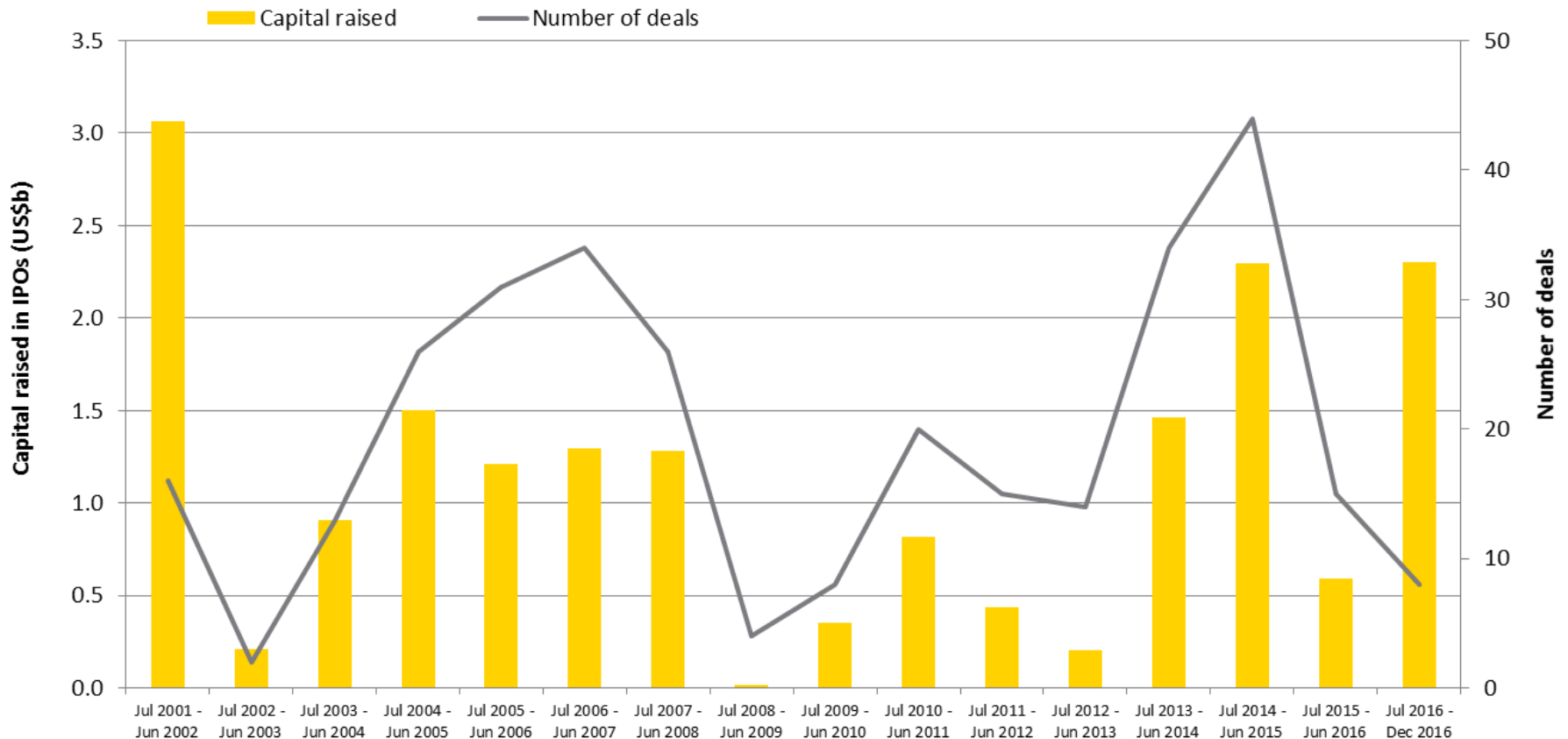
Venture Capital in Europe with Upwind

UK (335 million), **Israel** (153 million) and **Switzerland** (162 million) dominating

