

Domestic Resource Mobilization in Partner Countries of the Belgian Development Cooperation

(The role of Value-Added Tax and Institutions)

Romain Houssa and Kelbesa Megersa

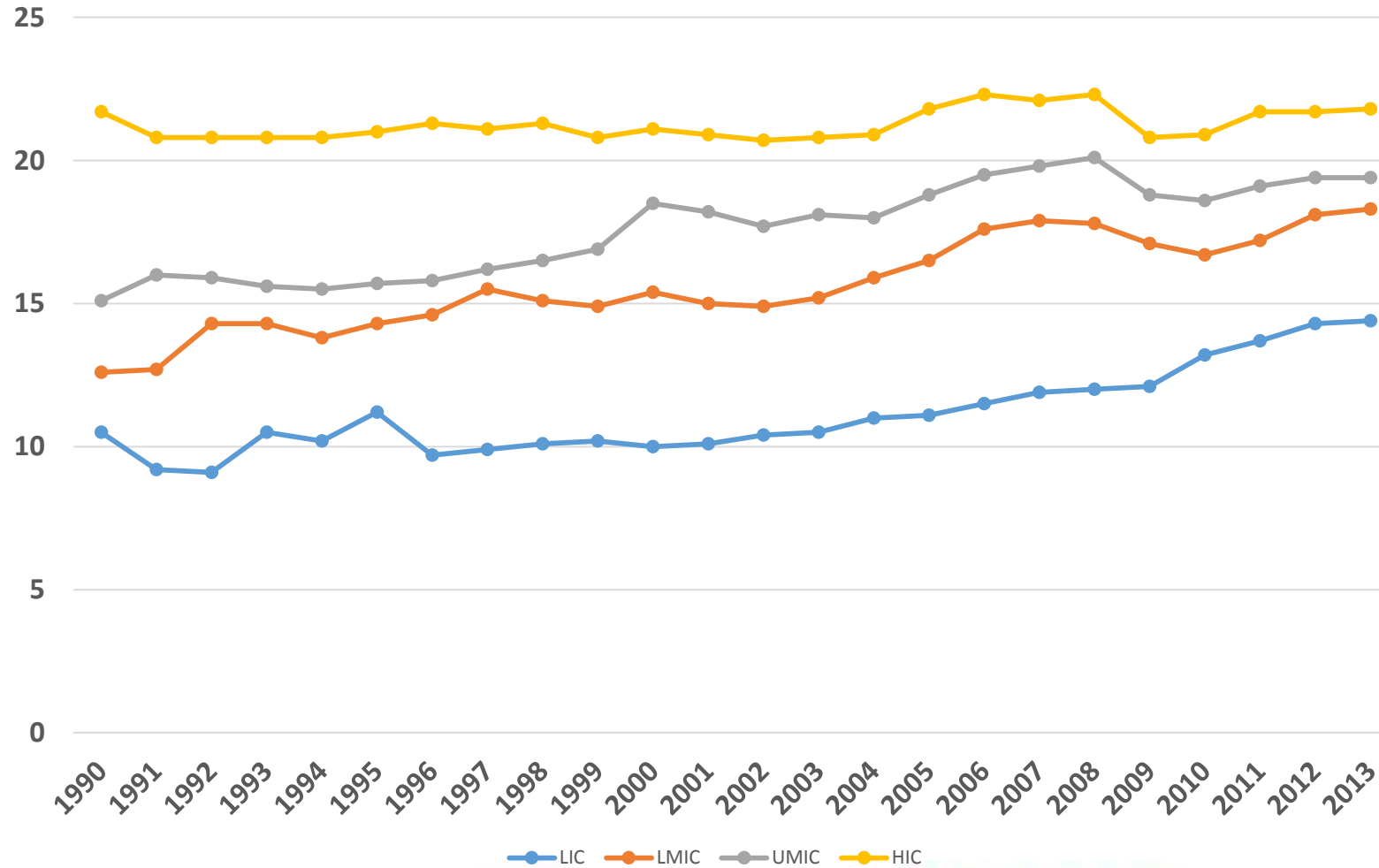
March 30, 2017

DGD

Introduction

- Huge-resource gap required to finance development needs in LICs: from Billions to Trillions... (Develop. Mult. Develo. Finance, 2015)
- Advantages to focus on **domestic taxation**
 - enhance state building and strengthen the state-citizen relationships (Herbst 2000, Tilly 1975, OECD and AFDB 2010)
 - relatively more stable than other sources of government revenue

Tax revenue across income groups



Policy (Research) Objectives:

- **Special focus on partner countries**
- **we analyze...**
 - The state of Domestic Resource Mobilization (DRM)
 - The role of Value Added Tax (VAT) for DRM
 - Assessing rooms for improvement (VAT gap)
 - The role of institutions for DRM

Research on Taxation at BeFinD:

- various (interlinked) studies on DRM capacities of DGD partner countries (+) other developing countries...recent examples
 - [Institutional quality, economic development and the performance of VAT](#), *BeFinD Working Paper N°15* (Romain Houssa and Kelbesa Megersa)
 - [The Performance of VAT in DGD-partner Countries](#), *BeFinD Working Paper N°16* (Mattéo Godin, Romain Houssa and Kelbesa Megersa)
 - [Taxpayer behaviour and institutions in Sub-Saharan Africa](#), *BeFinD Working Paper N°169* (Roukiatou Nikiema and Pam Zahonogo)
 - [A Review of critical issues on tax design and tax administration in a global economy and developing countries](#), *BeFinD Working Paper N°7* (Mattéo Godin and Jean Hindriks)
 - [Follow you, follow me: public investment under tax competition](#), *BeFinD Policy Brief N° 1* (Jean Hindriks and Yukihiro Nishimura)

...for more, visit <http://www.befind.be/publications/taxes>

What we do at BeFinD?

- Assess how much tax revenue countries could ‘potentially’ collect and compare this to what they ‘actually’ raise as revenue
- Review the tax-policy reforms which partner countries introduced
- Study the performance of reforms in terms of DRM
- Focus on the Value-Added Tax (VAT) given its potential advantages in enhancing DRM in developing countries

Outline

- **I. Impact of VAT on DRM**
- **II. Role of institutional quality on DRM**
- **III. Case studies on Partner Countries**
- **IV. Conclusion**



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I.

Impact of VAT on DRM



ACADÉMIE
DE RECHERCHE ET
D'ENSEIGNEMENT
SLONENIAN

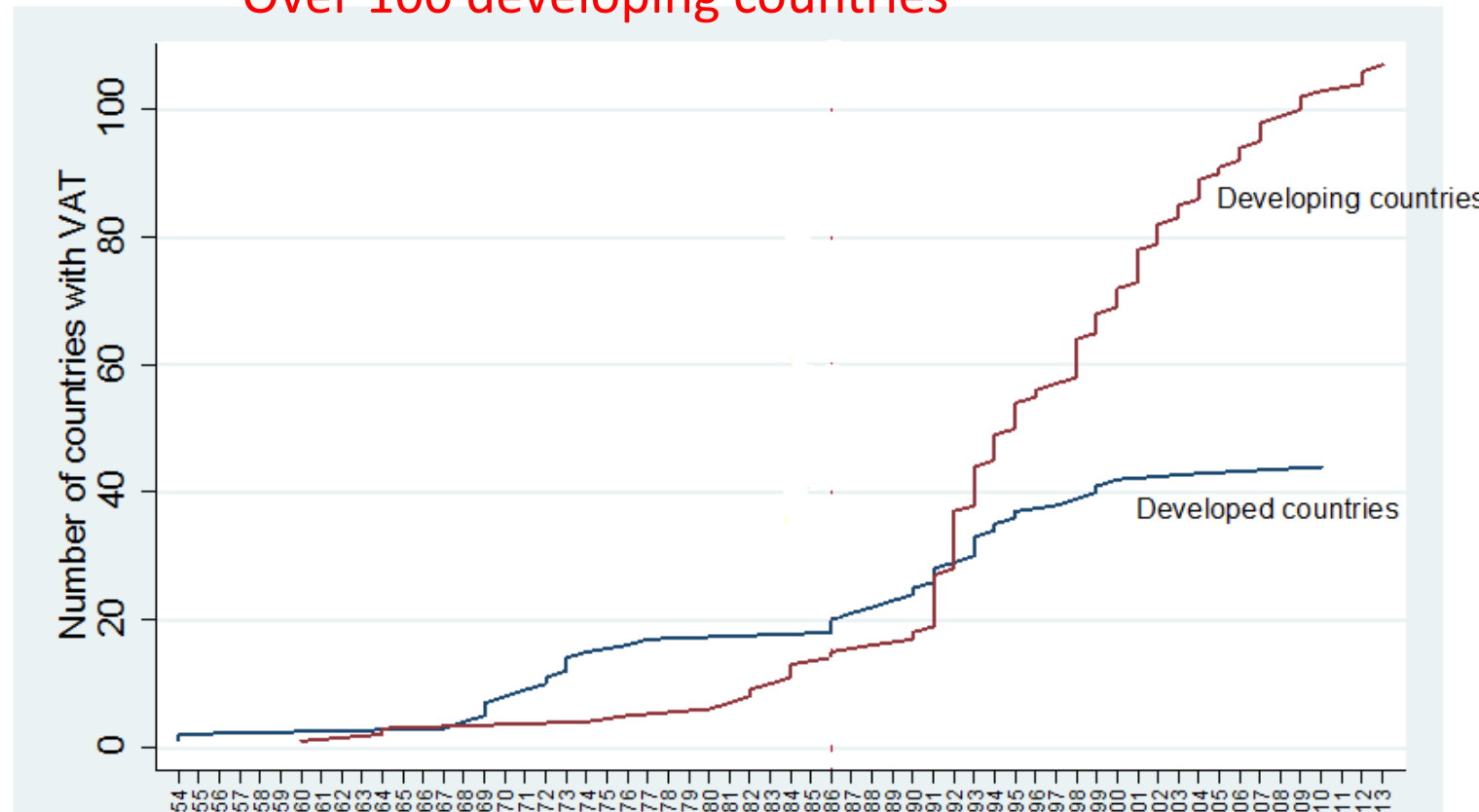
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Why is VAT important?

- VAT is relatively easy to administer → Less prone to tax evasion
- Suitable for developing countries
 - less sensitive to the informal market
 - If well designed, it can even reduce the size of the informal sector
- Less distortionary among taxes
 - In comparison with income taxes, VAT does not change consumption decisions relative to savings and investment decisions
- No cascading effects
 - Unlike other consumption taxes
 - Tax on a commodity is charged at separate stages of the production process without deductions
 - Sellers or firms paying VAT, can receive credit for the VAT paid on intermediate inputs

VAT adoption across the world

- Adopted by more than 160 countries
- Over 100 developing countries

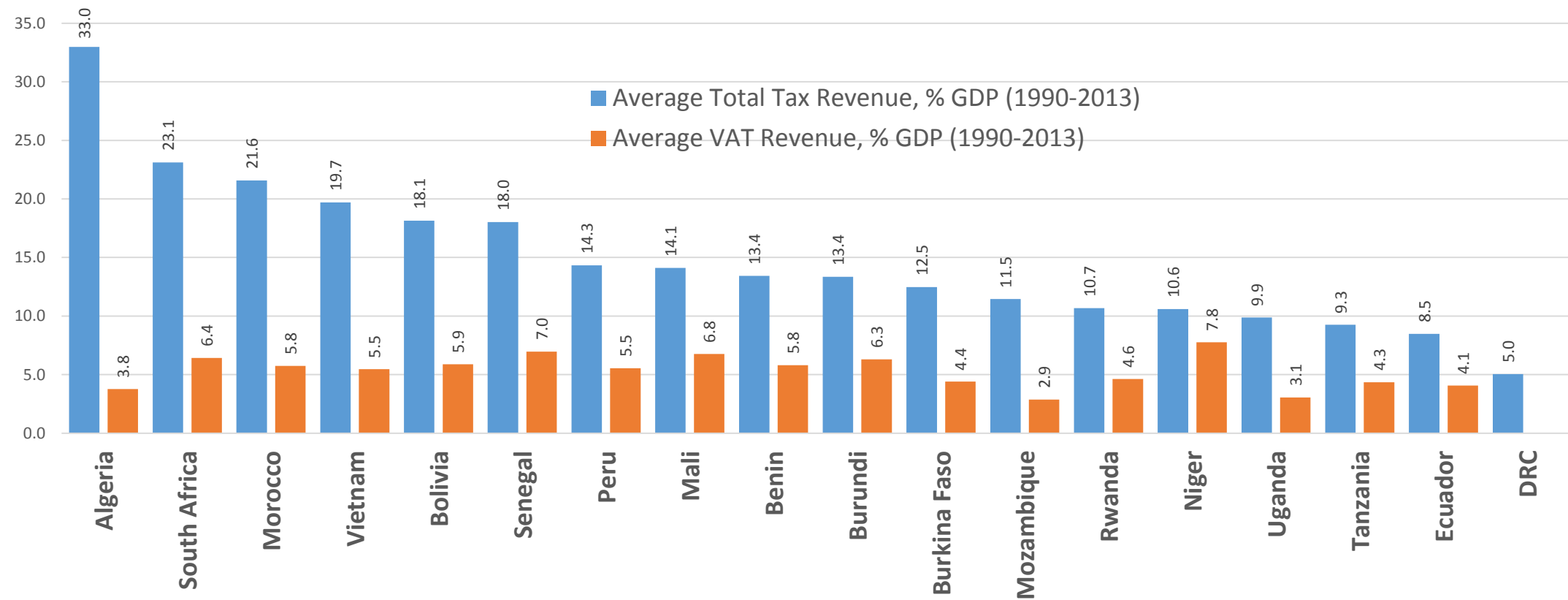


DGD partner Countries	Year of VAT adoption	Current VAT rate (%)	VAT Rate at introduction (%)
Morocco	1986	20	19
Algeria	1992	17	21
Burkina Faso	1992	18	18
Mali	1991	18	17
Niger	1986	19	12
Senegal	1961-80	18	20
Benin	1991	18	18
DRC	2012	16	16
Rwanda	2001	18	18
Burundi	2009	18	18
Uganda	1996	18	18
Tanzania	1998	18	20
Mozambique	1999	17	17
South Africa	1991	14	10
Ecuador	1981	12	4
Peru	1991	18	20
Bolivia	1986	13	10
Vietnam	1999	10	10

