

Sudan Country Economic Memorandum: Realizing the Potential For Diversified Development

Public Launch

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Khartoum

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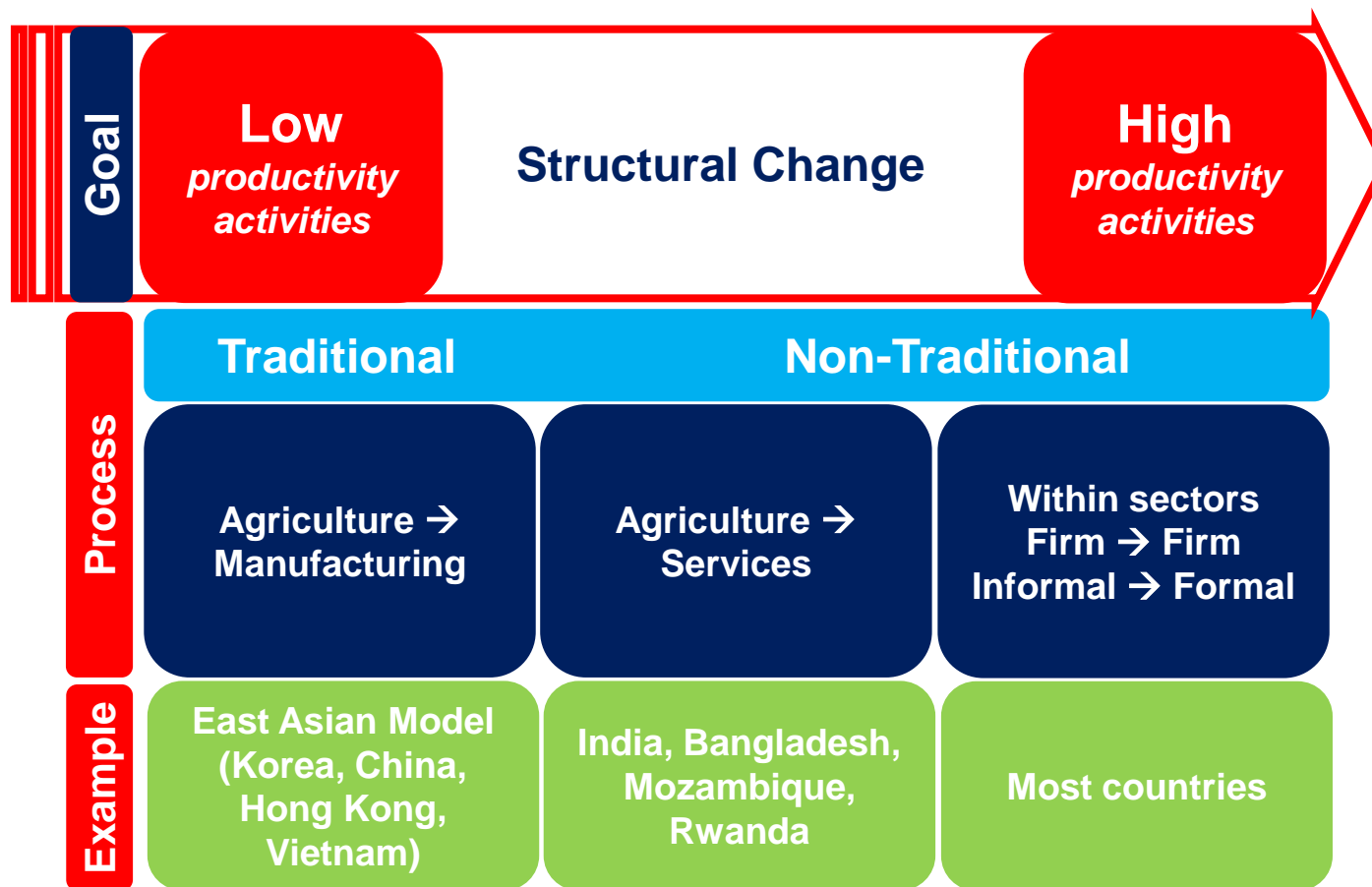


Outline

- What is structural transformation and where does Sudan stand?
- What kind of growth and diversification methodology could be applied to Sudan
- Key findings
- Key recommendations

What is structural transformation and where does Sudan stand?

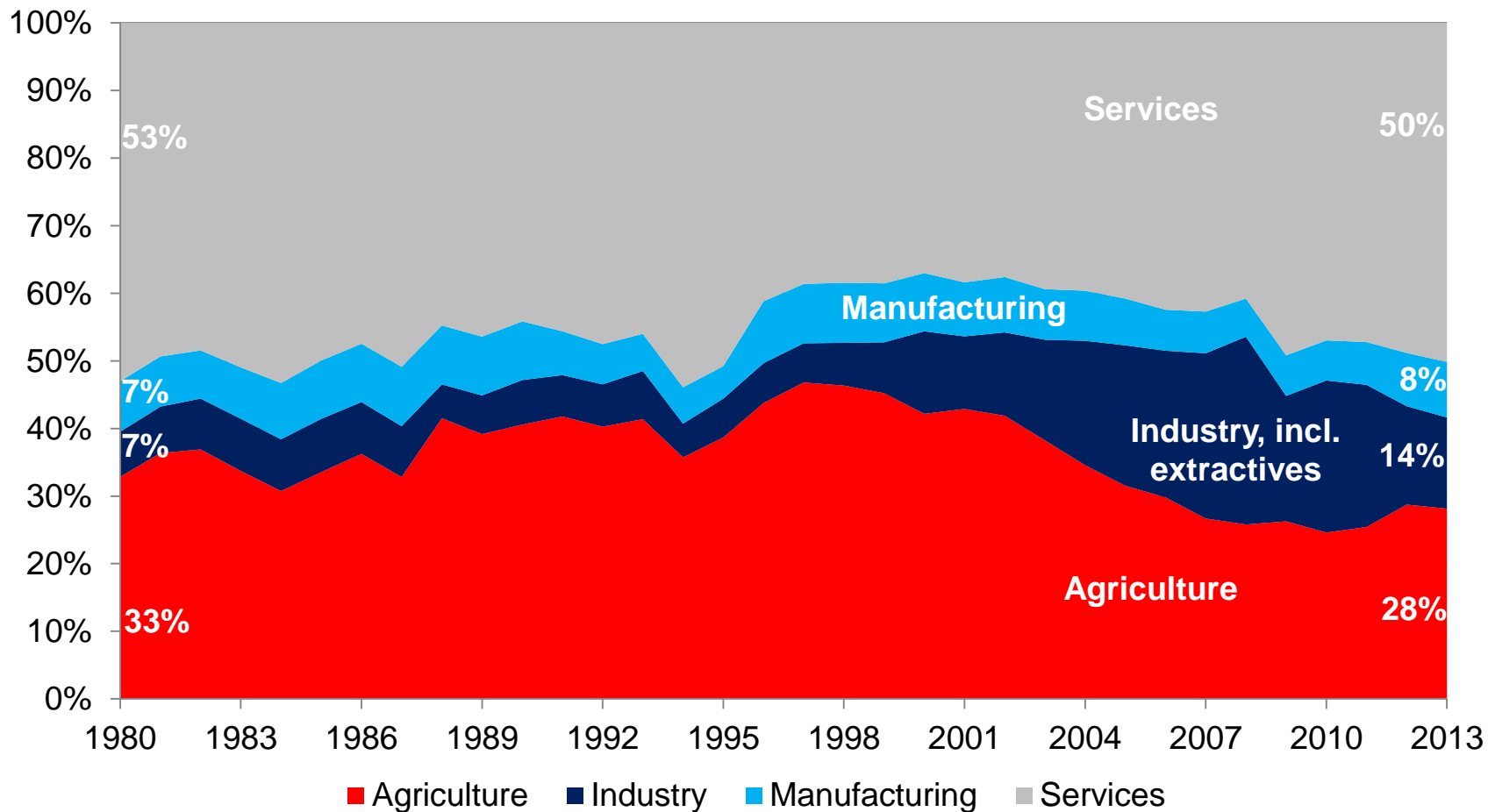
What is structural change? A shift of economic activities and employment from low to high productivity activities



Source: Own visualization, based on McMillan et al. (2014): Globalization, Structural Change, and Productivity Growth, with and Update on Africa; Page (2012) - Can Africa Industrialize?; Zeufack et al. (2015): Structural Transformation and Productivity Growth in Africa: Uganda in the 2000s; Ghani & O'Connell (2014): Can Service Be a Growth Escalator in Low Income Countries?