Company	Country	Product type (disease)	Gross raised (US\$m)
Oxford Nanopore Technologies	UK	Research and other Equipment	135
Oxford Nanopore Technologies	UK	Research and other Equipment	107
CeQur	Switzerland	Therapeutic devices (hematology / renal)	100
Inivata	UK	Non-imaging diagnostics	45
BoneSupport	Sweden	Therapeutic devices (orthopedic)	37
BiomUp	France	Therapeutic devices (non-disease-specific)	35
SpineArt	Switzerland	Therapeutic devices (orthopedic)	33
G-Therapeutics	Switzerland	Therapeutic devices (neurology)	29
Retina Implant	Germany	Therapeutic devices (ophthalmic)	29
V Wave	Israel	Therapeutic devices (cardiovascular / vascular)	28
EIMindA	Israel	Imaging	28
Eye Tech Care	France	Therapeutic devices (ophthalmic)	28
STAT - Diagnostica & Innovation	Spain	Non-imaging diagnostics	28
Blue Earth Diagnostics	UK	Imaging	28
LifeBond	Israel	Therapeutic devices (non-disease-specific)	27
JenaValve Technology	Germany	Therapeutic devices (cardiovascular / vascular)	27
EarlySense	Israel	Non-imaging diagnostics	25
Ornim Medical	Israel	Non-imaging diagnostics	25
Cambridge Medical Robotics	UK	Therapeutic devices (non-disease-specific)	20
BioWink	Germany	Non-imaging diagnostics	20
Nyxoah	Belgium	Therapeutic devices (neurology)	20
Ornim Medical	Israel	Non-imaging diagnostics	20

Treat of IPO firework to extinguish, but largest IPO in 2nd half of 2016

US and European medical technology IPOs by period



Source: EY, Capital IQ, BioCenutry and VentureSource.