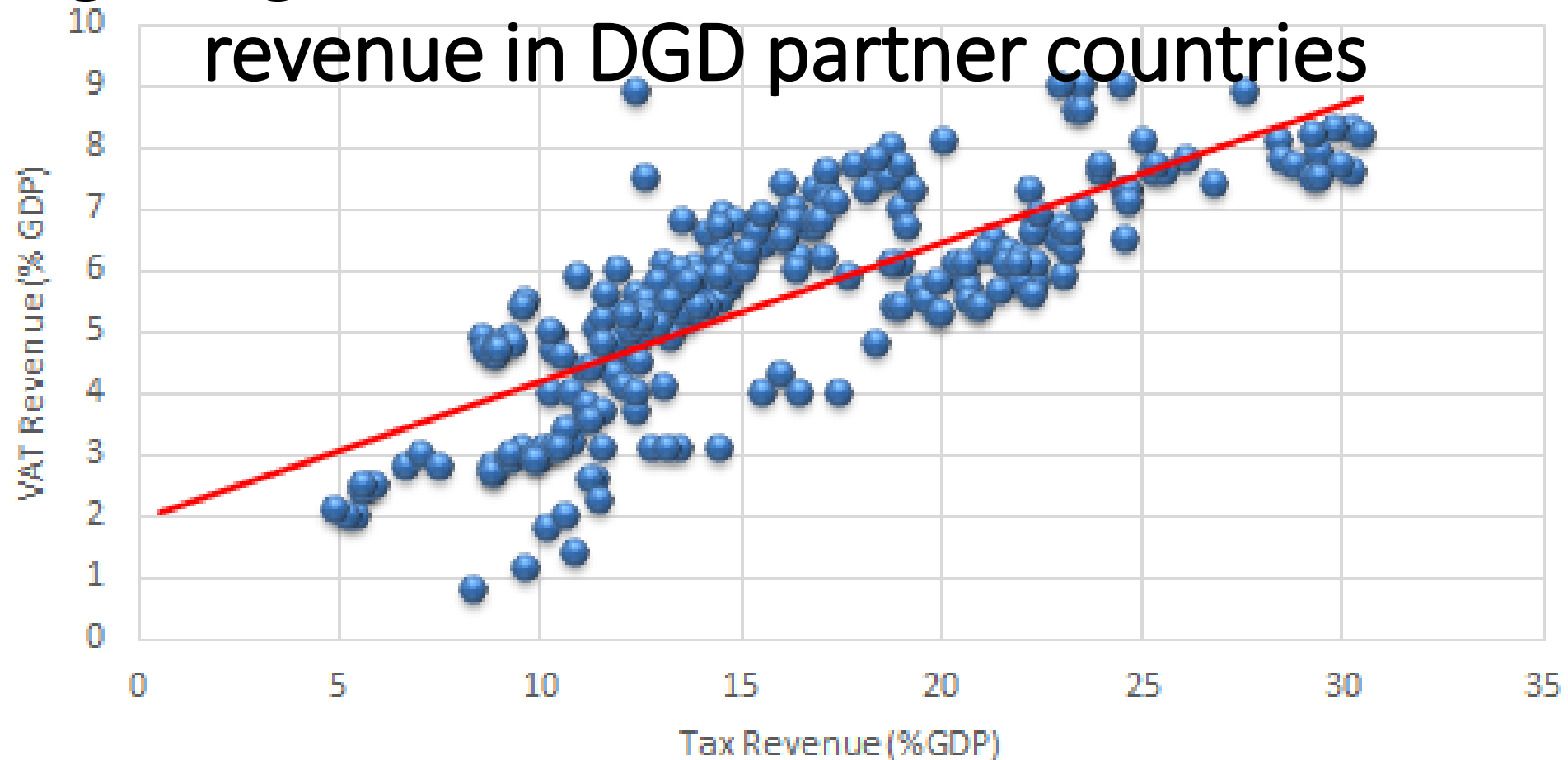
VAT adoption by
DGD partners
(past & present)

Current state of DRM:

Tax and VAT revenue in DGD-partner countries



High degree of correlation between Tax & VAT revenue in DGD partner countries



VAT, DRM and developing countries:

The overall picture...across the developing world & elsewhere

- We estimate the following tax-effort equation

$$Tax_{i,t} = \alpha + \beta VAT_{i,t} + \gamma X_{i,t} + \delta \sum_{j=1}^n w_{ij} Tax_{j,t} + \varepsilon_{i,t}, i = 1, \dots, n$$

- $X_{i,t}$ include: the level of development, size of the informal sector, country size, size of dependent population, institutional quality ...

VAT, DRM and developing countries:

The overall picture...across the developing world & elsewhere

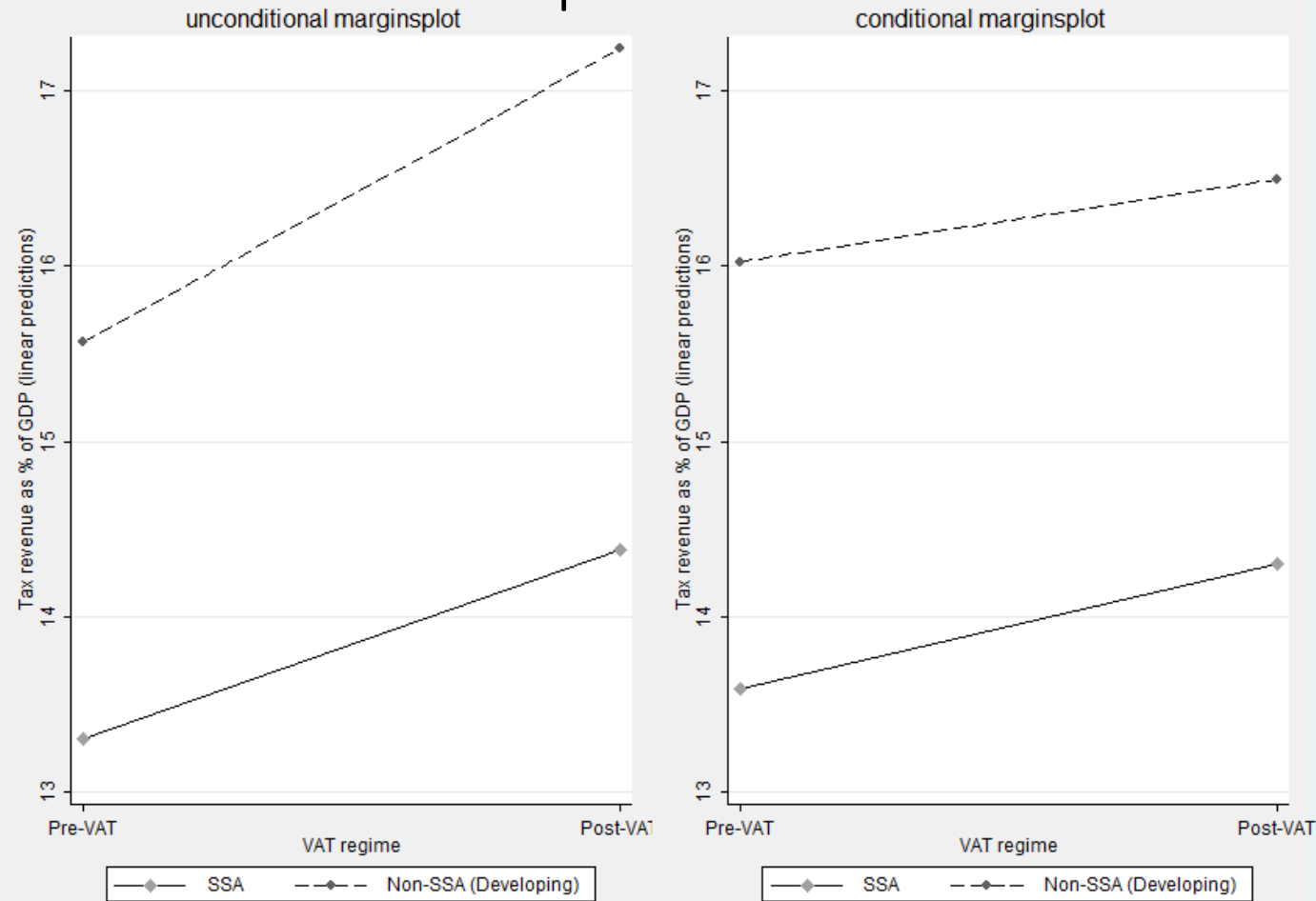
- Data from 149 countries over the 1970 - 2013 period indicates that VAT adoption has improved tax-revenue collection:
 - Developing countries,
 - Sub-Saharan Africa (SSA) and
 - Non-SSA Developing countries
 - Developed countries

Performance of VAT in SSA

- Marginal effect of VAT adoption (i.e. relative contribution of VAT to tax revenue) is estimated to be strong for SSA and other developing countries
- The positive effect of VAT on tax collection in SSA is reassuring because some earlier studies were not able to identify an overall positive effect for the region
- We show that analysis of data over the recent period (where VAT has become more contributive) is important to highlight its positive role in SSA's DRM efforts

Evidence of gains from VAT adoption in SSA & non-SSA developing c.

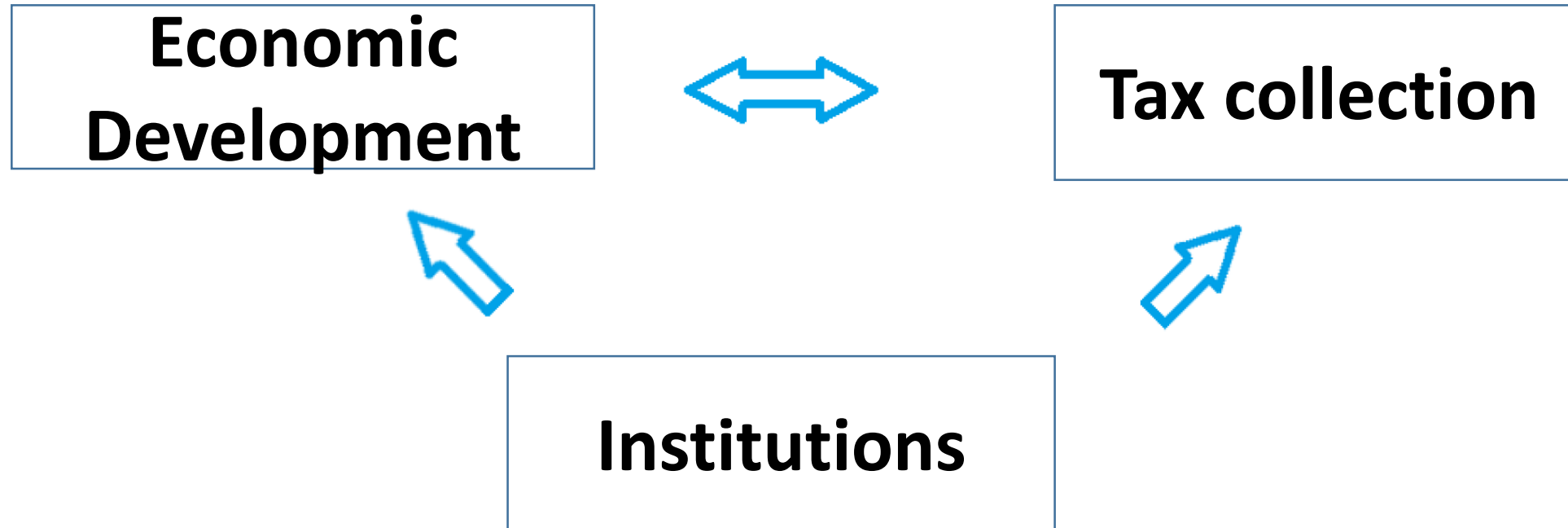
Marginal effects of VAT adoption: 1970-2013



II.