But Sudan still stands at the beginning of structural transformation

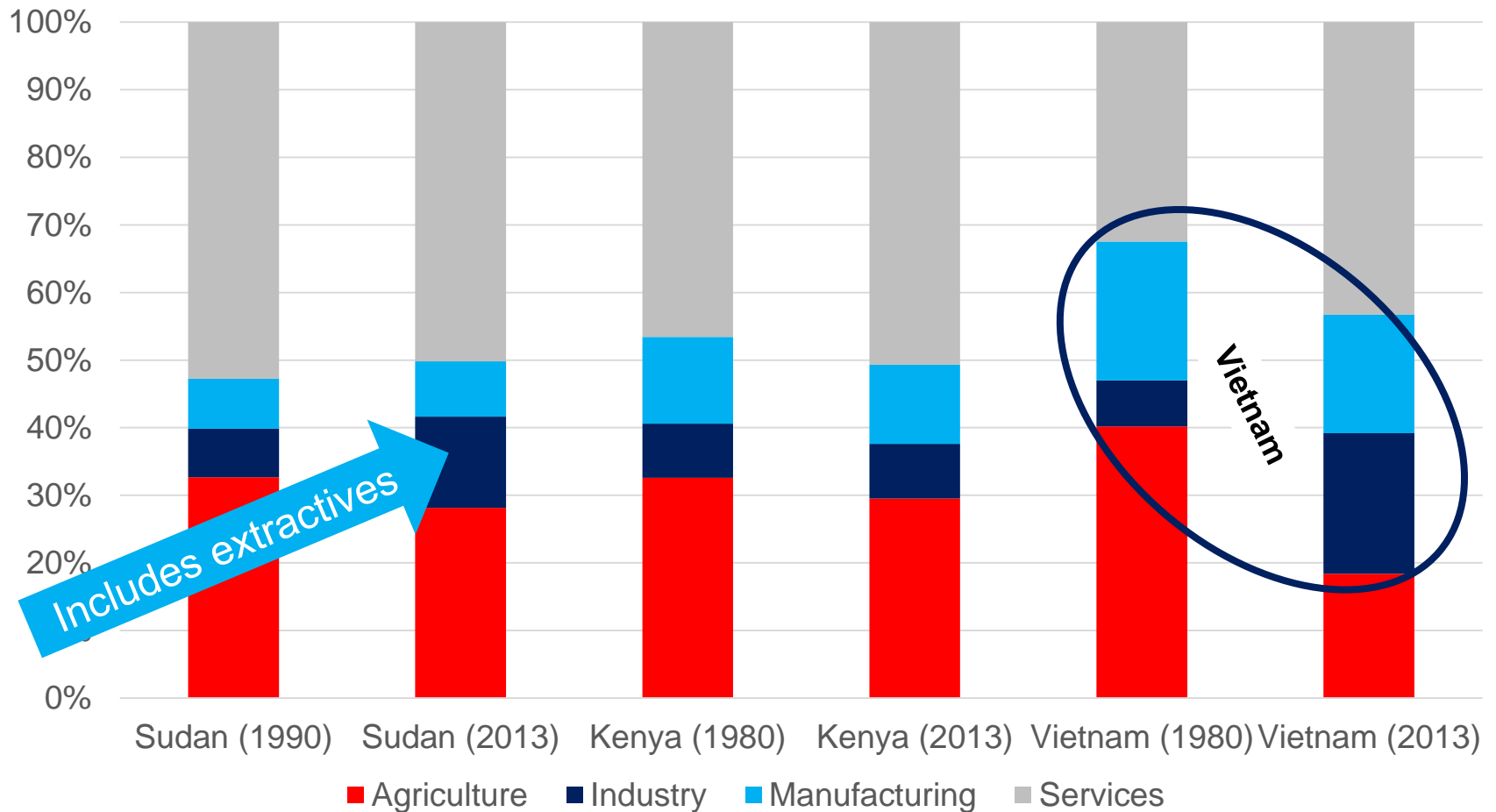
Sudan's sectoral decomposition of GDP, 1980-2013



Source: World Bank, World Development Indicators (2015).

At the same time others have advanced in structural transformation

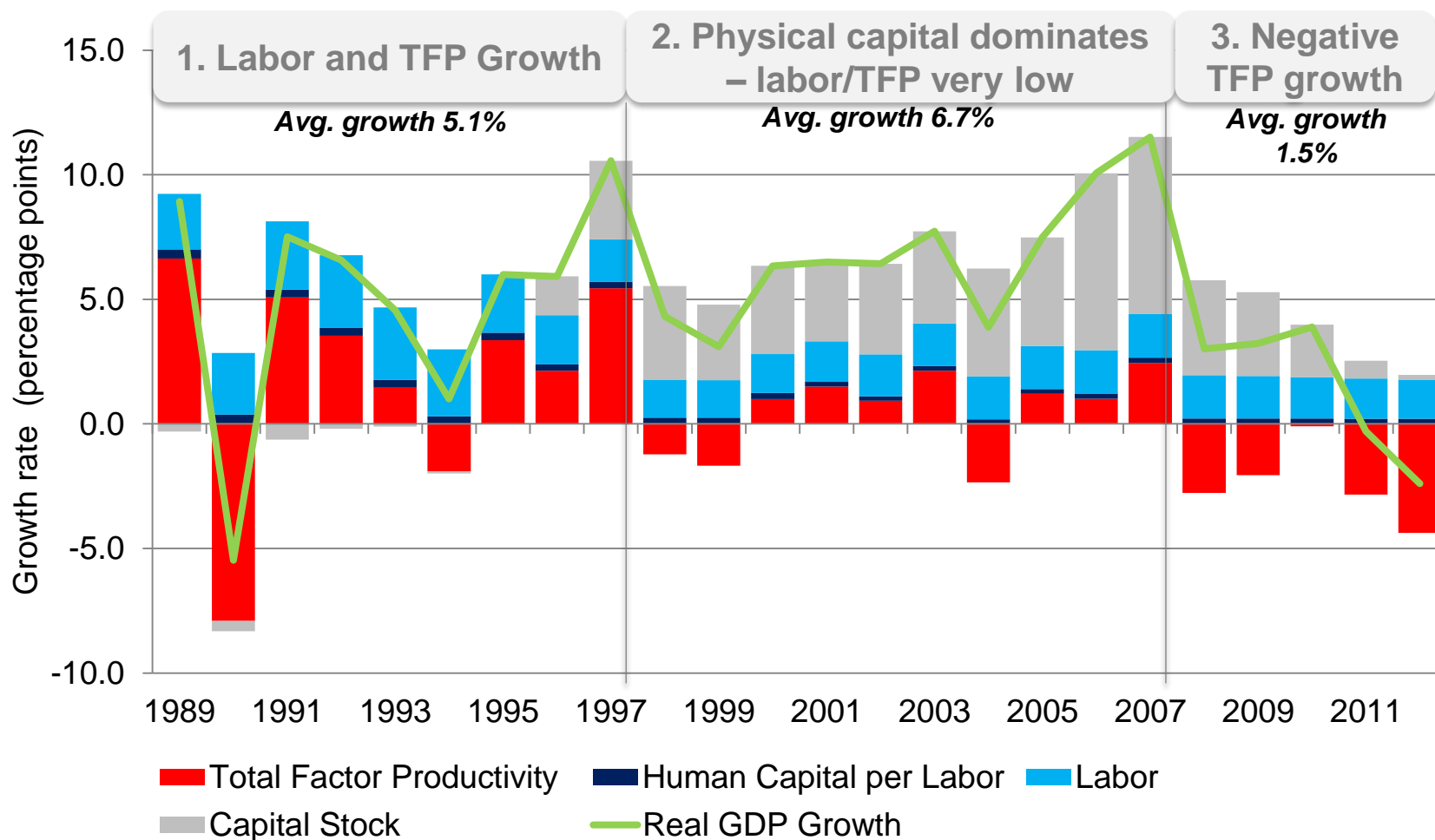
Selected countries' sectoral decomposition of GDP, 1980-2013



Source: World Bank, World Development Indicators (2015).

The long-term historical growth performance underscores the lack of lasting structural change in Sudan