*Convatec Group raised £1.47 billion through its IPO

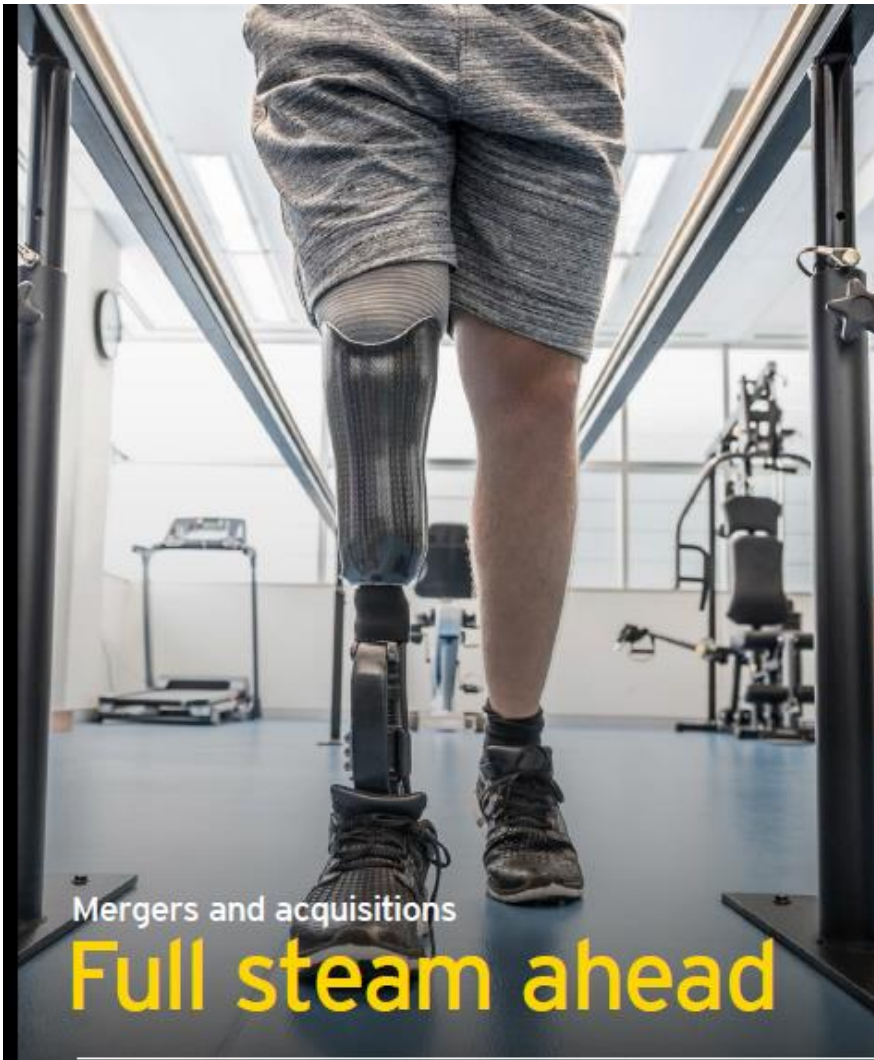
IPOs in Europe und USA

July 2016 – December 2016

Company	Ticker	Country	Product type (disease)	Gross raised (US\$m)
Convatec Group	CTEC	UK	Therapeutic devices (non-disease-specific)	1,990.7
NovoCure	NVCR	Israel	Therapeutic devices (oncology)	165.0
Penumbra	PEN	US - California	Therapeutic devices (cardiovascular / vascular)	138.0
iRhythm Technologies	IRTC	US - California	Non-imaging diagnostics	123.1
Obalon Therapeutics	OBLN	US - California	Therapeutic devices (metabolic/endocrinology)	75.0
Advanced Accelerator Applications	AAAP	France	Imaging	75.0
Senseonics	SENH	US - Maryland	Non-imaging diagnostics	45.0
Curetis	CURE	Germany	Non-imaging diagnostics	44.4
Tactile Systems Technology	TCMD	US - Minnesota	Therapeutic devices (hematology/blood)	40.0
Cellnovo	CLNV	UK	Therapeutic devices (non-disease-specific)	35.0
InDex Pharmaceuticals Holding	INDEX	Sweden	Non-imaging diagnostics	29.2
Creo Medical Group	CREO	UK	Therapeutic devices (non-disease-specific)	27.1
Pulse Biosciences	PLSE	US - California	Therapeutic devices (oncology)	20.0
Oncimmune	ONC	UK	Non-imaging diagnostics	16.8
Acarix	ACARIX	Denmark	Non-imaging diagnostics	16.4
Logos Biosystems	A238120	US - Virginia	Research and other Equipment	15.5
Viveve Medical	VIVE	US - California	Therapeutic devices (women's health)	15.5
SENSUS Healthcare	SRTSU	US - Florida	Therapeutic devices (oncology)	11.0
Biocorp Production	ALCOR	France	Therapeutic devices (non-disease-specific)	9.8
Immunovia	IMMNOV	Sweden	Non-imaging diagnostics	7.1
PAVmed	PAVMU	US - New York sta	Therapeutic devices (multiple)	5.3
Scandinavian ChemoTech	CMOTEC B	Sweden	Other	1.9
Invent Medic Sweden AB	IMS	Sweden	Therapeutic devices (urology / pelvic)	1.1
QuickCool	QUICK	Sweden	Therapeutic devices (neurology)	1.0

Transactions as Important Strategic Leverage

“Strengthening Strengths” (“PPs”) vs. Divestments (“Conglomerates”)