Role of institutional quality on DRM

Taxation, Institutions & Economic Development



Institutional quality & DRM:

- A good-institutional environment should improve both the demand as well as the supply factors inherent to the performance of VAT.
- institutional factors (such as the capacity of the tax administration,
- government effectiveness in providing public goods, trust in the government)
- on the effectiveness of tax policies and tax compliance

Role of institutions in Tax Payer Behaviour

- Taxpayer behaviour is affected by quality of institutions
 - BeFinD research on Afrobarometer's round 5 (2011/2013) survey data; 29 SSA countries
- Individuals' attitudes towards paying tax are significantly dependent on the quality of institutions
- When the quality of institutions is perceived as good, individuals are more likely to pay taxes
- Indirect effects of quality of institutions:
 - Individual's perception of difficulty to evade taxes → more likely to pay tax
- Quality of public services offered by the state:
 - Confidence in the tax authorities (partial or total) & transparency → more likely to pay tax
 - perception of corruption, cheating, quality of health, quality of education, quality of electricity, confidence, ethnic discrimination... have a significant effect on tax payment!

Not paying taxes:

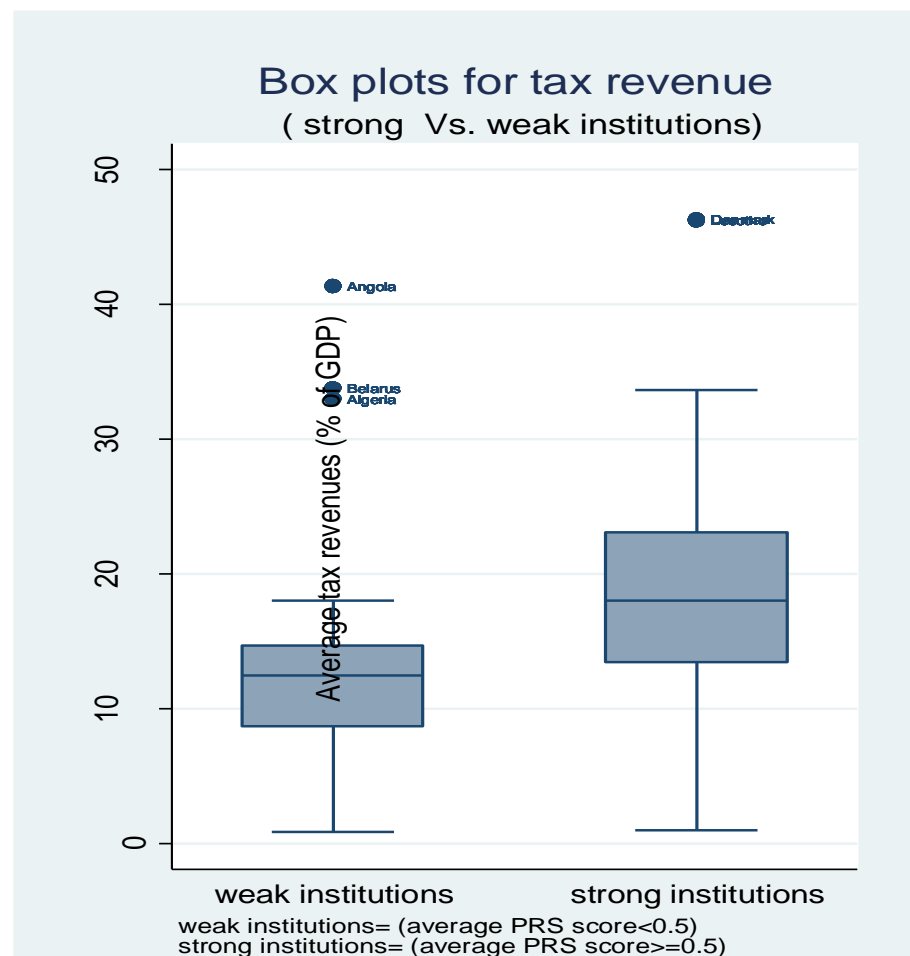
wrong or not wrong ? Evidence from survey

please tell me whether you think the action is not wrong at all, wrong but understandable, or wrong and punishable : Not paying the taxes they owe on their income

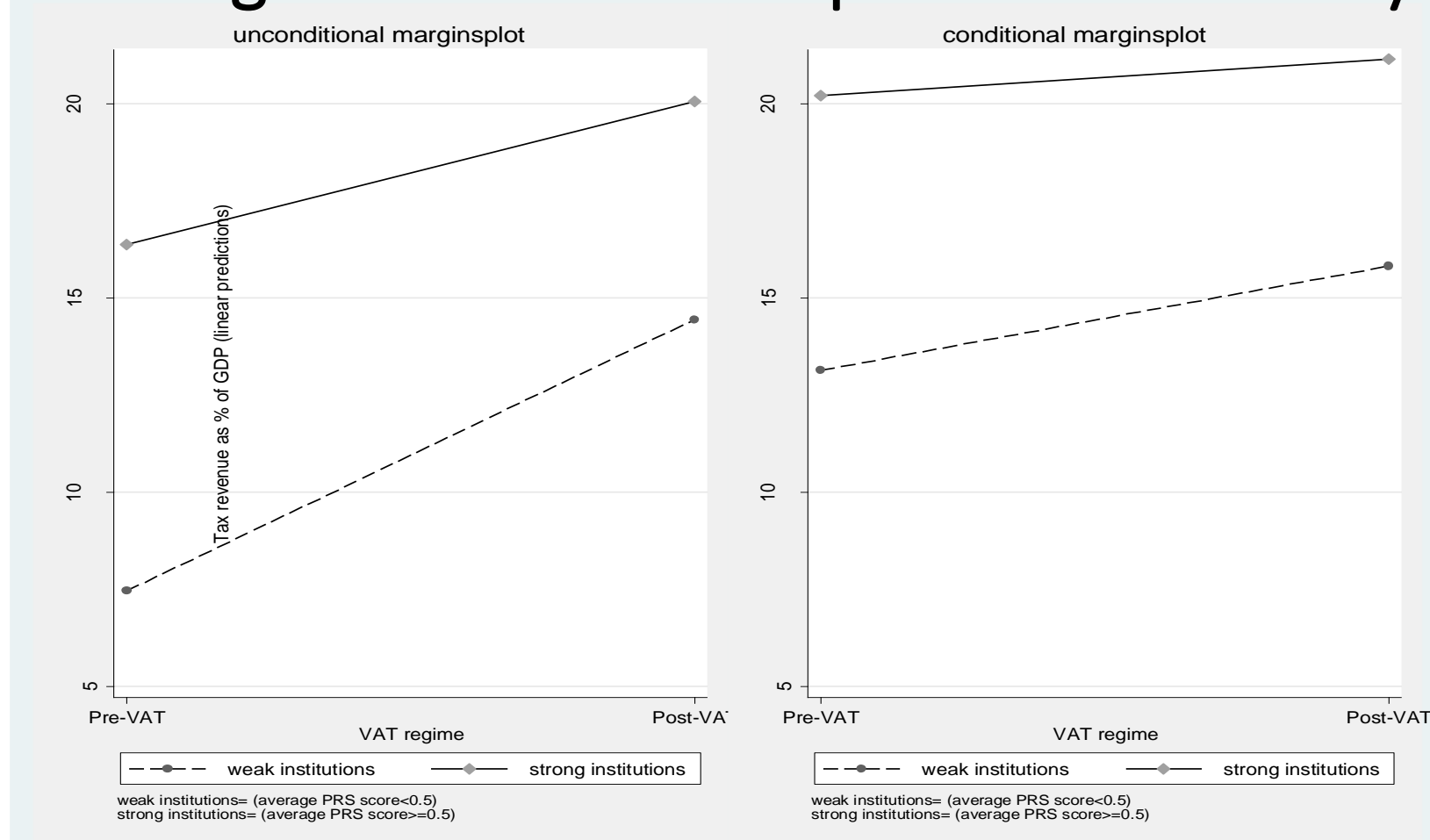
	Observation	Percentage
Not wrong at all	4,566	11.36
Wrong but understandable	14,362	35.73
Wrong and punishable	19,193	47.67
Do not know	2,108	5.24
Total	40,199	100,00

Source: Authors, with Afrobarometer round 5 data.

Role of institutions in Tax Revenue Gaps



Evidence of gains from VAT adoption in all country groups



III.

Case studies on the partner countries of the Belgian Development Cooperation

Case Study (1): Bolivia

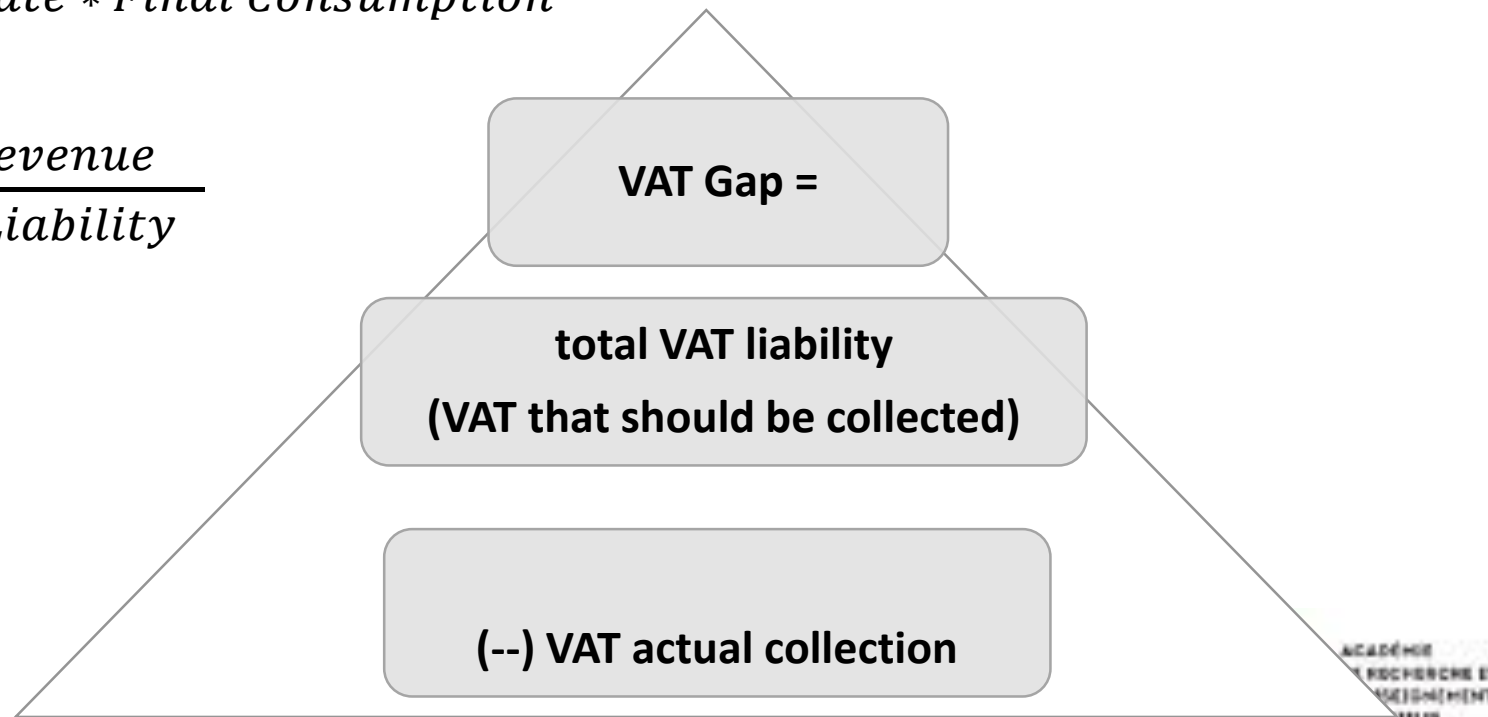
- VAT, which is locally known as ‘Impuesto al Valor Agregado (IVA)’, was introduced in Bolivia in 1986.
- Bolivia one of the early adopters – by the standard of developing countries
- The VAT is administered by the internal tax service (‘Impuestos Nacionales’).
- The nominal VAT rate is 13%, except in cases where there is a tax regulation exempting certain transactions.
- However, the effective rate is 14.94% since VAT is included in the sales price (see EY, 2015).