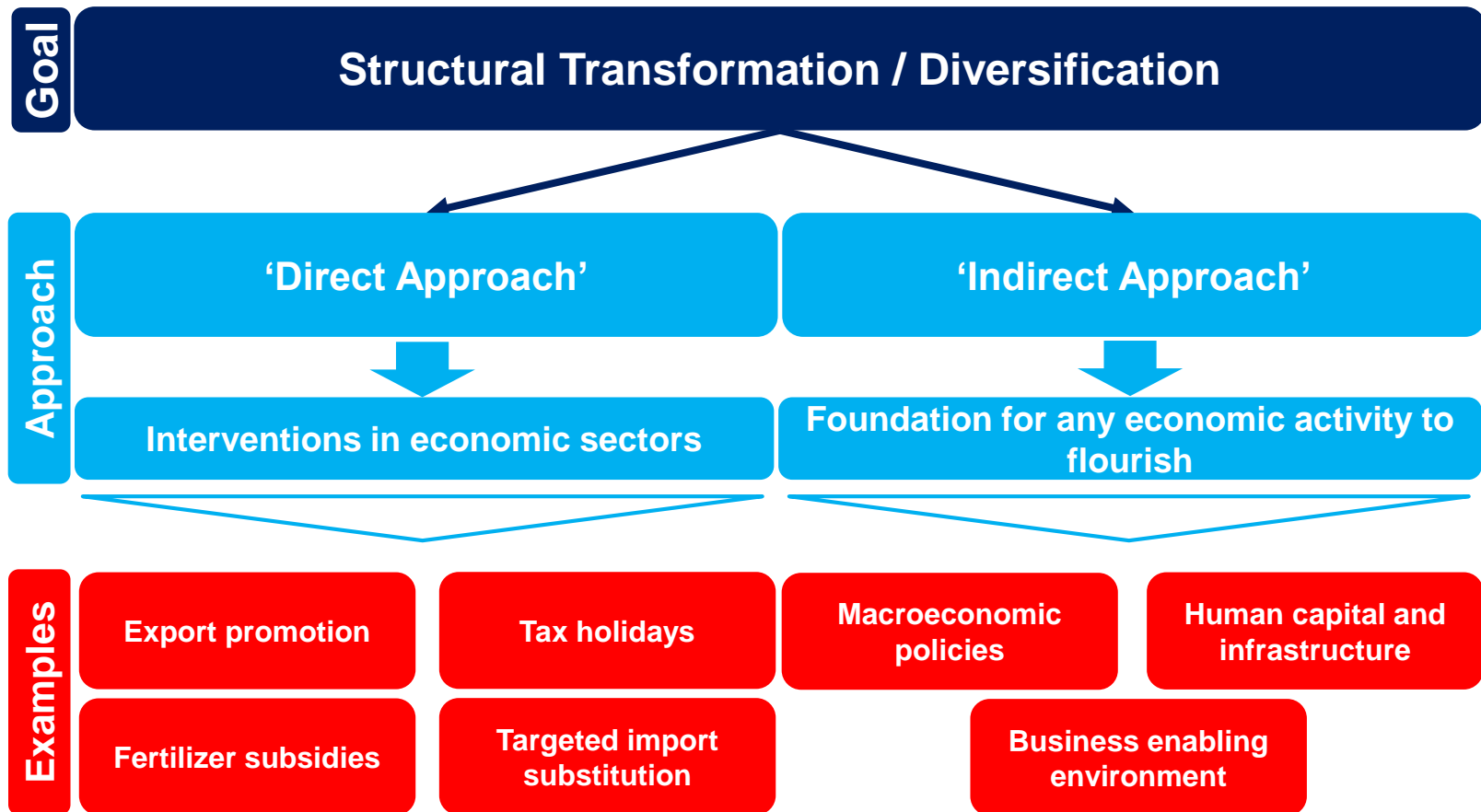
Growth decomposition of production factors in Sudan, 1989-2012



Source: World Bank, World Development Indicators (2014). Note: TFP is a measure of total output growth relative to the growth in traditionally measured inputs of labor and capital (in other words: Output = TFP + Capital input + Labor input).

What kind of growth and diversification methodology could be applied to Sudan?

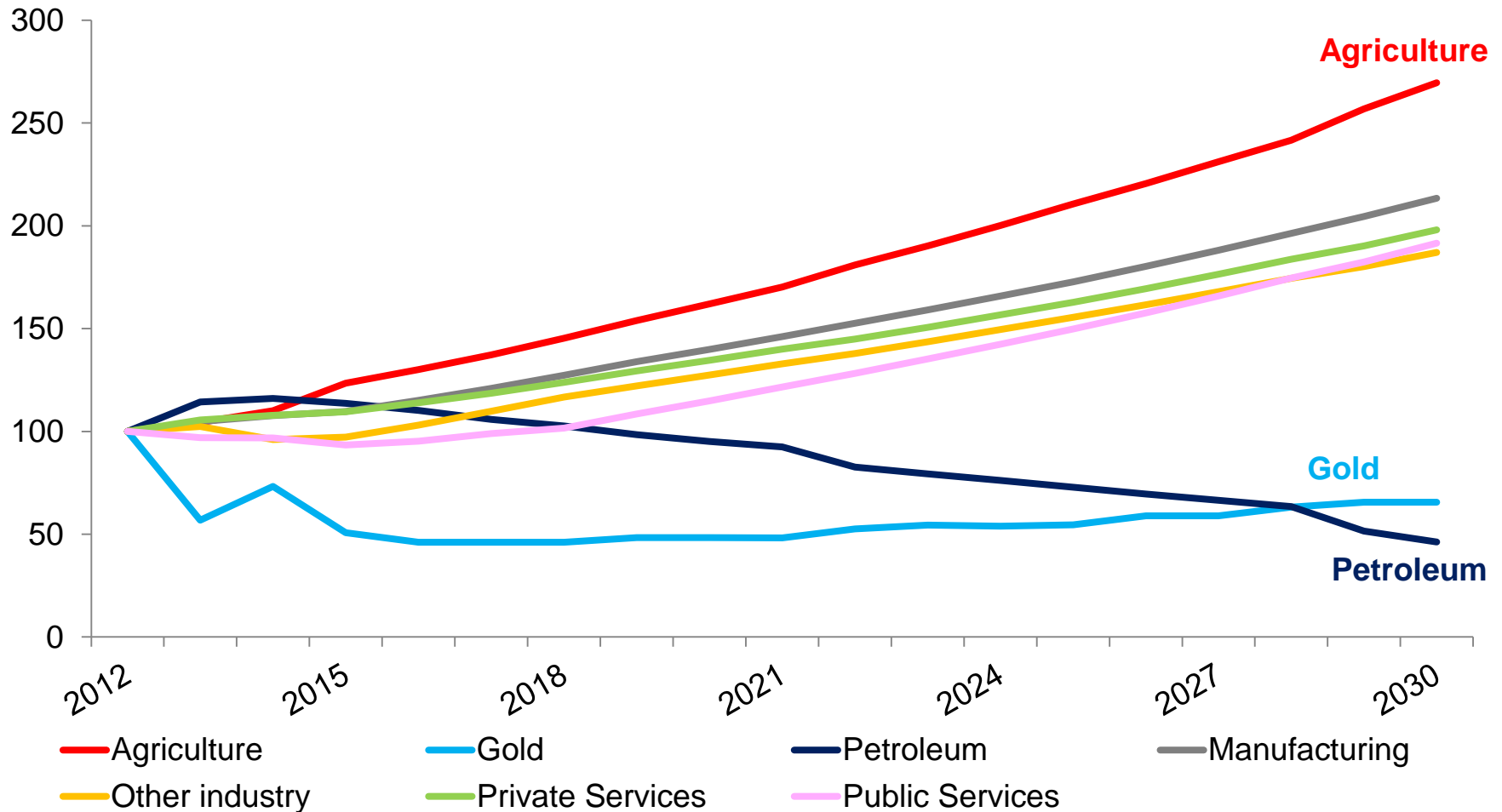
There are two approaches to diversify an economy: direct and indirect



Source: Own visualization, based on World Bank (2014): Diversified Development.

Agriculture will be the key sector in the economy until 2030 and any diversification effort needs to recognize the sector

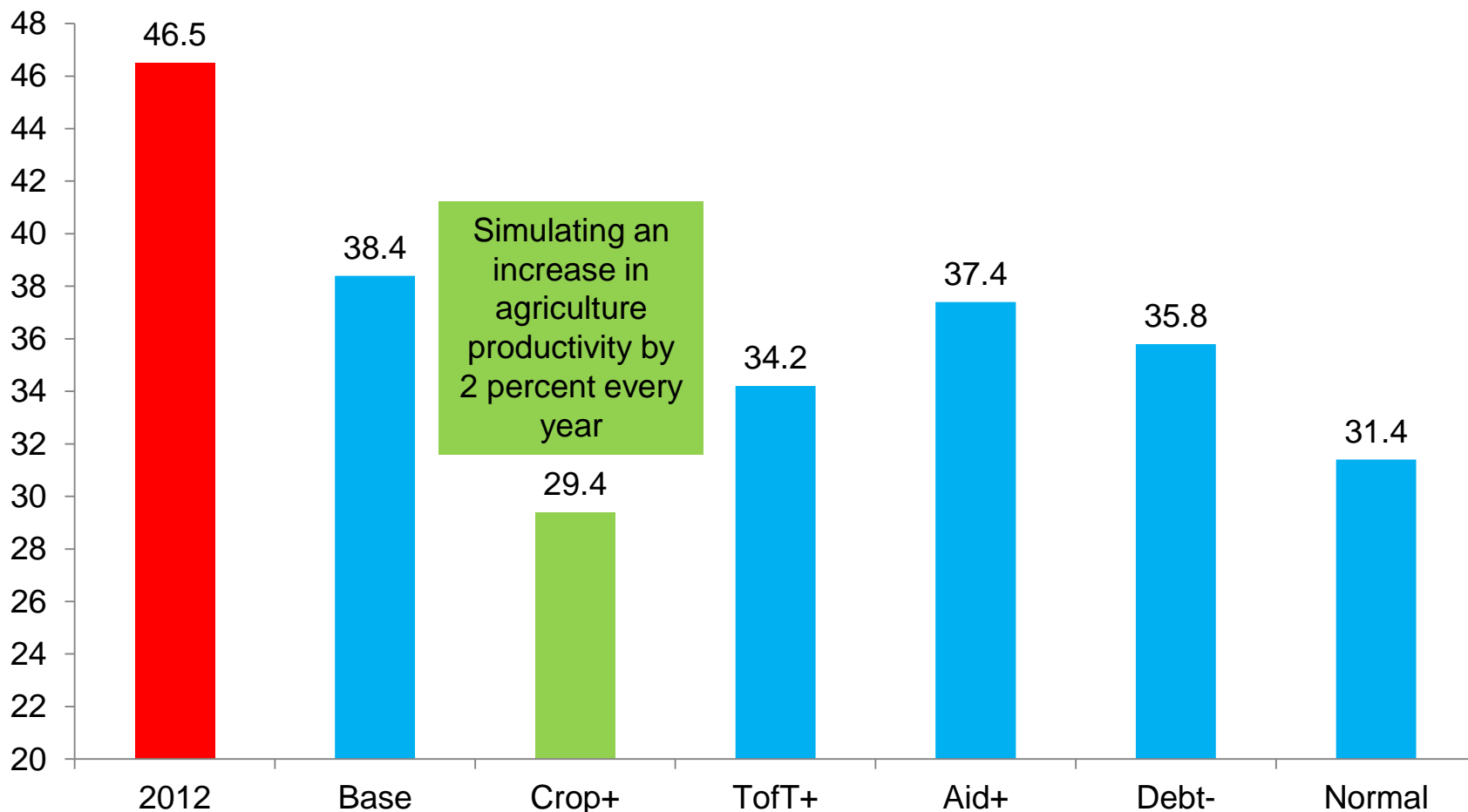
CEM Simulation: Aggregated sector GDP (Index; 2012=100)



