



# Mobile Money, the Macroeconomy and Tax

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**Dr Philip Mader**

*DIGITAX Programme Lead*

*International Centre for Tax and Development  
& Research Fellow, IDS*

PARTNERS

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The **DIGITAX Research Programme** aims to inform and guide governments and key stakeholders at the interface of:



**Digital Financial Services**



**Digital IDs**



**Tax**

DIGITAX convenes discussions and produces cutting-edge research. Its focus is on the taxation of mobile money and other digital financial services, and the digitalisation of tax systems. DIGITAX works across lower-income countries, with a particular focus on Africa.

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## Questions:

1. What is the impact of digital financial services adoption on economic growth?
2. What is the impact of DFS penetration and adoption on tax compliance and tax efficiency?



# 1. The impact of digital financial services adoption on economic growth



# DFS & the macroeconomy

**In theory:** DFS could enhance macroeconomic growth through:

1. **deepening** capital markets, better **financial intermediation**;
2. more effective macroeconomic **policy transmission**;
3. **macro-prudential effects** from more efficient capital & risk allocation (but also risk of financial **instability**).

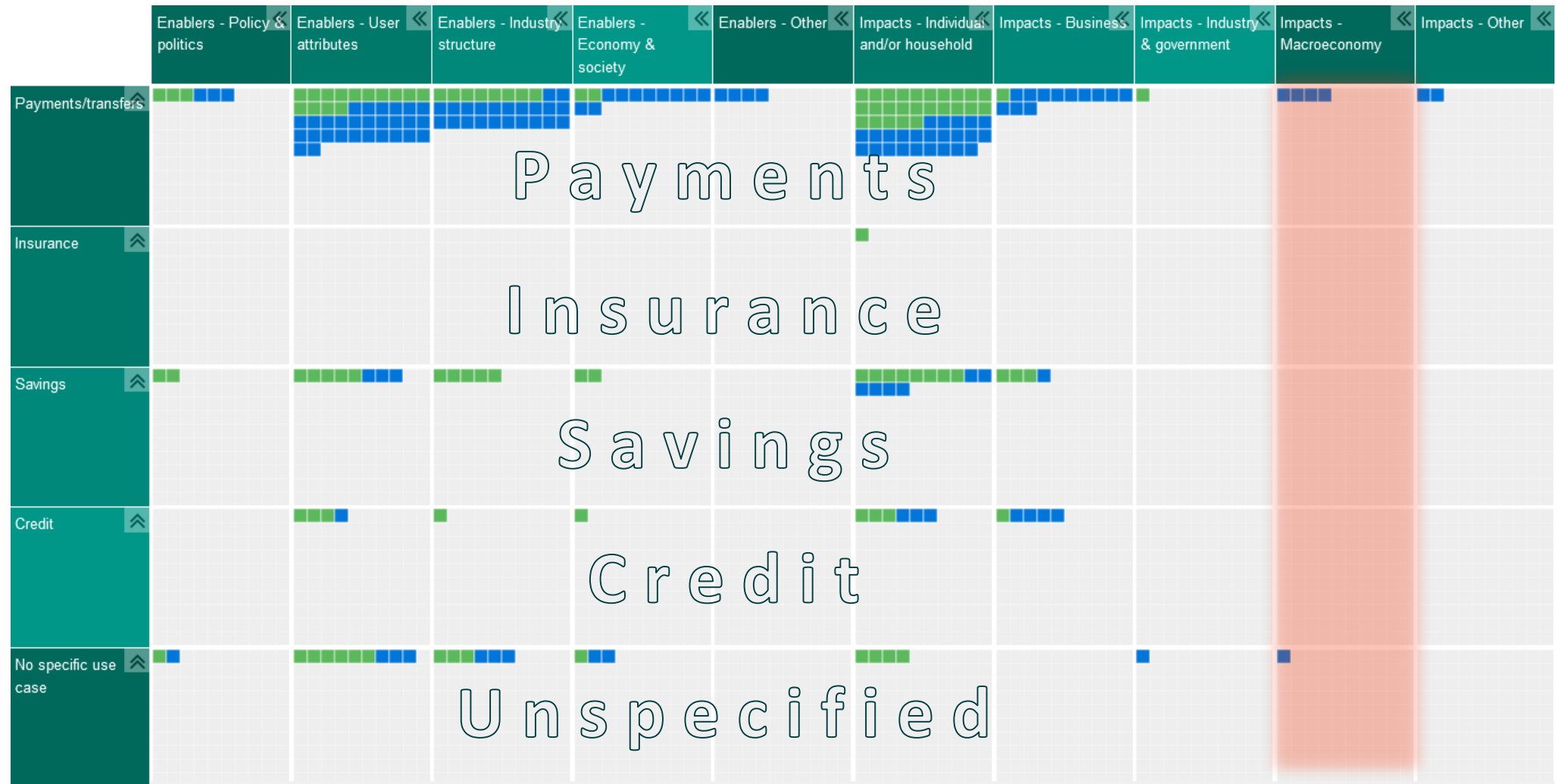
## Synthesis of existing evidence:

- Caveats: limited & not high-confidence evidence; limited geographic coverage; correlation  $\neq$  causation.
- Some studies show DFS linked to **economic output growth**
- Some studies suggest greater **economic stability** through risk-sharing (e.g. remittances in crises)
- Studies suggest **higher inflation** (MM  $\rightarrow$  velocity of money) but also **lower interest rates**

*Synthesis based on: Mader et al. (2022). Enablers, Barriers and Impacts of Digital Financial Services: Insights from an Evidence Gap Map and Implications for Taxation. ICTD WP 142. ([bit.ly/3Uozznf](https://bit.ly/3Uozznf))*

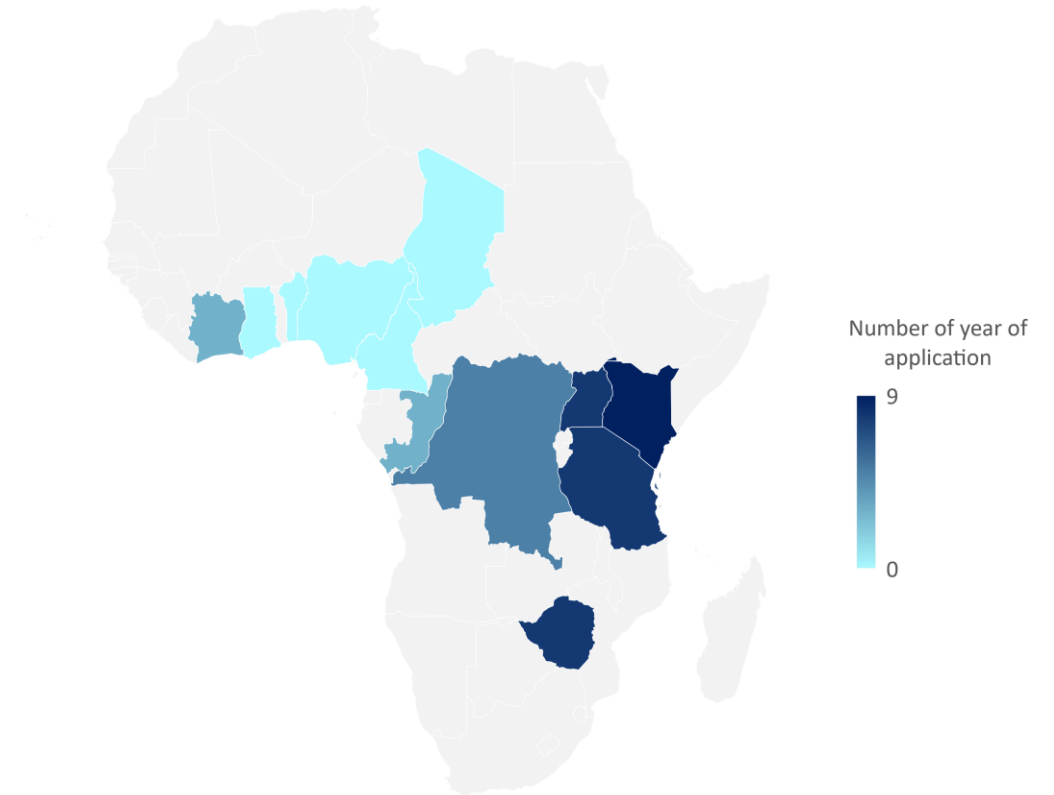


Interactive map: [bit.ly/3Uozznf](https://bit.ly/3Uozznf)