VAT gap: definitions

VAT gap → Efficiency of a VAT system (C-efficiency)

$$= \frac{\text{VAT Revenue}}{\text{VAT Rate} * \text{Final Consumption}}$$

$$= \frac{\text{VAT Revenue}}{\text{VAT Liability}}$$



Sources of VAT gap

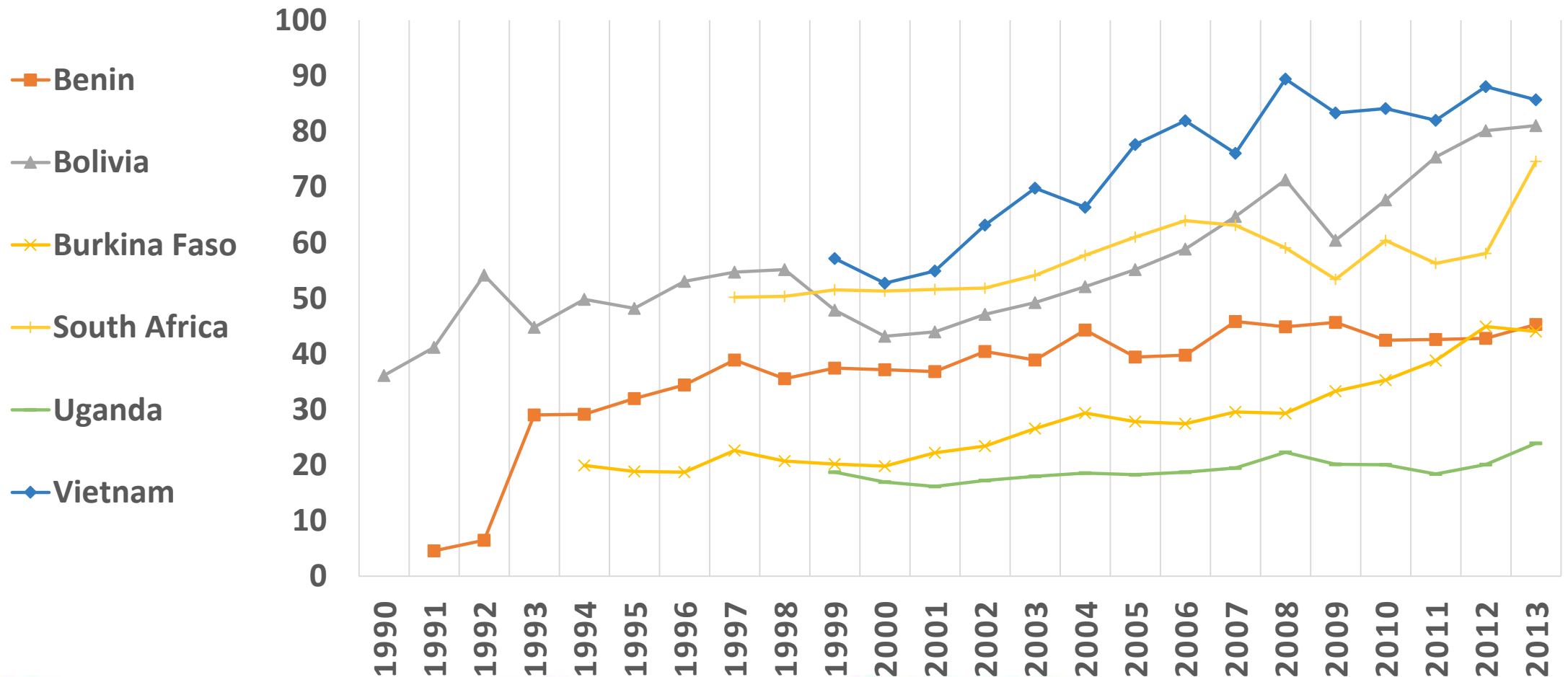
VAT gap can be stated in two main components (Keen, 2013) :

1. Compliance gap:

2. Policy gap:

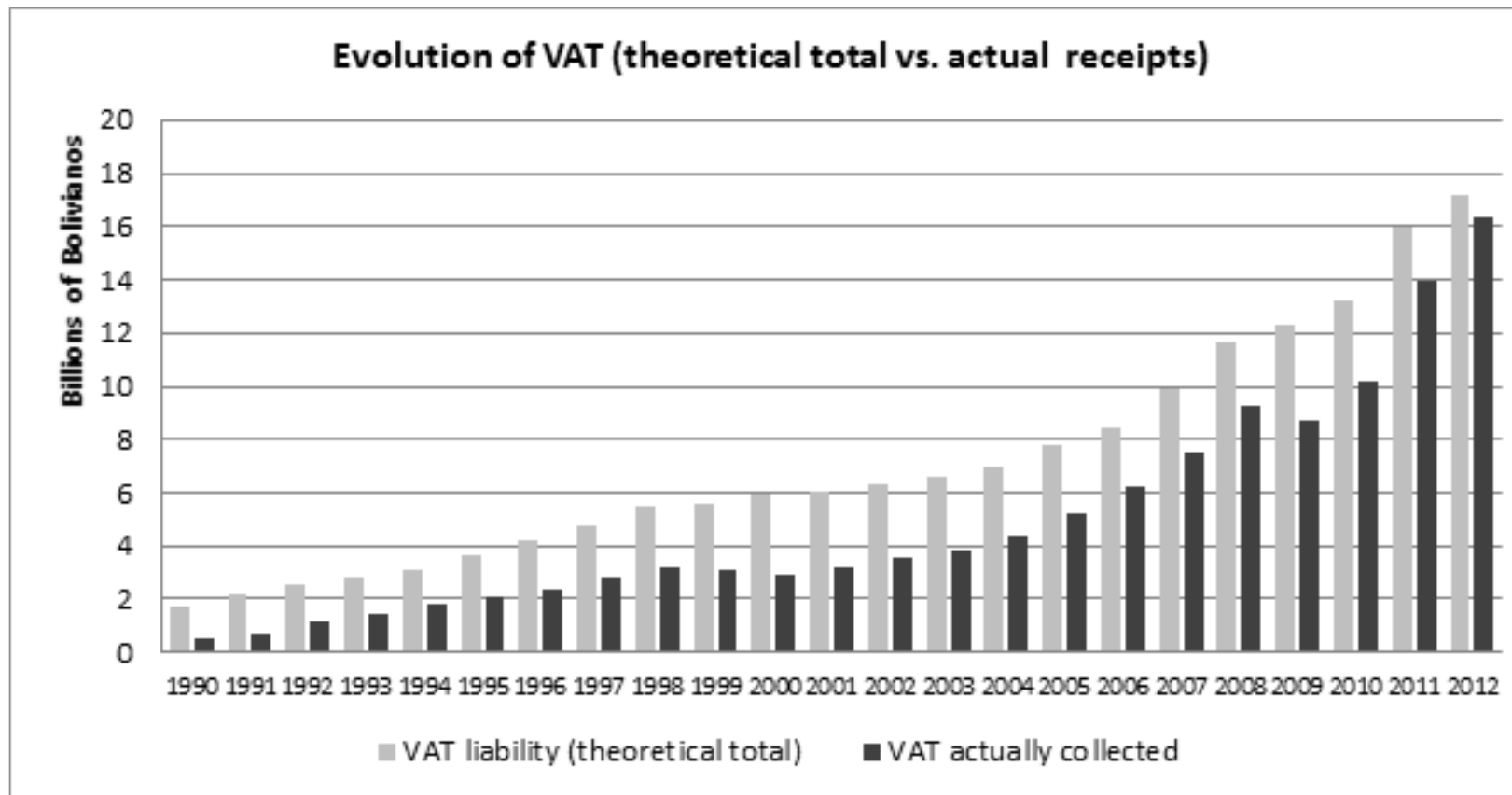
- Rate gap:
- Exemption gap:

VAT revenue collection efficiency (& VAT gap): DGD partners



Evolution of VAT liabilities & receipts in Bolivia

- Potential VAT receipts and actual VAT receipts have been rapidly rising in Bolivia.
- Bolivia is already benefiting from VAT (i.e. by boosting tax revenue)
- Bolivia has more room for further benefits if it closes the remaining VAT gap!



Quantifying the decline in VAT gap

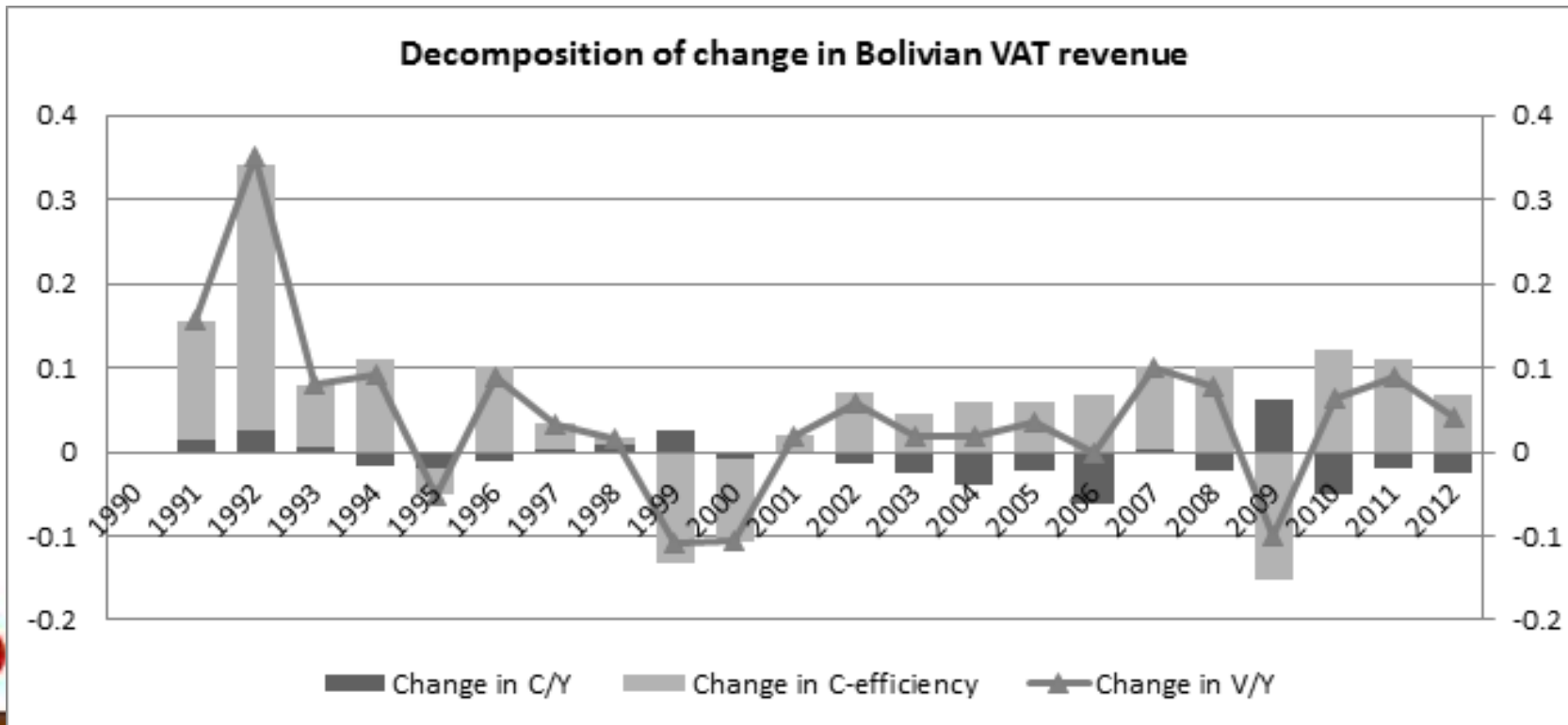
- VAT gap has decline from about 75% of VAT liability in 1990 to about 12.5% in 2011.
- This means that, the lost/uncollected VAT receipts have been cut by more than 60% within two decades.
- In the same period, VAT gap as share of GDP has fallen from about 7.5% to about 1.2%.
- This represents a massive revenue gain by Bolivia, where the country has closed a gap of over 6% of GDP in a span of two decades.