Source: World Bank staff own calculations using the MAMS Sudan Model.

Development of the agriculture sector is also particularly poverty reducing

CEM Simulation: Poverty Rate in 2012 and Various Scenarios



Source: World Bank staff own calculations using the MAMS Sudan Model.

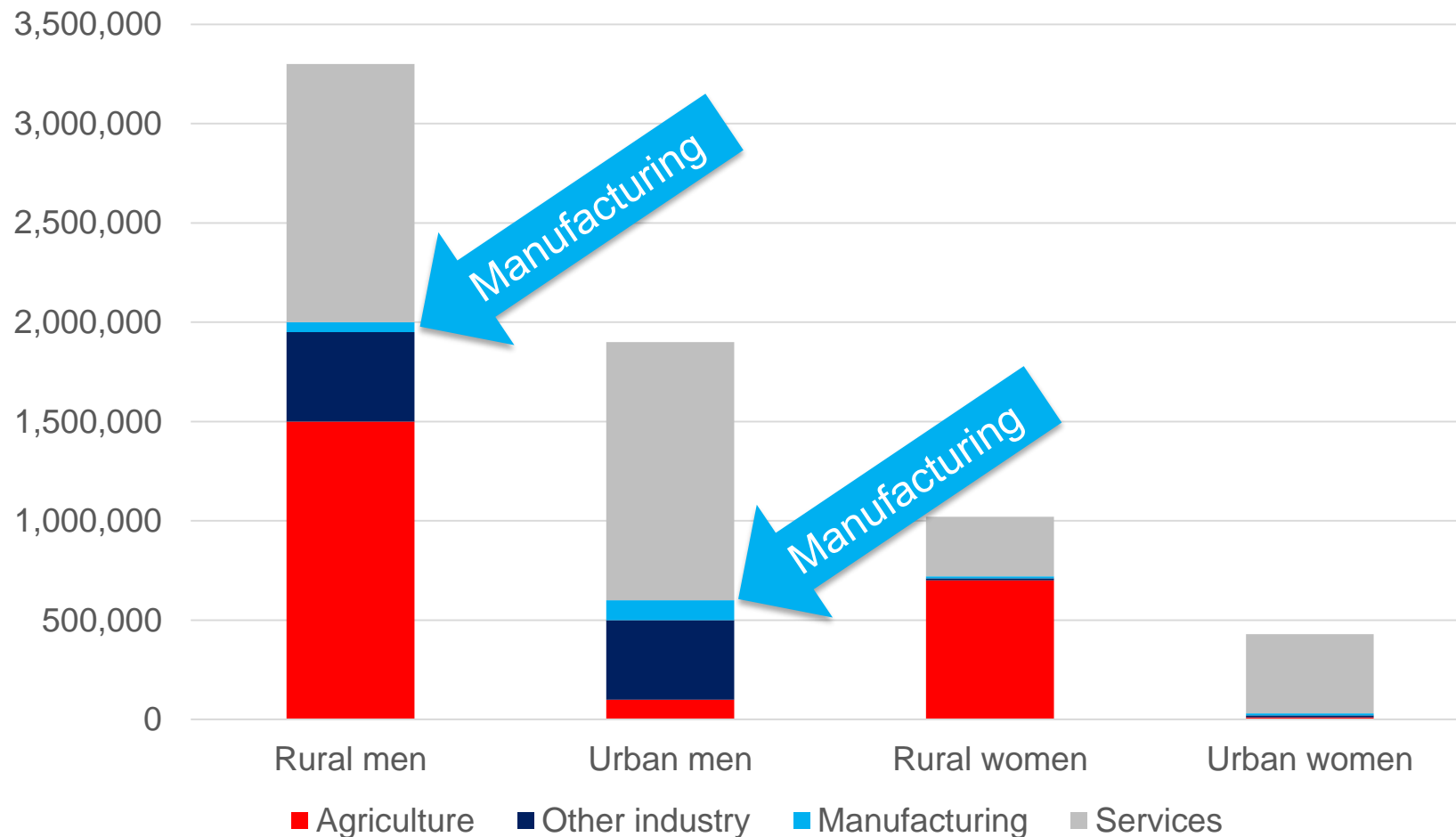
Notes: TofT+ simulates increased terms of trade; Aid+ simulates additional inflows of aid; Debt- simulates debt relief; Normal simulates the combined effects of normalization of relations with the rest of the world.

Key Findings

**Key finding 1:
No lasting structural change**

Manufacturing provides an almost negligible number of jobs in Sudan

Employment by sector, 2009

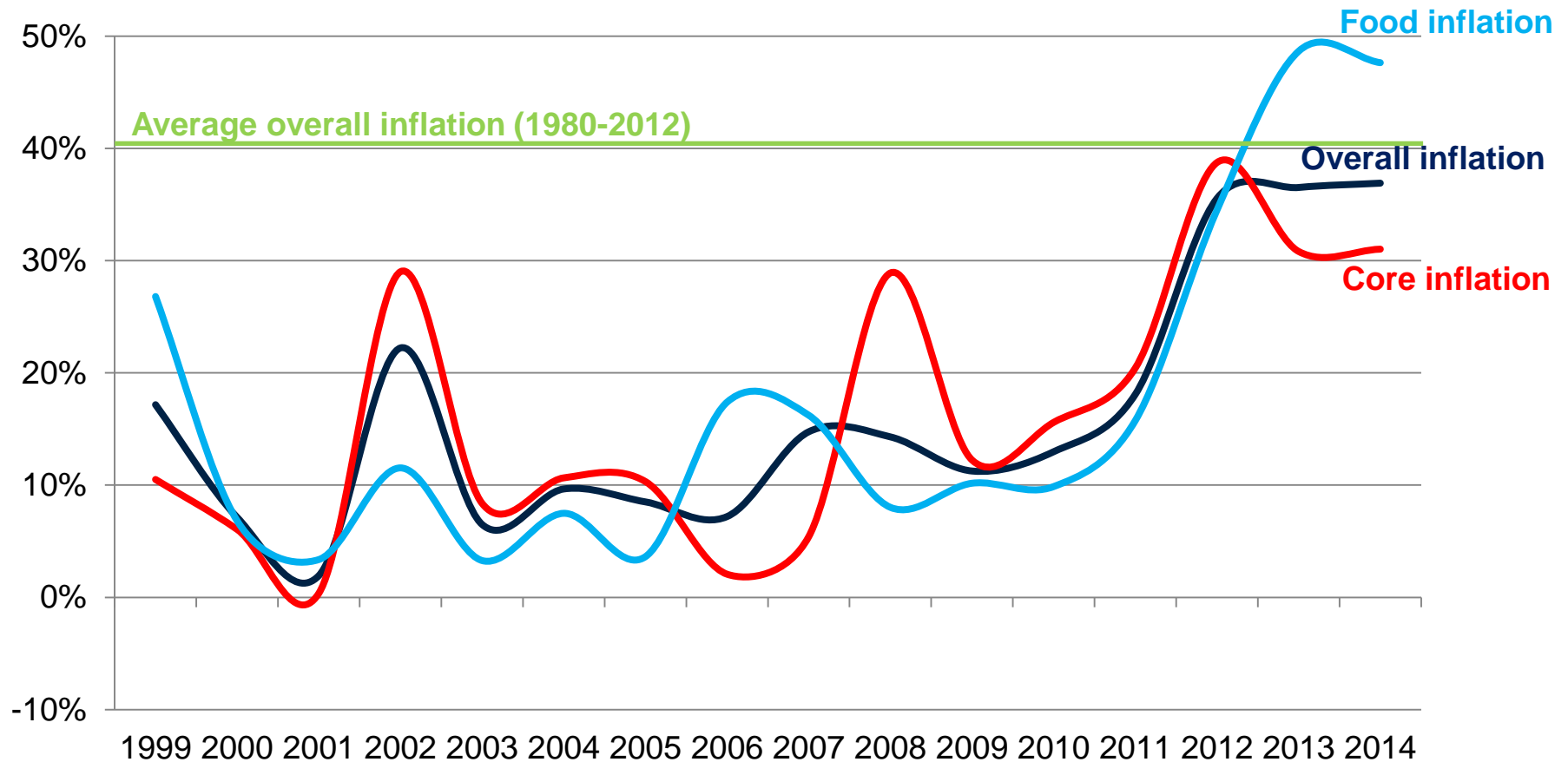


Source: World Bank staff own calculations, based on data from National Benchmark Household Survey (2009).