Mergers and acquisitions

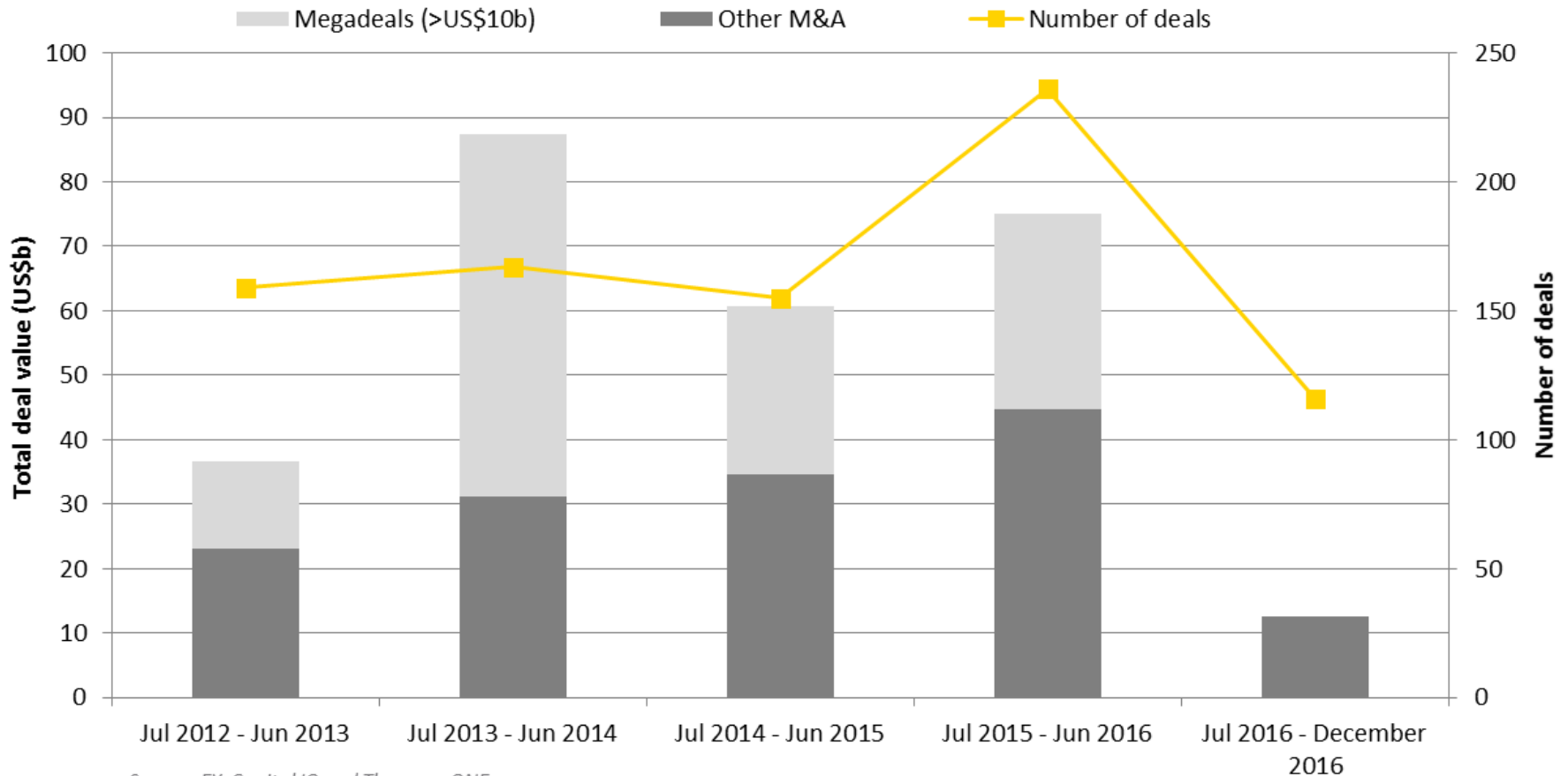
Full steam ahead

Growth by acquisition is still medtech’s go-to strategy, one that shows no sign of changing in the near term.