Decomposition of VAT revenue & VAT gap in Bolivia

- To see what drives the change in VAT revenue, we make a decomposition of the changes in VAT revenue as suggested in the literature (Keen, 2013).
- From the figure below, we note two interesting observations:
 - In the initial years after the introduction of VAT, changes in c-efficiency used to be the primary drivers of changes in gross VAT revenue (see period 1990 to 2002 in the figure below).
 - In later years (see years 2003 and onwards), however, changes in consumptions share of GDP have become equally responsible in determining changes in VAT revenue.
 - This might be explained by economic growth (where taxable consumption expands following growth).

(We analyze the post 1990 period due to data restriction)

- Assuming no change in VAT rates, developing countries could expect to make significant advances in VAT revenue
- 1) as their overall economy expands (thus consumption grows for example)
- 2) by boosting their c-efficiency and closing on the big VAT gaps that most of them have.
- In Bolivia, changes in c-efficiency have been the bigger driver of change in VAT revenue

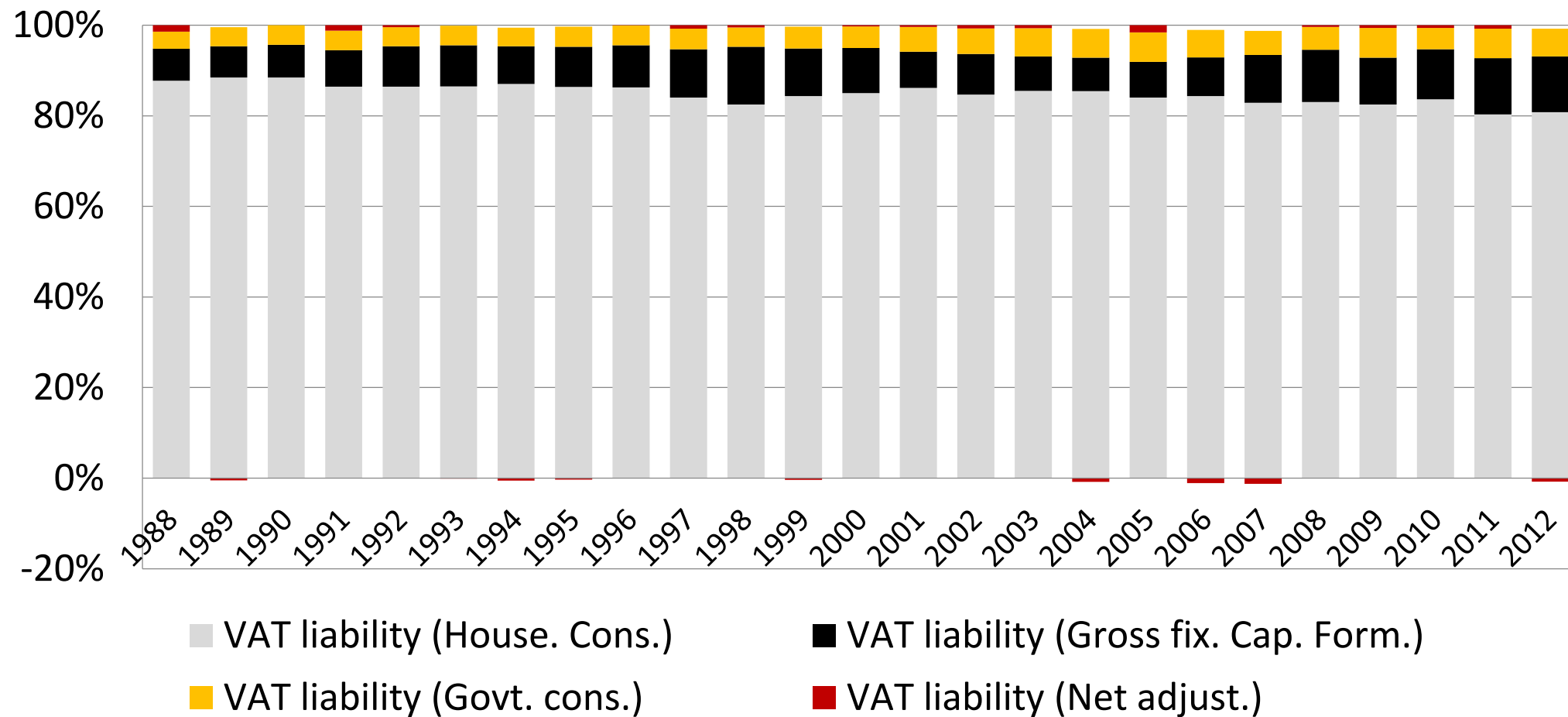


Closing the VAT gap in Bolivia...Progress over time!

Year	C-Efficiency	Compliance gap	Policy gap	Year	C-Efficiency	Compliance gap	Policy gap
1990	28	60	31	2001	44	46	18
1991	32	59	23	2002	47	43	18
1992	42	57	2	2003	49	42	16
1993	45	53	5	2004	52	38	15
1994	50	45	10	2005	55	33	18
1995	48	45	13	2006	59	28	18
1996	53	45	4	2007	65	27	11
1997	55	39	10	2008	71	22	8
1998	55	38	11	2009	60	31	13
1999	48	44	14	2010	68	25	10
2000	43	50	14	2011	75	14	13
				2012	80	9	12

Disaggregated VAT analysis

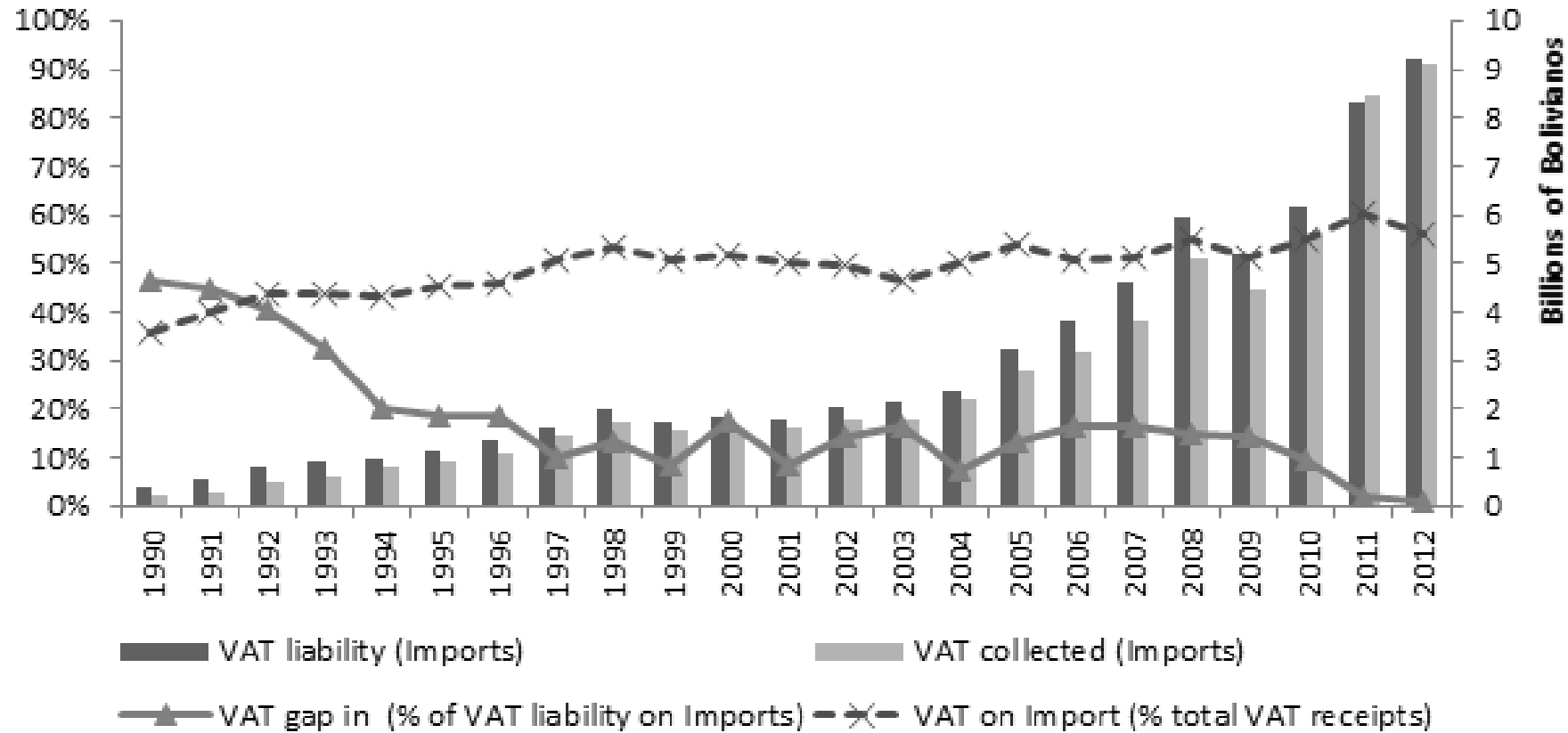
- to get a detailed and disaggregated view of the VAT liability in the country, we present the following figures
- The next figures give the VAT liabilities by dissecting the sources in to four sub sections, namely: household consumption, government consumption, gross fixed capital formation and net adjustments.
- as we can see from the following figure, house hold consumption represents the largest potential source of VAT receipts.
- Further, we notice that the sectoral share of potential VAT revenues has not changed much over the years.
- This is a possible indication that the structure of the Bolivian economy has not changed much over the years under consideration



Sectoral illustration (Imports)

- as a further illustrations, we will show how the VAT dynamics on imports has evolved in Bolivia in recent years.
- the VAT liability (i.e. potential VAT revenue) on imports has rapidly grown over recent years
- This mirrors the trend we saw for overall VAT liability for the whole economy
- even more interesting: the VAT gap on imports has almost disappeared in recent years
- Bolivia appears to have done a remarkable job with respect to closing the VAT gap on imports
- given that VAT revenue from imports constitutes a big part of overall VAT revenue (more than 50% in recent years), this has resulted in a robust surge in VAT receipts

Evolution of VAT from Imports (theoretical total vs. actual receipts)



Case Study (2): Burkina Faso

- VAT introduced in 1992
- Standard rate is 18%

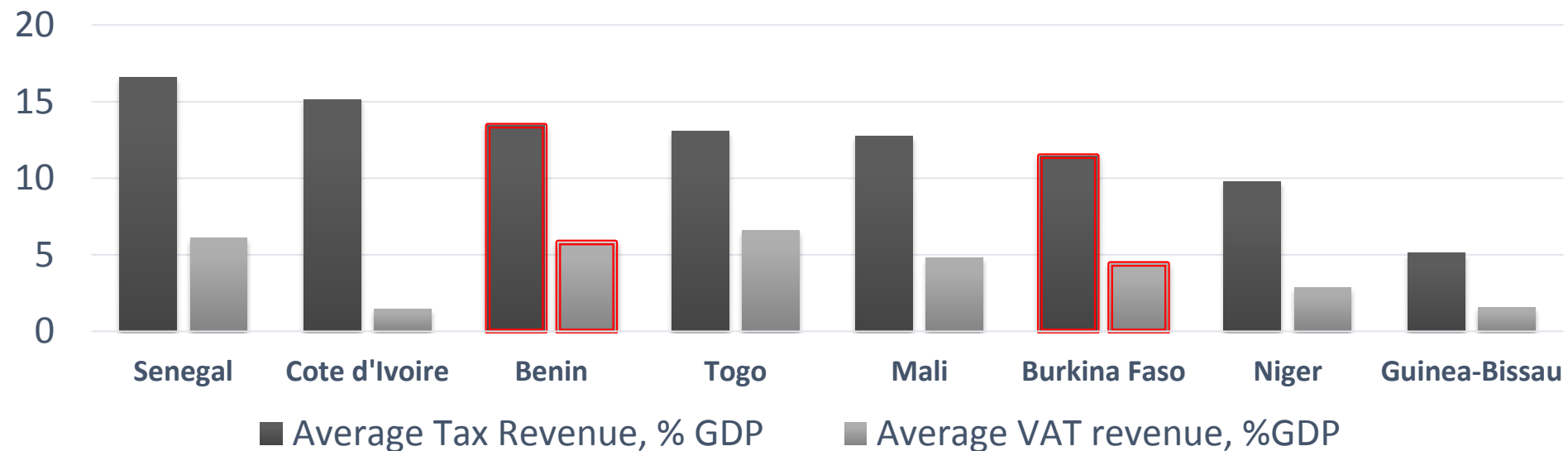
Notes:

1. VAT is imposed on production activities, the distribution of goods and the rendering of services in the Burkina Faso. VAT is also applied to imported goods and services.
2. The standard rate is 18%.
3. Taxpayers must register for VAT with the local tax authorities.
4. VAT returns and payments are due monthly by the 20th of the following month.