**Key finding 2:
High and volatile inflation, linked to
budget financing**

Sudan has a history of high, volatile inflation, which further increased after 2011

Average annual inflation in Sudan, 1999-2014

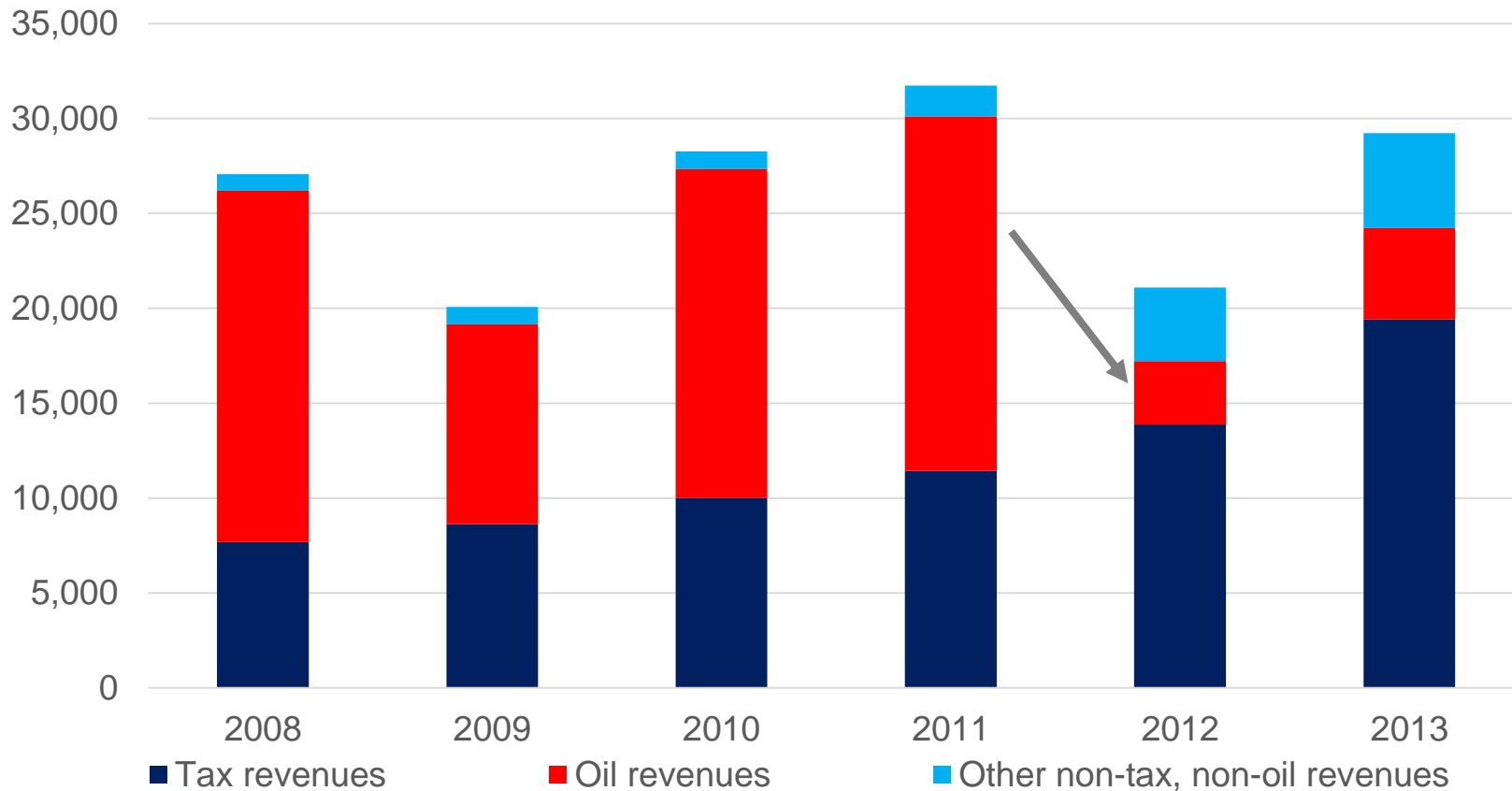


Source: World Bank staff own compilation, based on data from Central Bank of Sudan, and IMF..

**Key finding 3:
Weak resource revenue
management, budget deficits and
low savings**

Oil revenues contributed more than 50 per-cent to total fiscal revenues at its peak during the oil years, but this changed in 2011

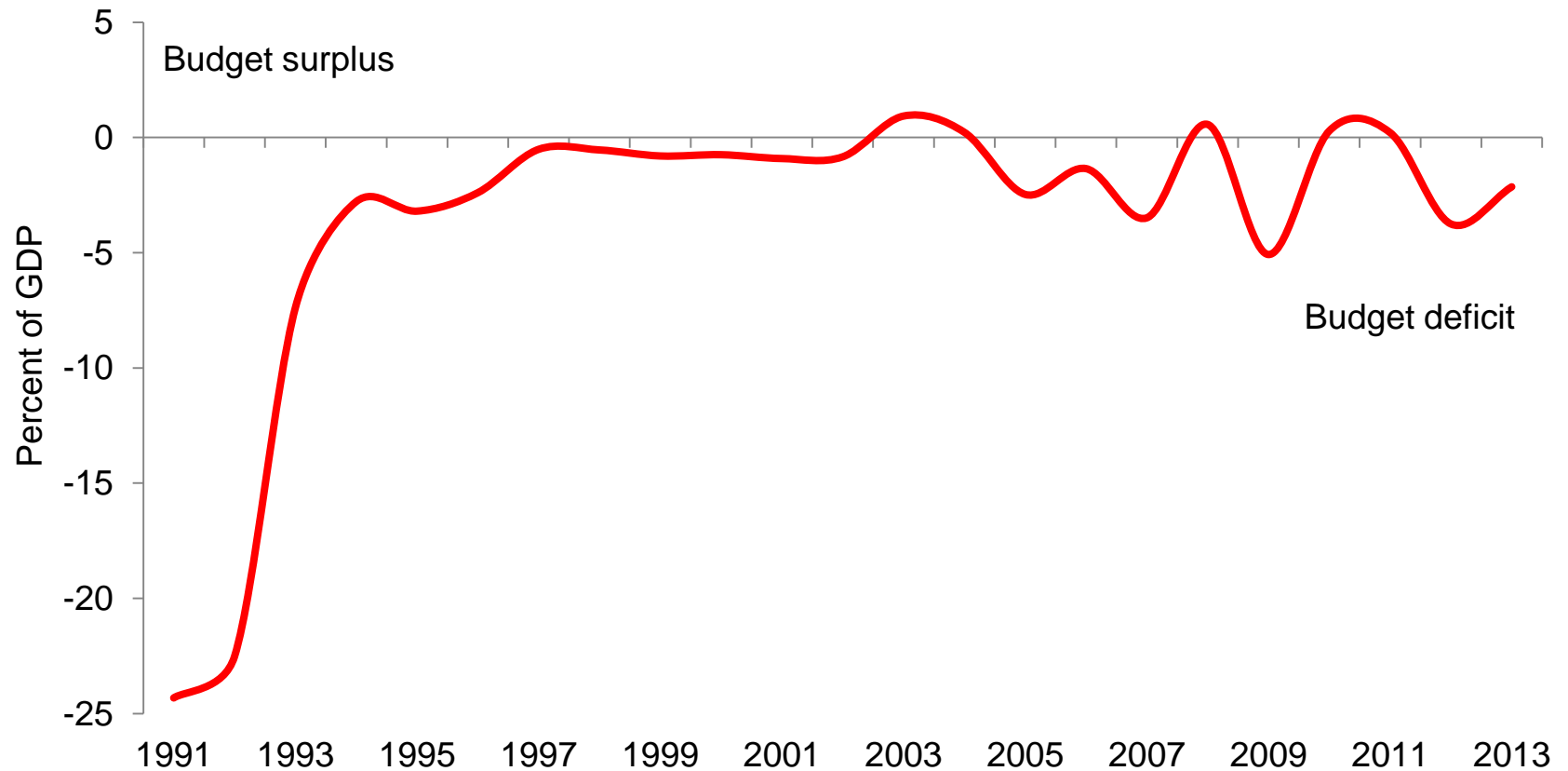
Fiscal revenues and composition (SDG mn)



Source: World Bank staff own compilation, based on data from Central Bank of Sudan; IMF; and World Bank WDI.