# How are MM transactions taxed?

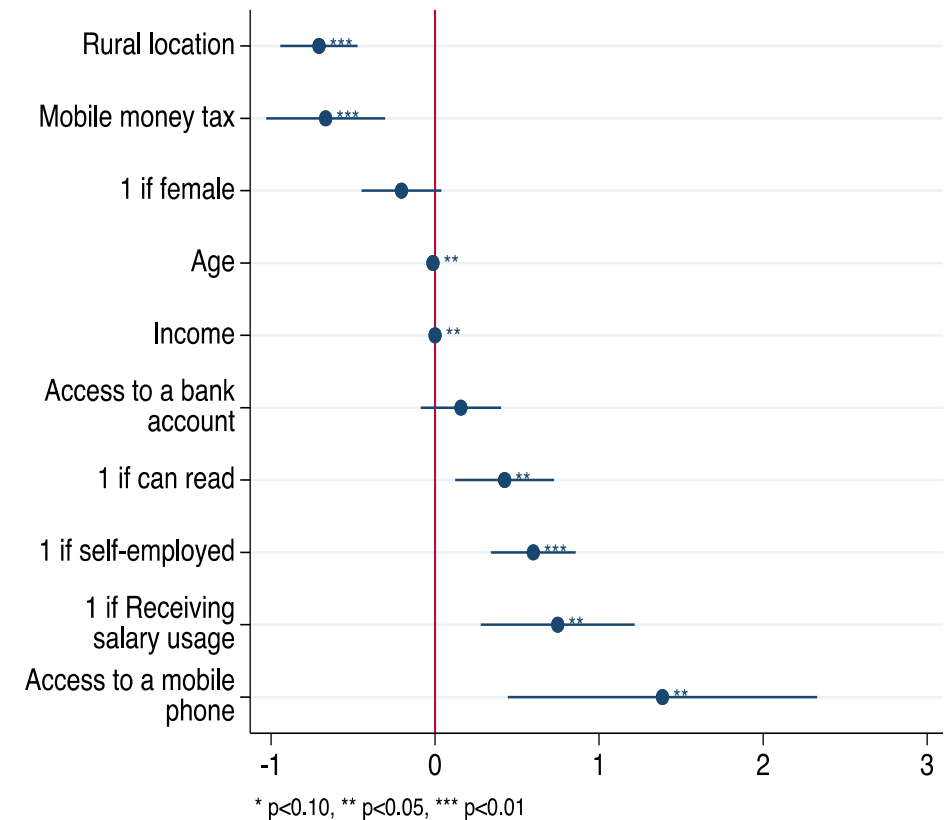
- To our knowledge, 12 SSA countries are currently applying a DFS-specific tax.
- Countries apply: a specific tax on DFS services fees (usually called excise duties); or tax on transaction values; or specific taxes on MMOs' turnover.
- Rates, which transactions are affected, exemptions, etc., vary.



# Exploratory analysis of correlates of MM taxes

	No MM tax	MM tax	Mean Difference	
Expensive (1 if think MM is expensive)	0.0843	0.2061	-0.1218***	MM tax = users find MM <b>more expensive</b>
Mobile money usage (1 if yes)	0.4711	0.8248	-0.3538***	
Mobile money usage duration	51.5044	46.4945	5.0099	MM tax correlates positively with <b>account ownership...</b>
Daily usage (1 if yes)	0.0451	0.0320	0.0131**	
Weekly usage (1 if yes)	0.2437	0.2157	0.0280**	... but also with <b>less frequent MM usage</b>
Monthly usage (1 if yes)	0.4172	0.3739	0.0432***	
Rarely use (1 if yes)	0.2941	0.3785	-0.0844***	
Average amount sent	5163.0417	23652.7980	-1.849e+04***	MM tax correlates with <b>higher average transfer amounts</b>
Average amount received	11773.5174	28872.1544	-1.710e+04***	
Money storage duration	54.6565	461.3709	-406.7144**	MM tax <b>doesn't appear to discourage savings</b>
Usual amount of money stored	4775.9278	21934.4998	-1.716e+04***	

Correlates of "frequent" (daily or weekly) usage



Mean comparison test on MM usage variables between taxing and non-taxing countries.

Countries in the sample: Kenya, Mozambique, Ghana, Rwanda, South Africa, Tanzania, Uganda, Senegal. Survey year: 2017/2018. Taxing countries: Kenya, Uganda, Tanzania. Obs.=849~4458.





## 2. The impact of DFS on tax administrations and compliance



# Digital financial services as a channel for tax payments

**In theory:** DFS can enhance tax compliance **by reducing compliance costs** (time, monetary costs, accounting costs) and **opportunities for corrupt behaviour**.