Source: Deloitte Key Economies in Africa 2014/15

VAT revenue important component of Tax Revenue

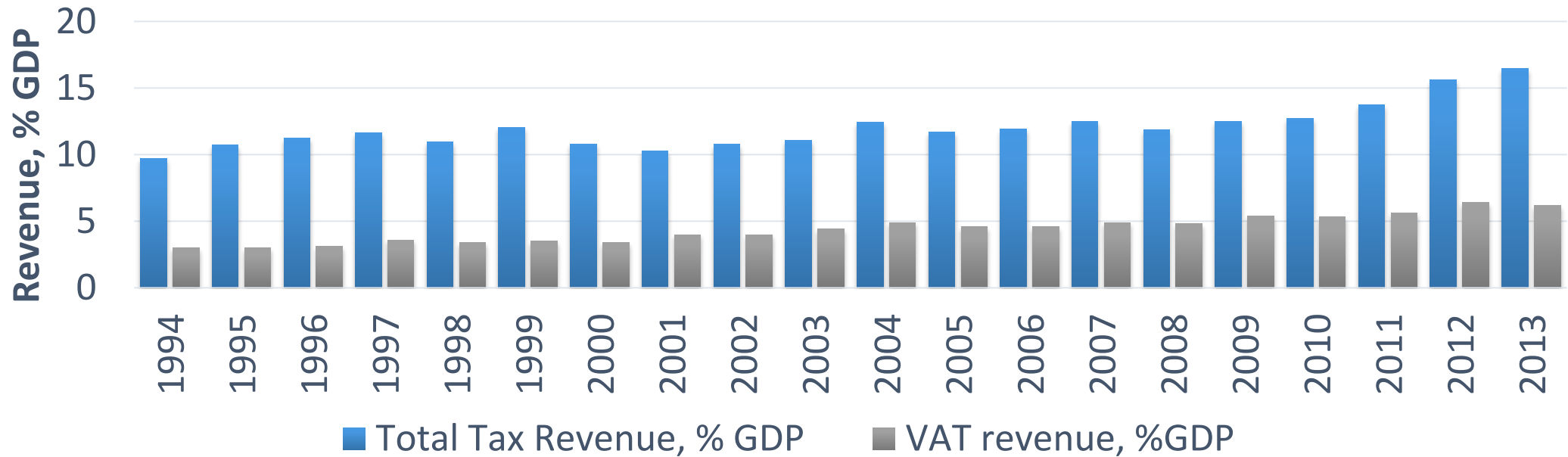
Average Revenues from overall taxes and VAT in Benin & other WAEMU member states (% GDP, 1990-2013)



Burkina Faso: How important is VAT?

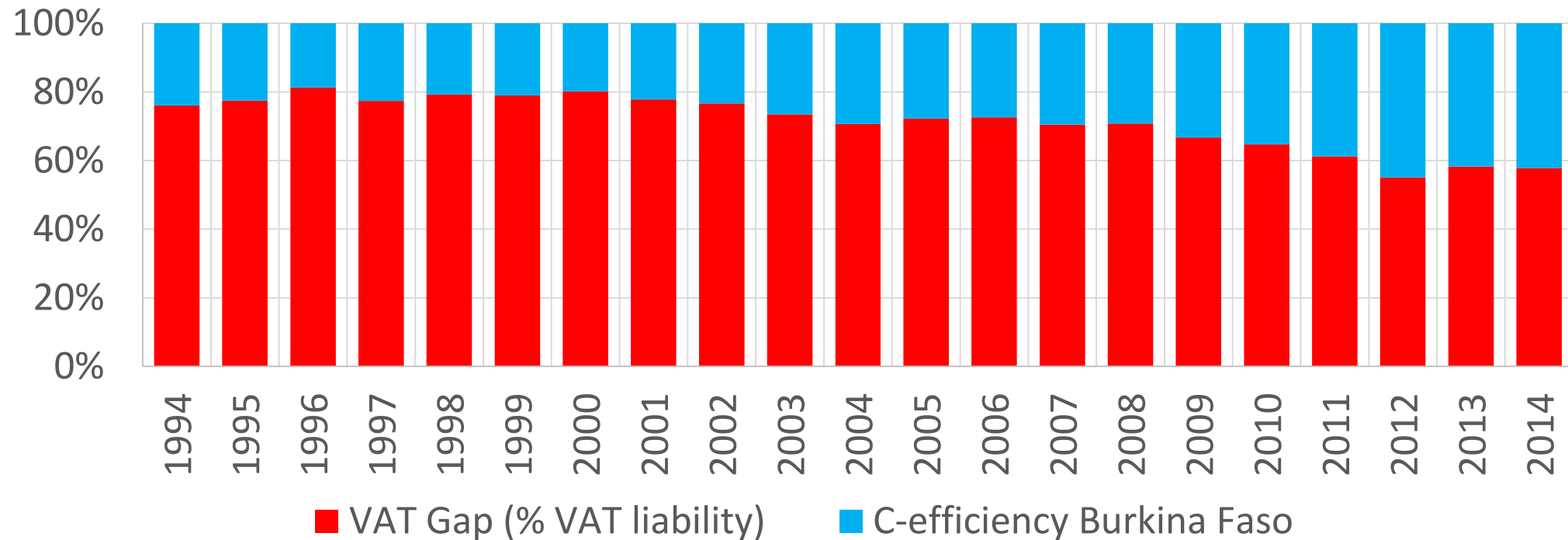
VAT accounts for over a third of overall Tax Revenue

Total Tax Revenue & VAT Revenue in Burkina Faso

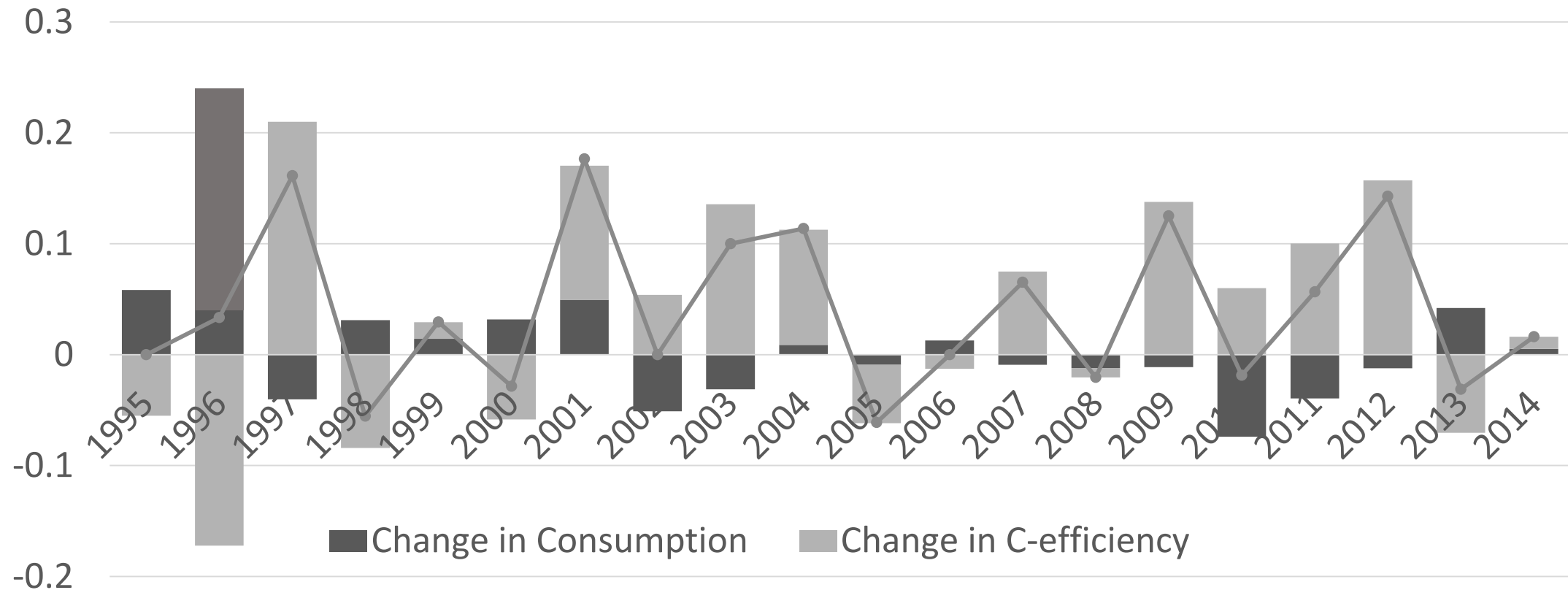


Burkina Faso: How big is the VAT gap?