Sudan's budget has been in deficit since 1991 and only occasionally balanced during the oil-driven investment boom

Overall budget deficit, 1991-2013

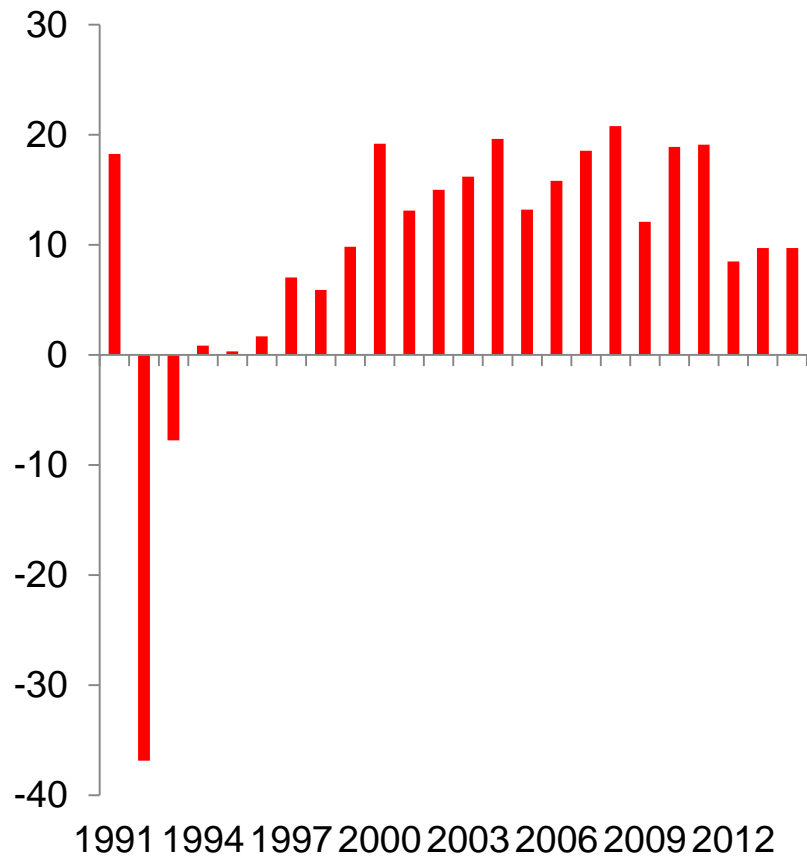


Source: World Bank (2015 forthcoming): Sudan Country Economic Memorandum.

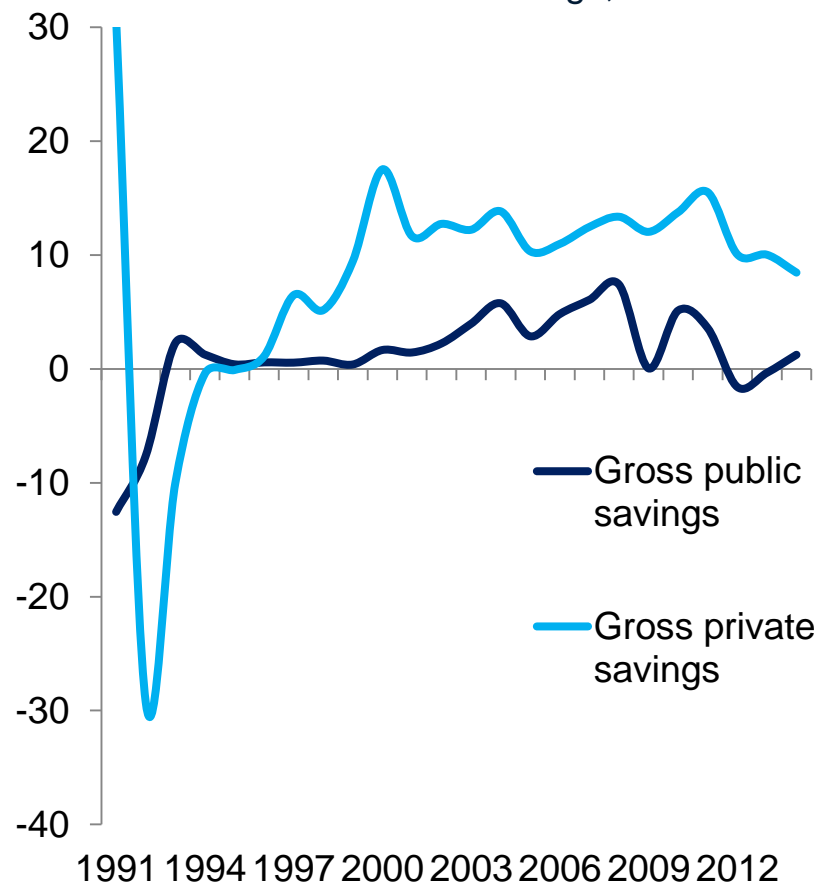
Financing the deficit is one of the key challenges now, but options for foreign financing are limited given Sudan's debt crisis

Domestic savings matter for Sudan's economic transition and savings are low

National Savings in Sudan, 1991-2014



Private and Public Savings, 1991-2014

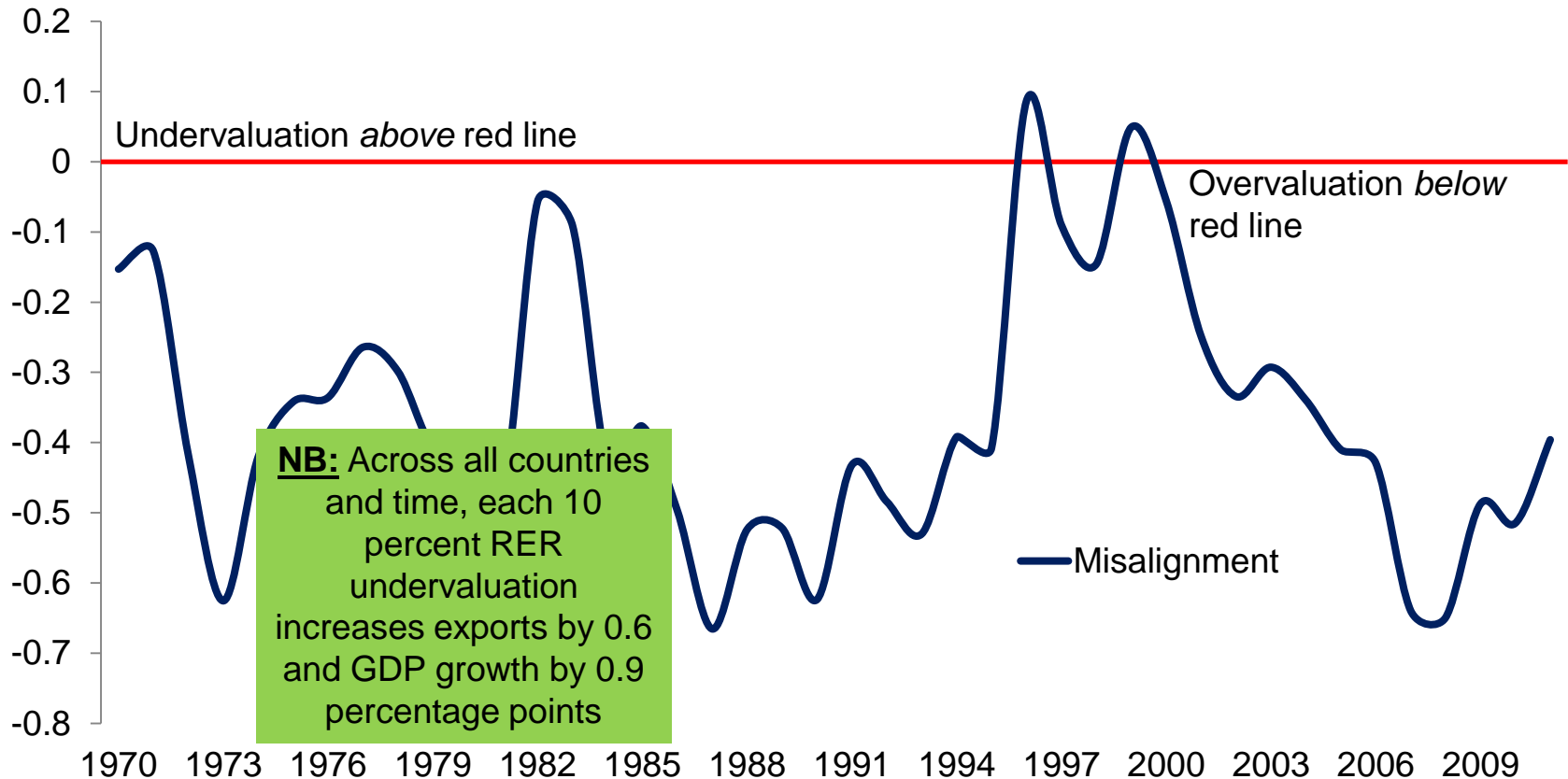


Source: World Bank staff own compilation, based on data from Central Bank of Sudan; IMF; and World Bank WDI.