Solid M&A-Market (US/EU)

“Strengthening Strengths” (“PPs”) vs. Divestments (“Conglomerates”)

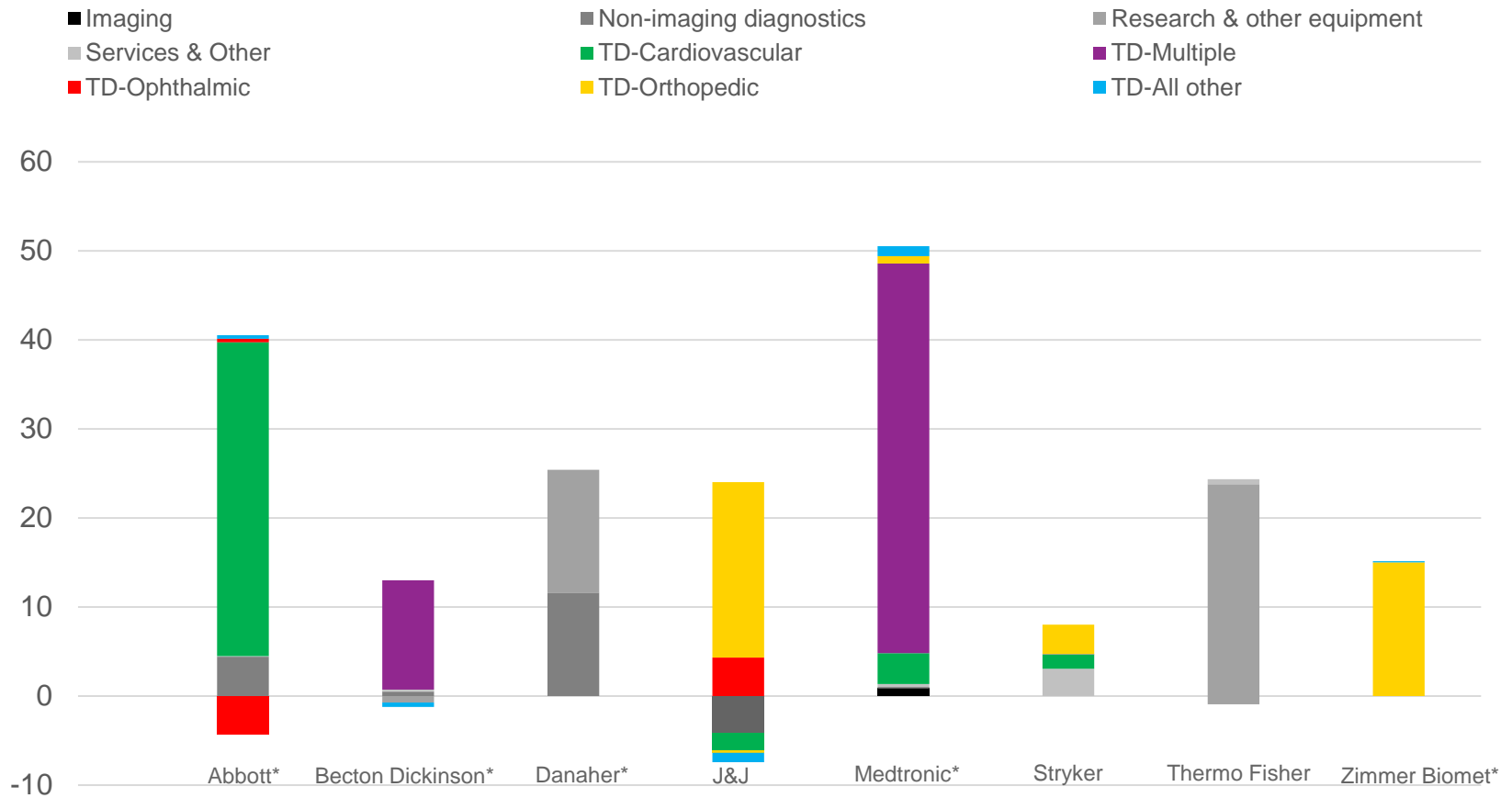
M&As in the US and Europe



Source: EY, Capital IQ and Thomson ONE
Chart includes deals with value disclosed

Focus on Market Leadership

Product portfolio and bundled patient solutions/offerings



*Figures include previous M&As of companies that were later acquired: Abbott (St. Jude Medical), Becton Dickinson (CareFusion), Danaher (Beckman Coulter), Medtronic (Covidien), and Zimmer Biomet (Biomet).