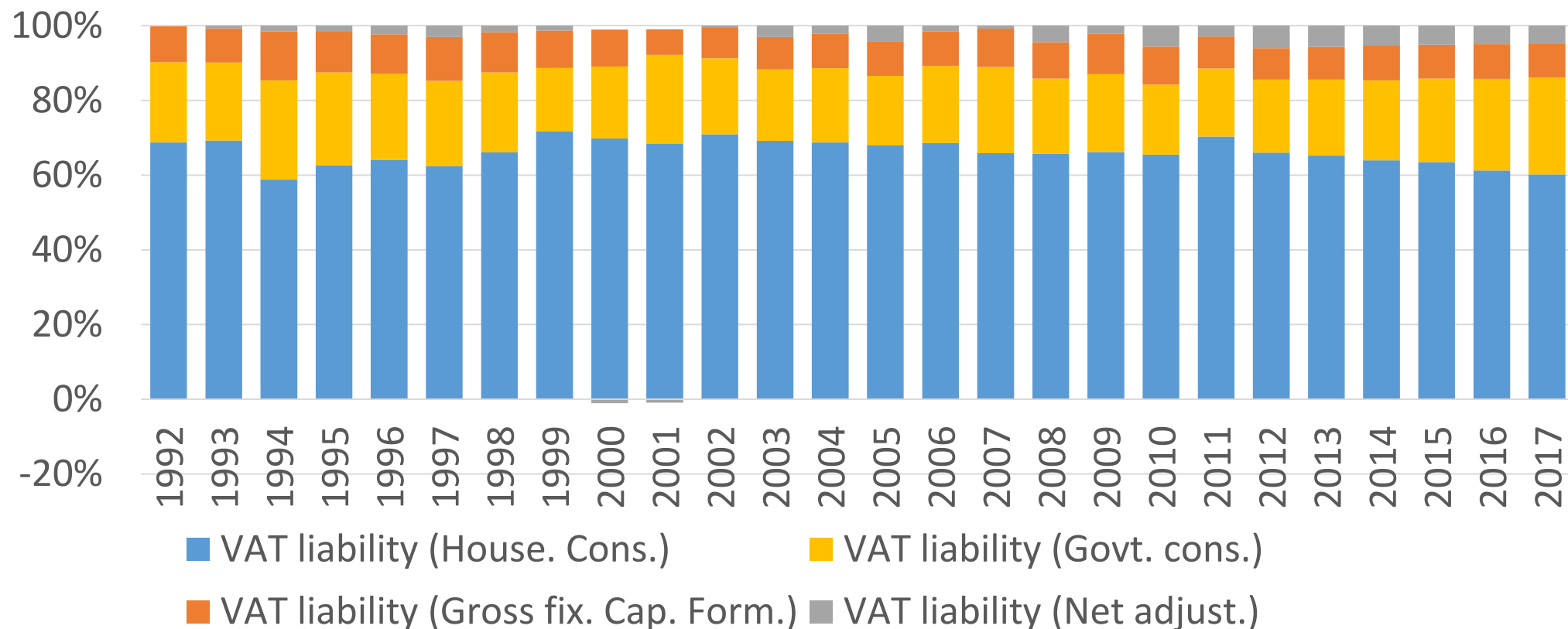
VAT gap & C-efficiency in Burkina Faso



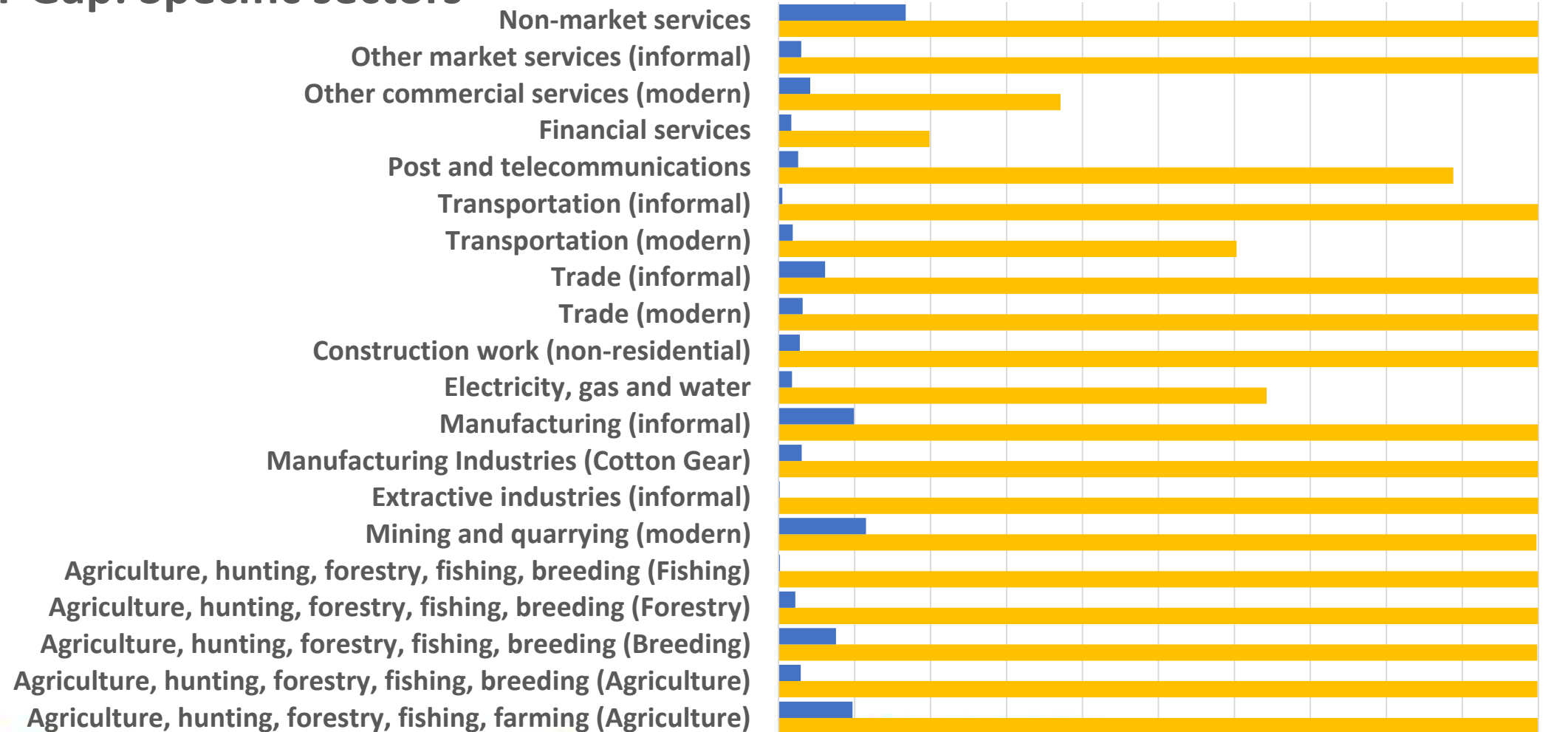
Burkina Faso: Decomposition of changes in VAT revenue



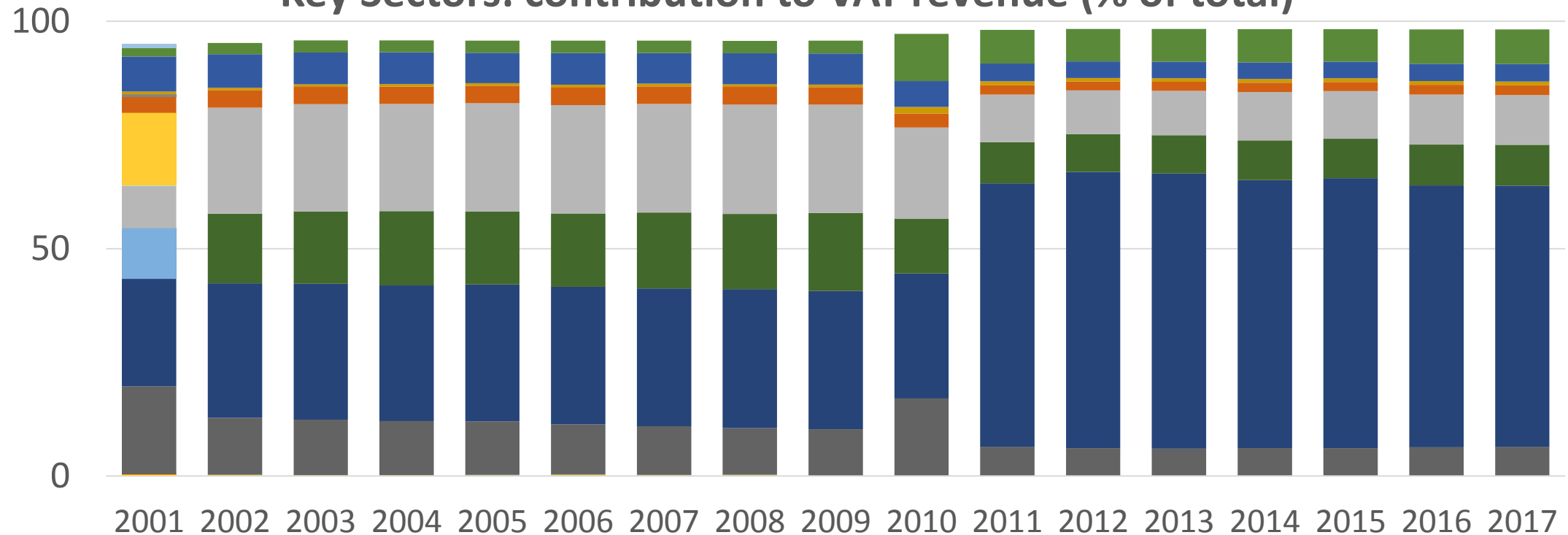
Sectoral share of VAT liability (Aggregate)



VAT Gap: Specific sectors



Key Sectors: contribution to VAT revenue (% of total)



- Trade (informal)
- Construction work (non-residential)
- Construction work (modern)
- Manufacturing Industries (Petroleum Industries)

Case Study (3): Benin

- VAT Introduced in 1992
- Standard rate is 18%

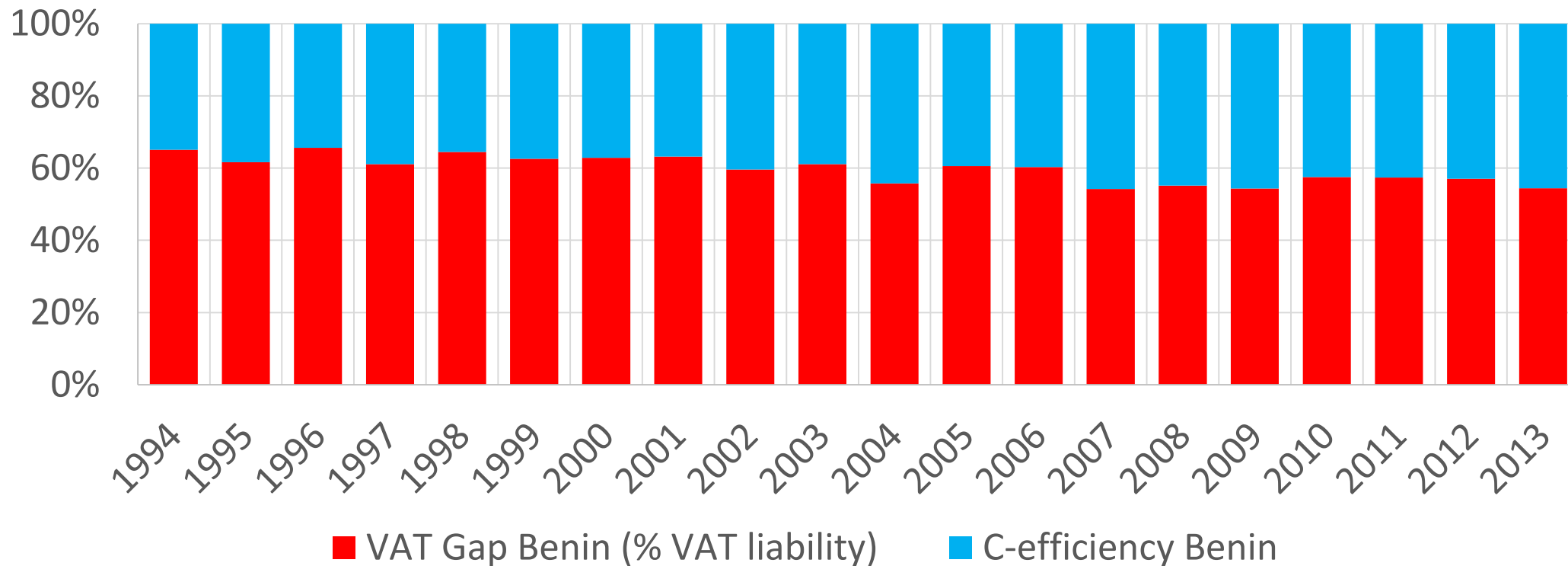
Notes:

1. Transactions carried out in Benin and imports are subject to VAT. This extends to supplies of goods and services used, or made use of, in Benin.
2. The standard VAT rate is 18%. Exempt activities include imports of certain products, banking and general insurance. Externally financed government contracts are exempt under certain conditions. Exports of goods and services are zero-rated.
3. All individuals, or legal entities that purchase goods for resale or carry on industrial, commercial, non-commercial, artisan or professional activities, are subject to VAT and must register with the tax authorities.
4. Monthly VAT returns must be submitted, along with payment due, by the 10th of the following month.
5. Other – Although exempt from VAT, small enterprises must register with the tax authorities and are liable for a single "business tax" at a rate of 6% on the rental value of their premises.

Source: Deloitte Key Economies in Africa 2014/15

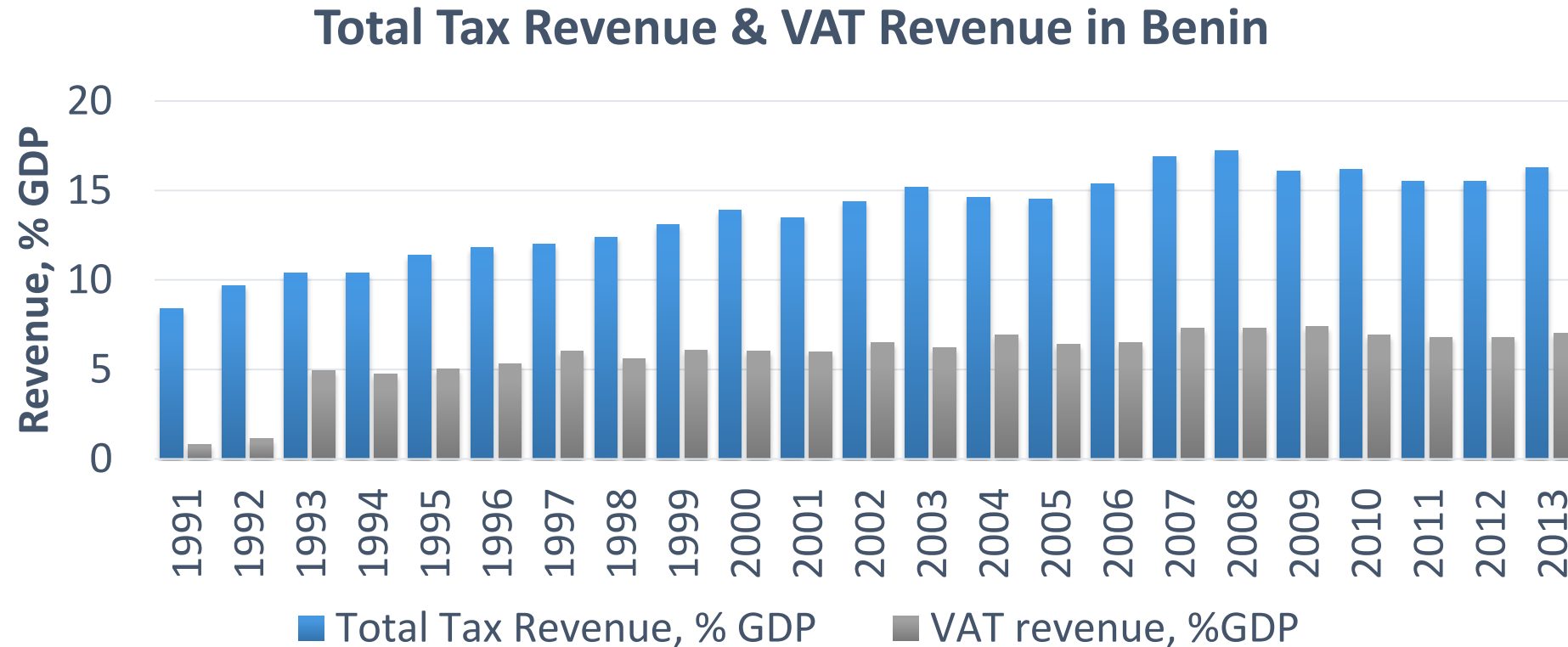
Benin: How big is the VAT gap?