Key finding 4:
Long history of overvalued real
exchange rate

Sudan's Real Exchange Rate (RER) has been greatly overvalued over most of the past 40 years

Sudan's RER misalignment, 1970-2011

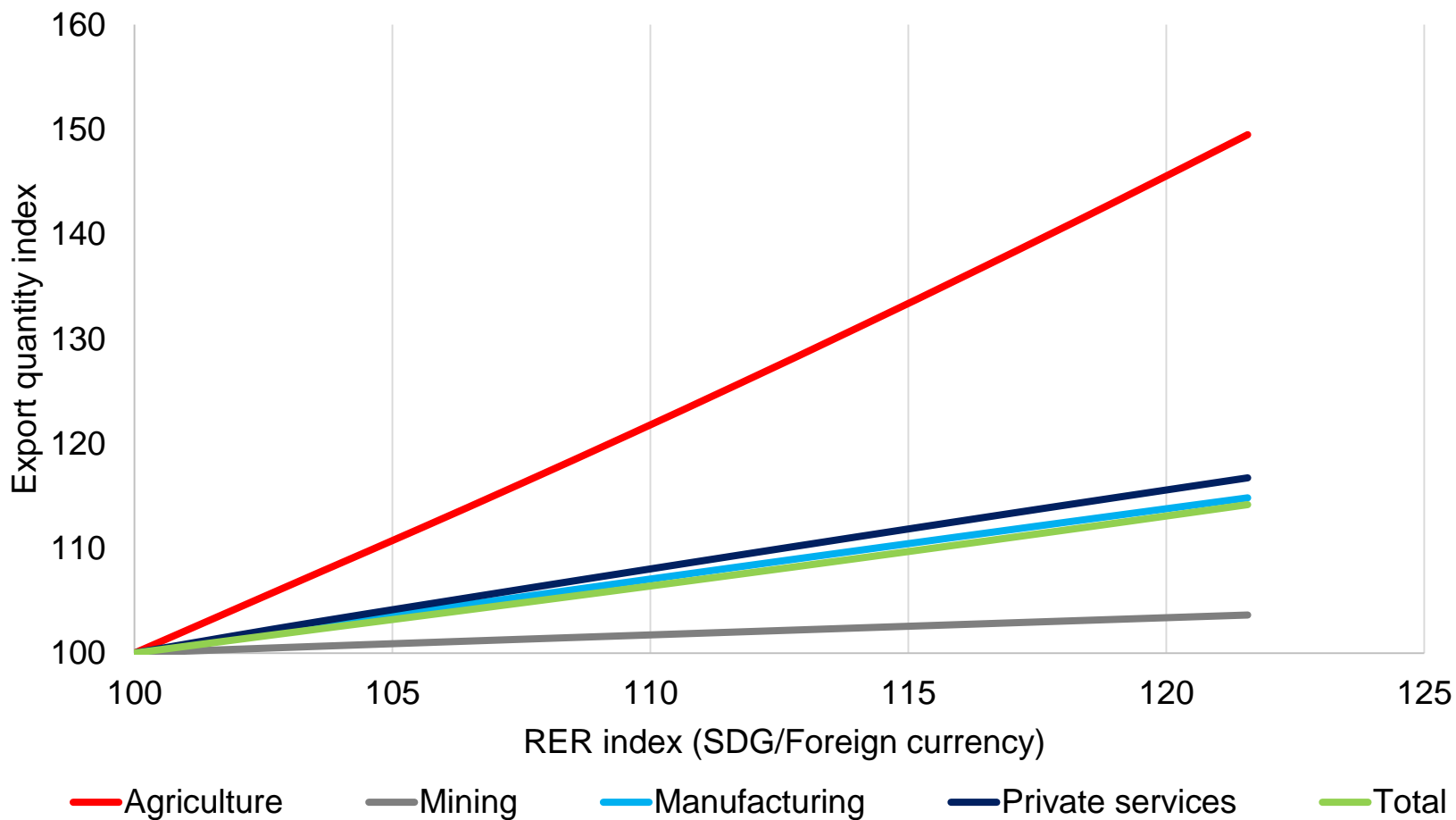


Source: World Bank staff own calculations, based on data from PENN World Tables.

Note: The real exchange rate is the nominal exchange rate adjusted for the effects of inflation. The RER measures real purchasing power of the Sudanese Pound; this equals international competitiveness of a country's exports.

RER changes have a particularly large effect on agriculture exports in Sudan

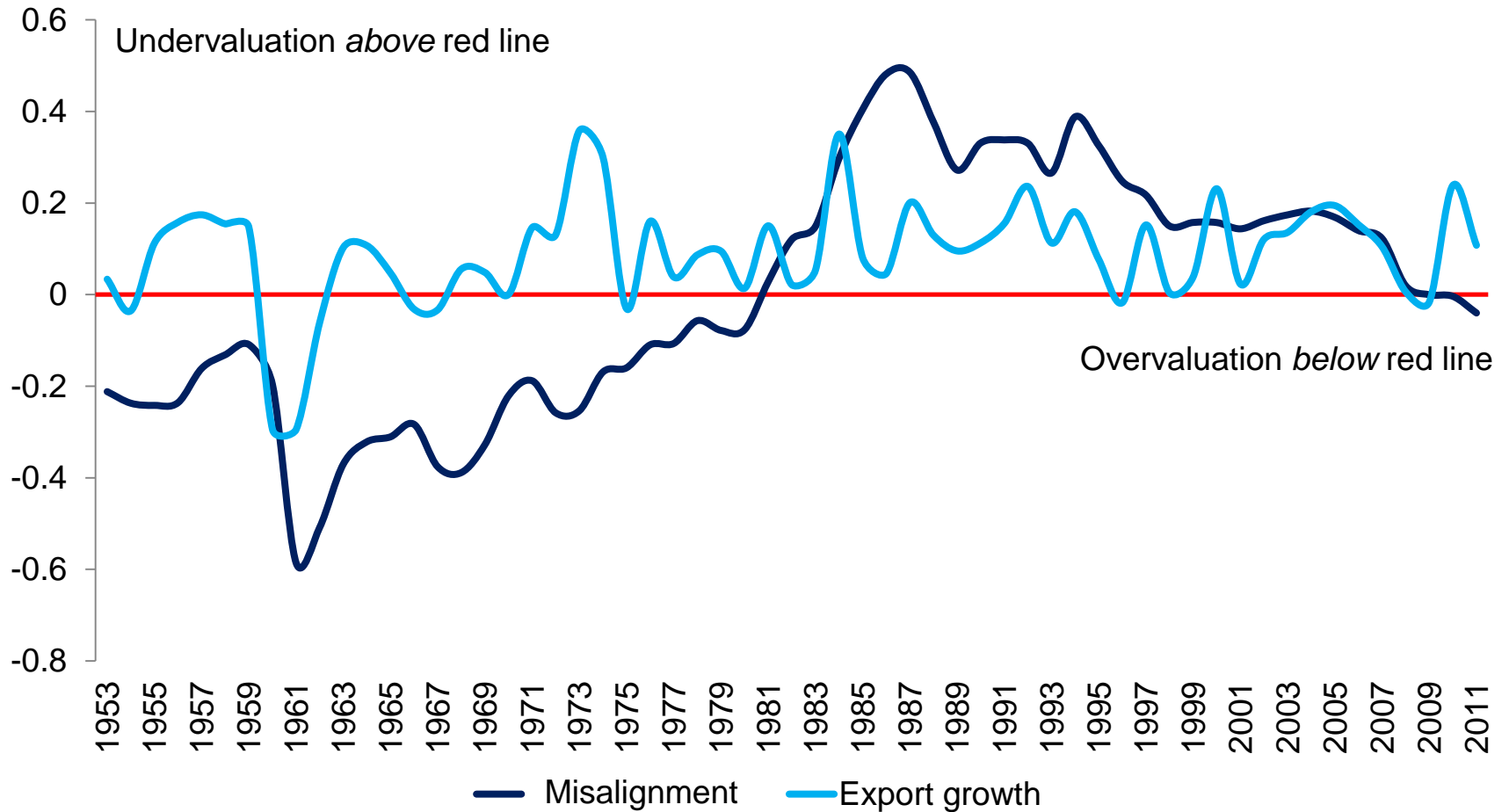
CEM Simulation: Real exchange rate and export quantity (index base = 100)



Source: World Bank staff own calculations using the MAMS Sudan Model.