The therapeutic device (TD) category was further subdivided by therapeutic area. TD — Multiple refers to deals that covered multiple therapeutic areas. TD — All other refers to a deal in a therapeutic area other than cardiovascular, ophthalmic or orthopaedic.

Source: EY, Capital IQ and Thomson ONE.

Medtech M&A Environment (US/EU)

Strong focus on US-companies (acquirer and seller)

Acquiring company	Location	Acquired company	Location	Value (US\$m)
Abbott Laboratories	US - Illinois	St. Jude Medical	US - Minnesota	\$30,700
Dentsply International	US - Pennsylvania	Sirona Dental Systems	US - New York state	\$5,520
The Dan				200
St. Stry				100
Gre				75
The Stry				30
Med				80
Zim				280
Son				00
TE				00
Res				50
Hoy				50
Med				75
Lab				30
Bio-				76
Bos				58
Colo				71
Ess				25
Inst				10
Niss				60
DUP				55
Zim				38
Mer				35
Alle				31
Shanghai Genext Medical Techno	China	Lifeline Scientific	US - Illinois	\$88
Zoetis	US - New Jersey	Scandinavian Micro Biodevices	Denmark	\$80



Press release
30.3.2017

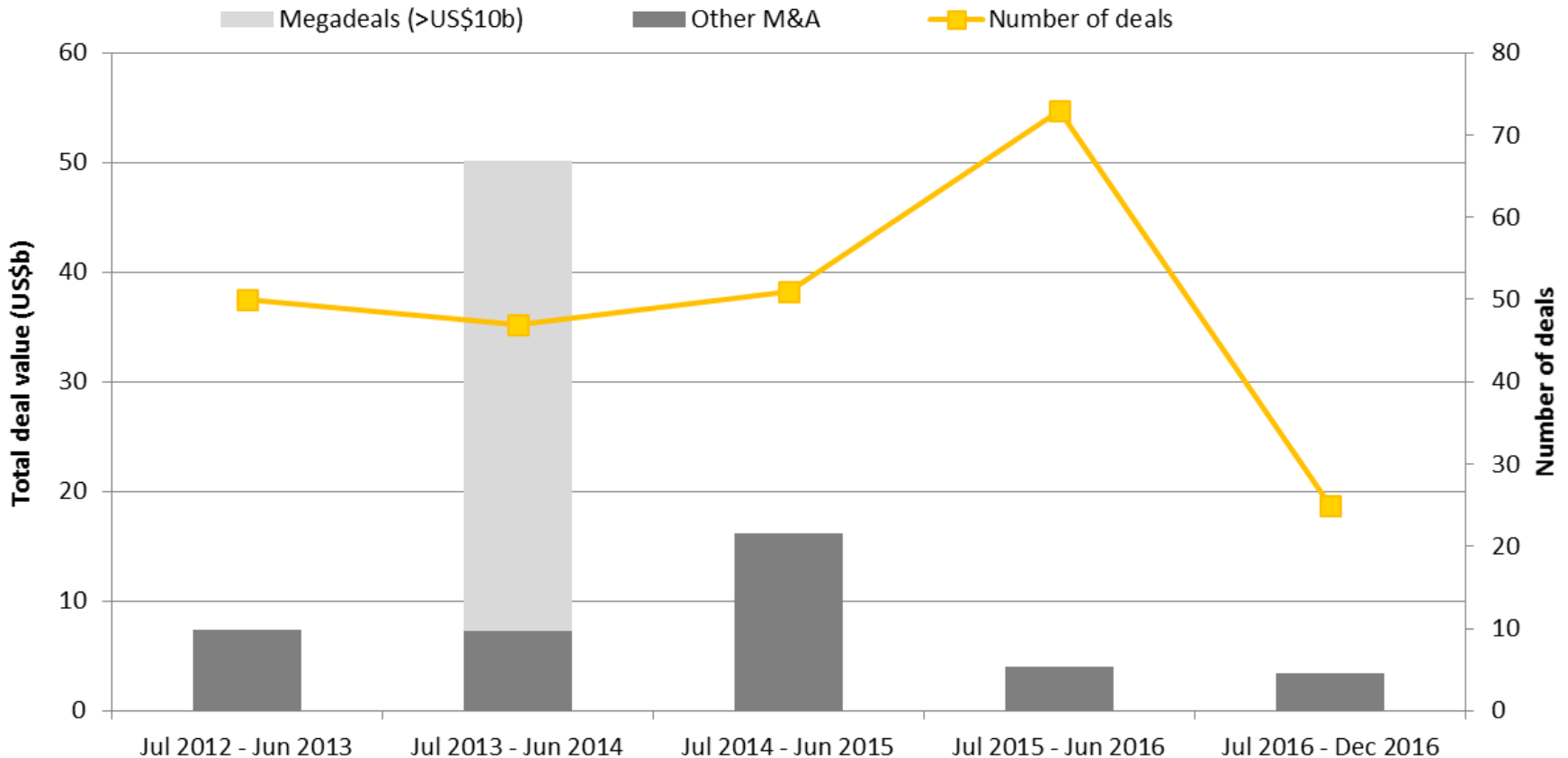
Symetis and Boston Scientific reach USD 435 million purchase agreement