VAT gap & C-efficiency in Benin

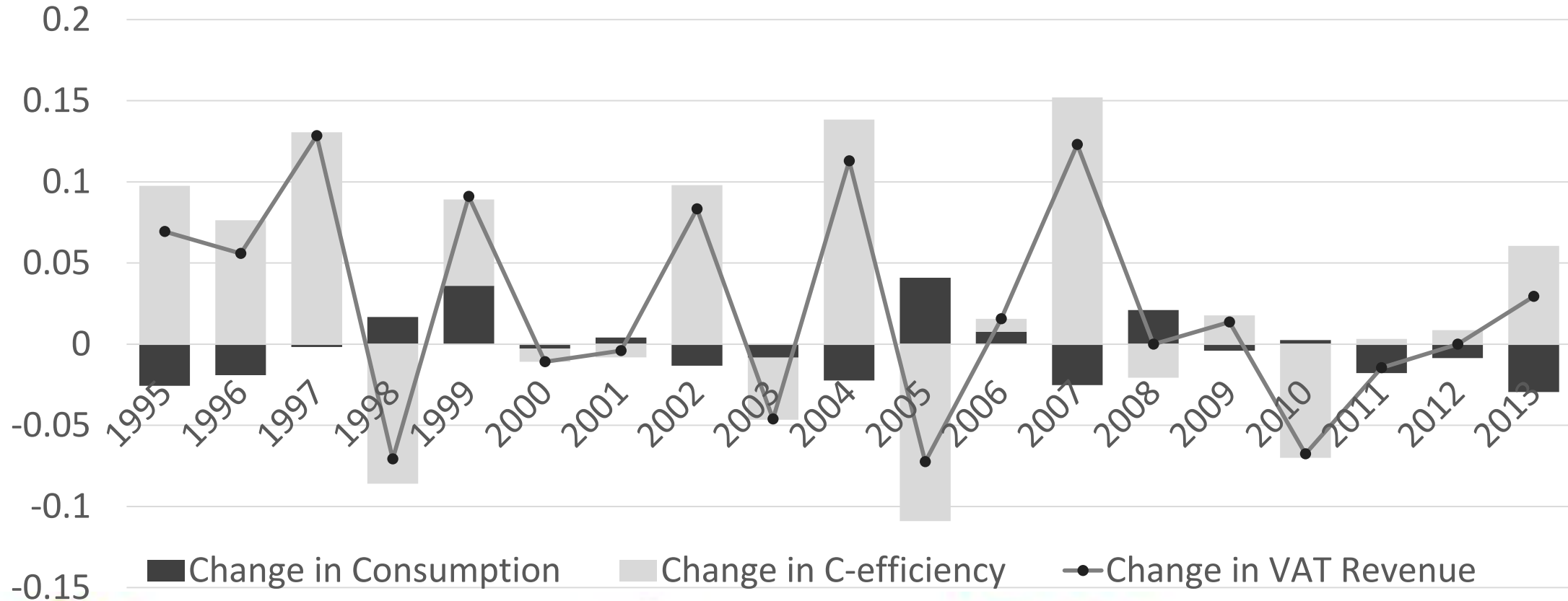


Benin: How important is VAT?

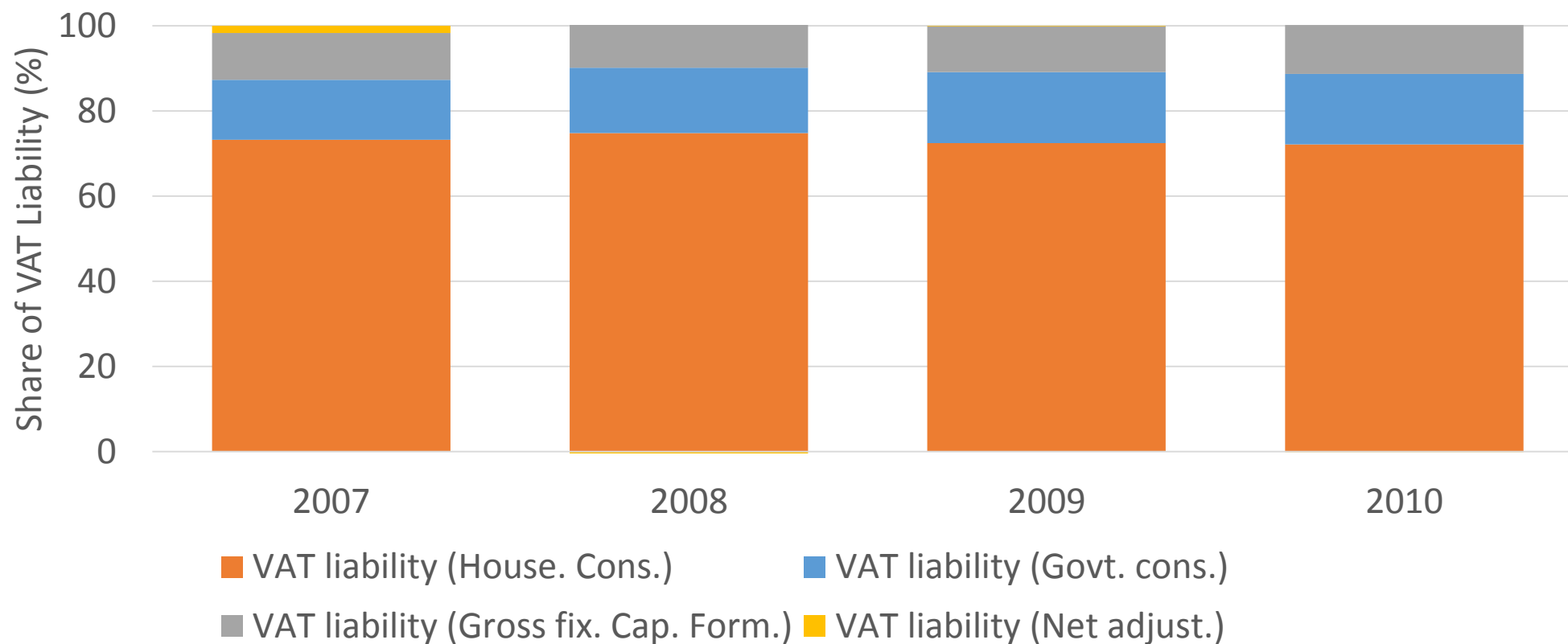
VAT accounts for over 40% of overall Tax Revenue



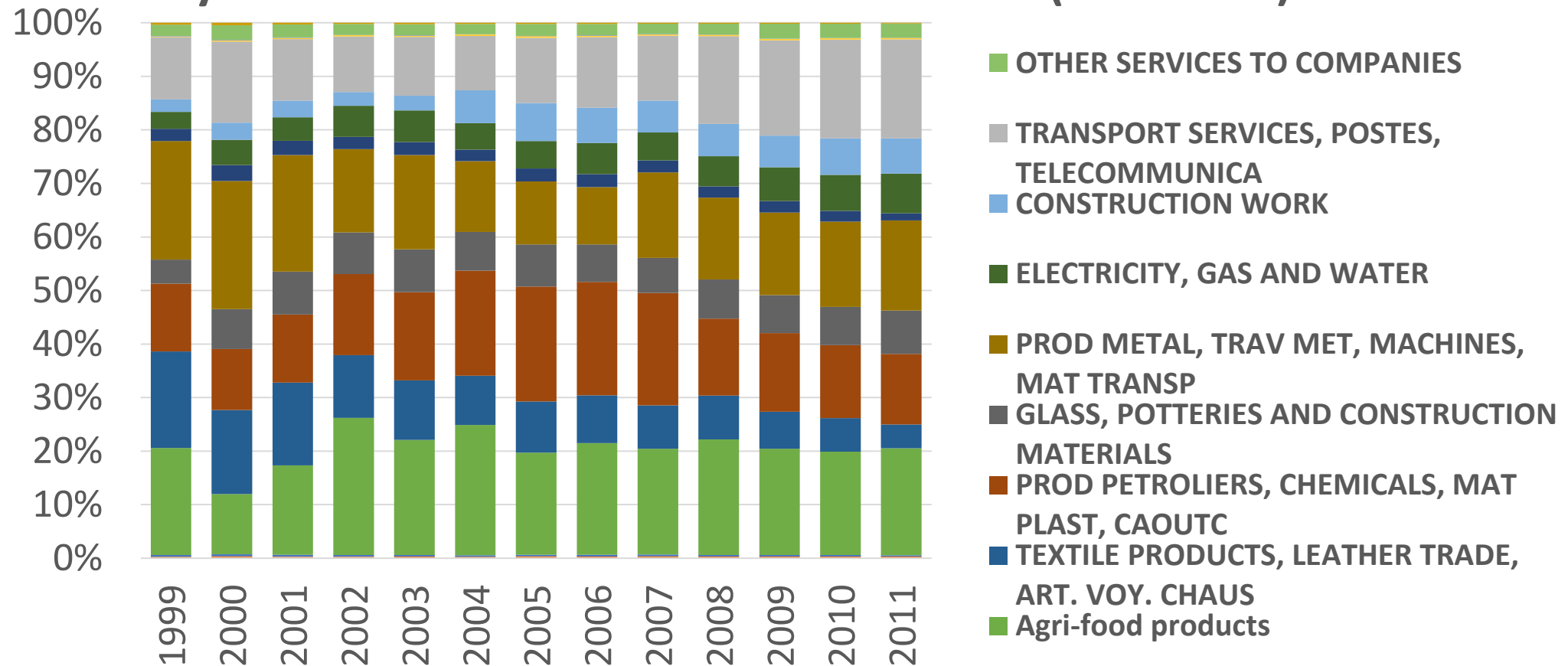
Burkina Faso: Decomposition of changes in VAT revenue



Sectoral share of VAT liability (Aggregate)



Key Sectors: contribution to VAT revenue (% of total)



Acknowledgements:

- **BeFinD** Research Team (Romain Houssa, Kelbesa Megersa, Roukiatou Nikiema, Pam Zahonogo, Mattéo Godin and Karel Verbekke)
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- **ACROPOLIS** Research Team
- **Customs and Revenue departments/ministries** of Bolivia, Burkina Faso & Benin
- **IMF** and its Fiscal Department (Phillipe Wingender, Eric Hutton, Christopher Towe, Xiangming Li)

Conclusion

- Developing countries have almost universally adopted VAT (developed countries started first)
- Countries were able to raise more tax revenue than the periods before they introduced VAT ('VAT is a money machine' !)
- Comparatively, developed countries (countries with better institutions) seem to have benefited more from VAT adoption
- Not only the adoption of VAT but also its efficiency, i.e. lowering 'VAT gap', matters (positive evidence from Bolivia)!
- At the ground level...work on the following could help!
 - Individual Citizens' understanding of tax payment responsibility/Civic duty
 - Due punishment for tax evasion
 - Working on Institutional reforms (transparency, accountability, fighting corruption, etc.)

Conclusion

- Rise in efficiency of tax collection has been the prime driver of increases in VAT revenue in Bolivia, Burkina Faso, Benin
- However, also possible to raise revenue by boosting economic growth/rising consumption levels (universal development objective)
- To boost VAT and other tax revenues, DGD could help via capacity building in its partner countries:
 - ✓ conduct more (and in depth) studies to **identify tax gaps**
 - ✓ Identify key sectors where the biggest gaps prevail (i.e. potential collectible revenue leakages) occur
 - ✓ Assist in gathering necessary tax data (this enables the estimation of tax liabilities and gaps)

Thank you!