## Findings in practice:

- The e-payment option **enhances tax compliance** (if paired with e-filing), but has **negligible-to-modest effects on tax revenue**.
- **Constraints to adoption** of e-services (e-filing, e-payment) identified: social (education and age; IT readiness; lack of awareness) & technical (lack of connectivity, initial cost of adoption for the user)
- **Training and technical assistance can increase compliance**
- User **behavioural responses** can undermine effects. When e-filing, taxpayers often increase their reported expenses and deductions. E.g. adoption of electronic sales registration machines:  
*“We find a positive impact on tax revenue, which increases by at least 12% for income taxes and 48% for VAT. However, **taxpayers respond by simultaneously adjusting both reported sales and costs**, thus yielding net revenue gains that are proportionally lower than the increase in sales.” (Mascagni et al. 2021)”*
- Some for evidence for **reduced opportunities for corruption** (e.g. bribes in Tajikistan)



# Digital financial services as third-party data providers


**In theory:** DFS allow for **tracing transactions** through the trail of mobile money or other digital payments data. These could enable **identification of the tax base, cross-checks of tax declarations and payments, and data-driven audits.**

## Findings in practice:

- **Data-sharing agreements** are often not in place; data privacy restrictions.
- **Internal capacity to make good use of data:** tax administrations are understaffed, under-resourced, and lack the analytical skills to analyse data.
- Even if tax administrations have the data and can analyse it, **enforcement capacity matters:** e.g. limited ability to communicate with taxpayers & credibly signal the enforcement threat.

DFS usage increases the **perceived probability of being caught evading** and it is used to **nudge taxpayers** through messages reporting DFS information – but only a minority of taxpayers respond to these signals.

*Sources: Das et al. (2022), Slemrod et al. (2017), Brockmeyer et al. (2019), Brockmeyer et al. (2022), Sung et al. (2017), Li et al. (2020), Joshi (2022)*





## Summary

### DFS and economic growth:

- Not very robust cross-country evidence. Mixed results re: capital markets deepening, macro policy transmission & macro-prudential effects.
- Taxes on DFS appear to affect usage patterns and this may have knock-on macro effects.

### DFS and tax compliance/efficiency:

- DFS as a channel for tax payments have negligible/modest revenue effects & vary depending on users' attributes and behavioural responses.
- DFS data for tax administration is constrained by TAs' analysis capacity, data sharing & enforcement strength.

Thank you!

Phil Mader: [p.mader@ids.ac.uk](mailto:p.mader@ids.ac.uk)

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# How are MM transactions taxed?

Country	Period	Tax base	Tax rate	Affected services	Exemptions
Kenya	02/2013 – Present	Fees	10% then 12%	Money transfers	-
Tanzania	07/2013 – 06/2014	Values	0.15%	Money transfers	< 30000 TZS
	07/2014 – Present	Fees	10%	Money transfers	-
	07/2021 – Present	Values	10-10000 then 10-70000 then 10-40000 then 10-20000	Mobile money Transfers and Withdrawals	Bank to Bank, Mobile to Bank, and same account transactions (2022)
Zimbabwe	01/2014 – 09/2018	Values	0.05\$	Mobile money transfers	-
	10/2018 – Present	Values	2% then; 2% for ZWD – 4% for \$ transactions	Money transfers	< 10\$; then < 20\$
Uganda	07/2013 – Present	Fees	10%	Withdrawals	-
	07/2014 – Present	Fees	10% then 15%	Money transfers and Withdrawals	-
	07/2018 – Present	Values	1% then 0.5%	Money transfers & Withdrawals	Receiving and payments (since 11/2018)
Côte d'Ivoire	01/2018 – 12/2018	Values	0.5%	Money transfers	-
	01/2019 – Present	Turnover	7.2%	Money transfers	-
DRC	02/2018 – Present	Turnover	3%	Money transfers	-
Congo	01/2019 – Present	Turnover	1%	Money transfers and electronic payments	-
Nigeria	01/2021 – Present	Values	N50	Transfers and Deposits	< N10000
Cameroon	01/2022 – Present	Values	0.2%	Money transfers and Withdrawals	Bank transfers and tax payments
Chad	01/2022 – Present	Values	0.2%	Electronic money transfers	Bank transfers and tax payments
Benin	01/2022 – Present	Turnover	5%	Electronic transfers	Bank transfers and tax payments
Ghana	05/2022 – Present	Values	1.5%	Electronic transfers	< 100 cedis per day