- Definitive purchase agreement whereby Boston Scientific will acquire Symetis for \$435 million in an all cash, up-front payment
- Acquisition of Symetis will expand the treatment offerings for patients with aortic valvular heart disease
- Acquisition projected to close during the second quarter of 2017, subject to customary closing conditions
- Symetis' IPO launched on Euronext Paris and very well received by the investment community, has been halted

Europe with less M&A-Activity

Less options due to weak financing?

European M&A by year



Source: EY, Capital IQ and Thomson ONE

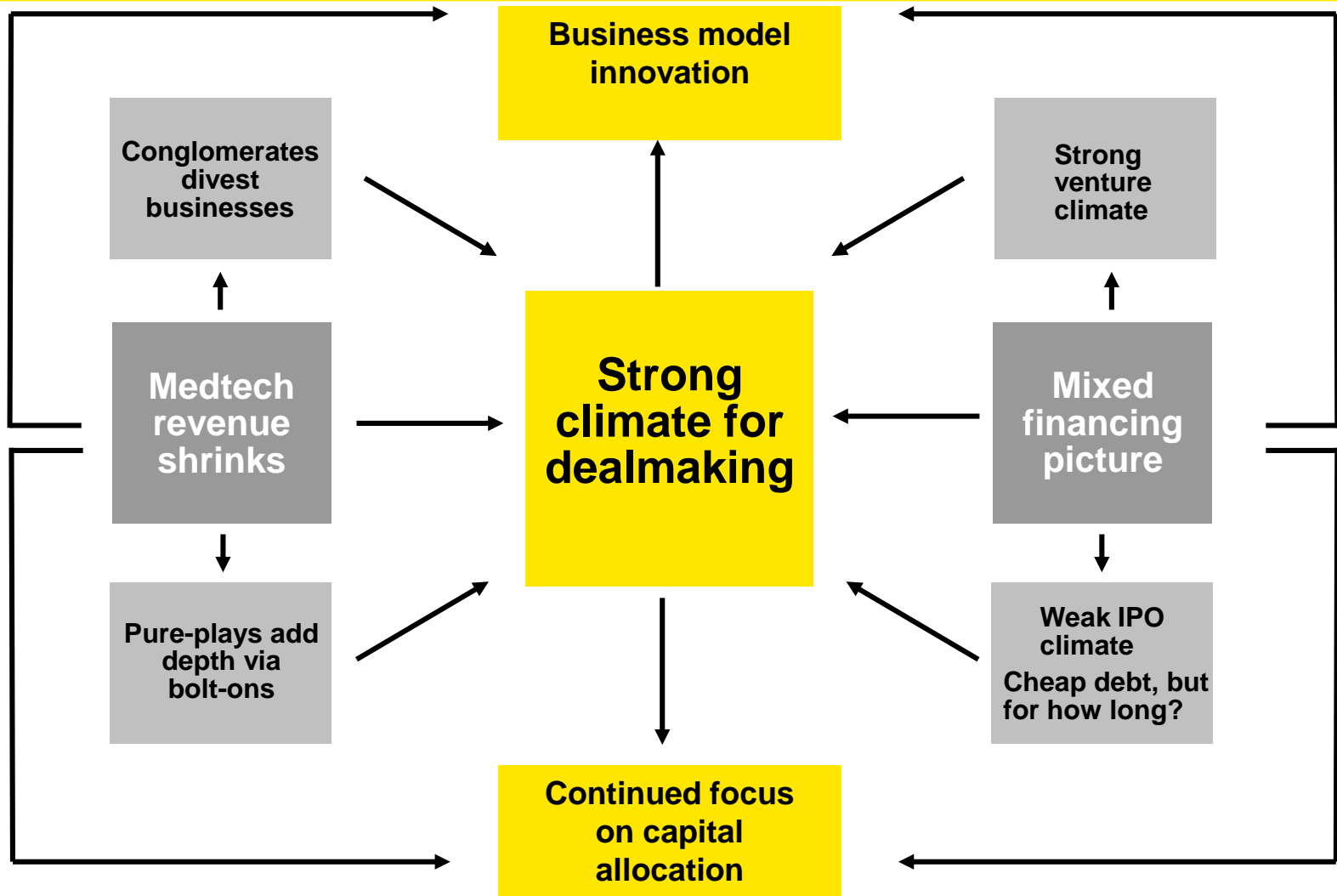
Chart includes deals with value disclosed and in which the acquired company is a European medtech company



Growth remains the most
important Challenge

Continous development of business models

Multiple forces will encourage robust medtech deal making climate



To reignite growth, medtechs must also rethink their business models

Traditional innovator

Category focus & scale

Gain market leadership by being #1 or #2 in key market segments



Embrace data

Leverage technology & analytics to drive outcomes & reduce costs



Value-oriented play

Diversify product portfolio to span across low priced & premium segments



Medtronic

Services solution

Address customer needs around select business segments

Efficient producer

Disease
Manager

Traditional
Innovator

The time to act is now

**Assess market
opportunity &
relative positioning**

**Understand
customer needs**

**Conduct an internal
evaluation of
portfolio**

**Drive decisions
around business
models**

Source: EY analysis

... as new competitors threaten to disrupt incumbents

ETHICON + **verily** = **VERB SURGICAL**
a Johnson & Johnson company

gsk GlaxoSmithKline + **verily** = Galvani Bioelectronics


fitbit.

 IBM Watson Health

GRAIL

+

 SharedClarity

Medtronic

HELIX


Propeller

 **onduo**
Onward together



Boehringer Ingelheim + **QUALCOMM**

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The better the question. The better the answer. The better the world works.

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Cross-sector convergence in health

In this interview we talk to EY's Jacques Mulder about the ways non-traditional entrants are disrupting health, and if we're already past the point of no return.

Insights from Mark McClellan, Brookings Institution

A conversation with the former FDA Commissioner and CMS Administrator on implications of the move to value-driven health care.

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Thank you for your attention



Jürg Zürcher

Partner, EY Medtech Leader GSA

Ernst & Young AG

Aeschengraben 9

CH-4002 Basel

Phone: +41 58 286 84 03

Mail: juerg.zuercher@ch.ey.com

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