Undervaluation is a distinct feature of export success in other countries: China

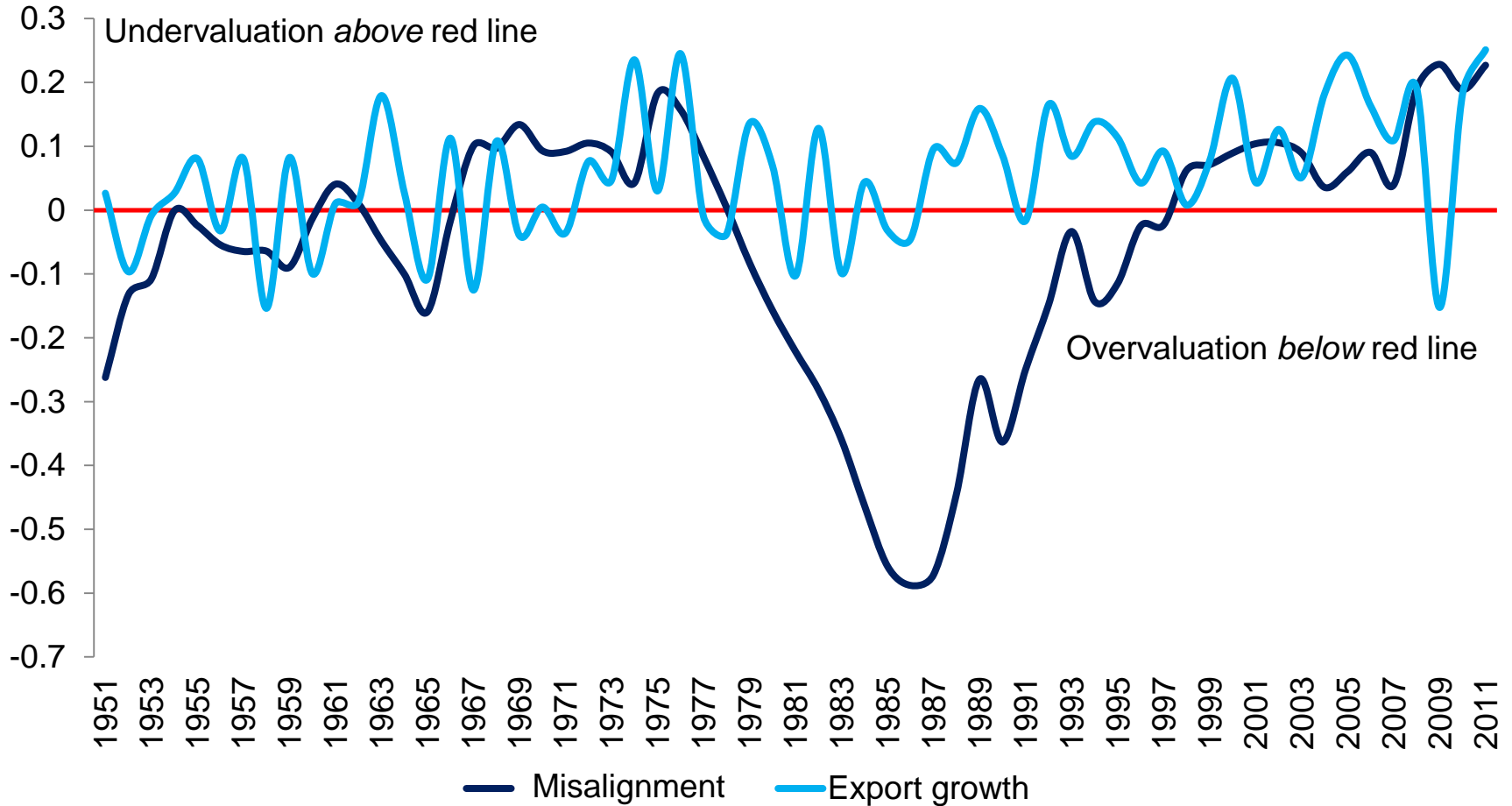
Undervaluation and export growth, China



Source: World Bank staff own calculations, based on data from PENN World Tables.

Undervaluation also observable in India since the mid-1990s

Undervaluation and export growth, India

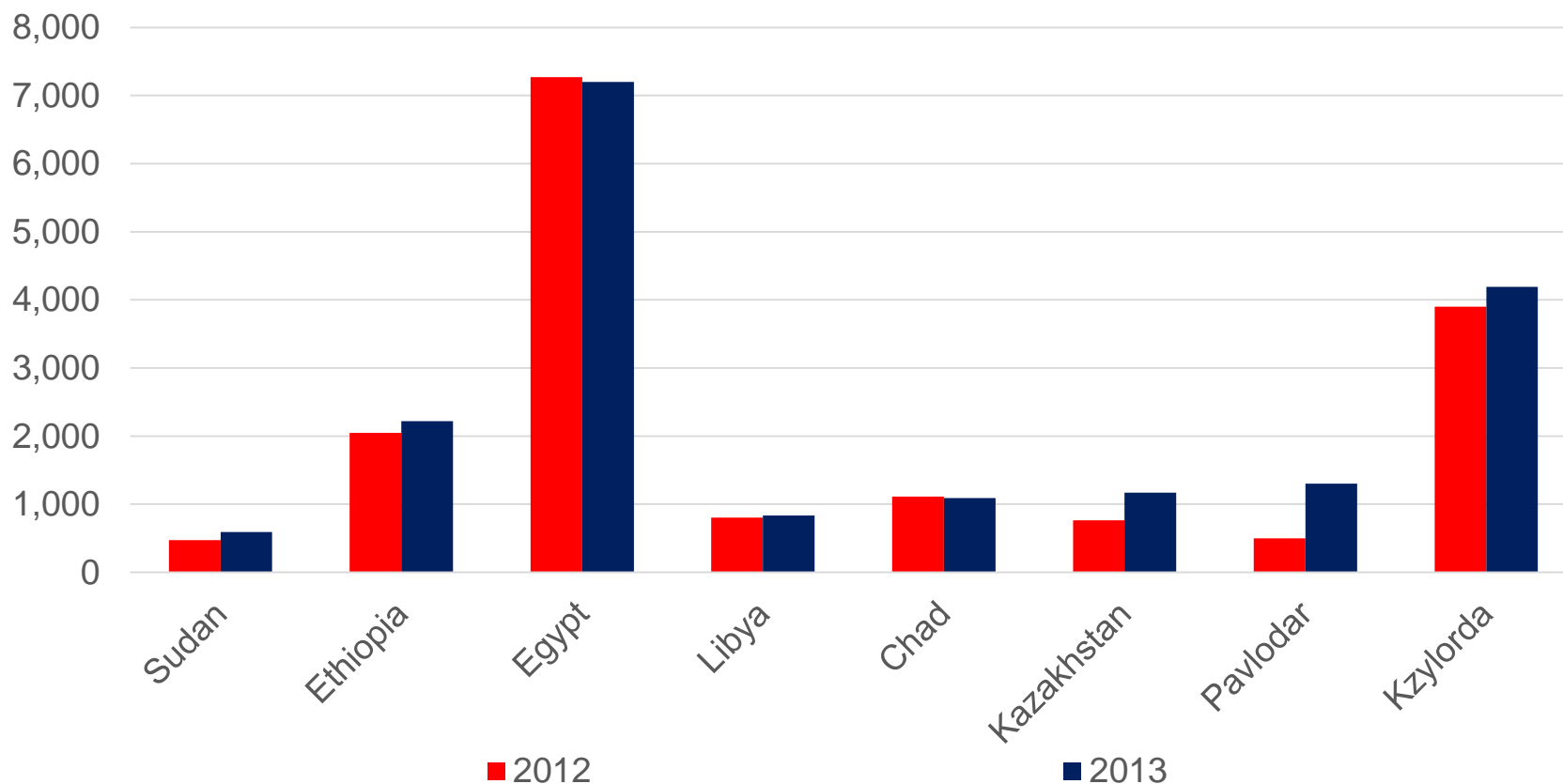


Source: World Bank staff own calculations, based on data from PENN World Tables.

Key finding 5: Extremely low productivity in agriculture

The story of agriculture in Sudan is by and large a story of low productivity: wheat yields are indicative of the problem

Sudan's wheat yields in perspective (kg/feddan), selected countries



Source: World Bank staff own calculations, based on data from Central Bank of Sudan; the Ministry of Agriculture and Irrigation; and selected other country authorities.

Note: Pavlodar and Kzylorda are places in Kazakhstan where climate is very extreme.

Low fertilizer usage is a key issue behind low productivity; centralized marketing and choice of grains are additional factors

Some facts about low fertilizer usage

- In 2009 the average fertilizer use per hectare of cropland was 7.3 kg.
- Ethiopia, Sudan's poorer neighbor, used 17 kg.
- Sudan used as much as 80 kg/ha in the mid-1970s, and 70 kg/ha in the 1980s.
- Reasons for low usage today are unclear.
- But it seems that the decline in agriculture is associated to fertilizer usage.

Additional factors

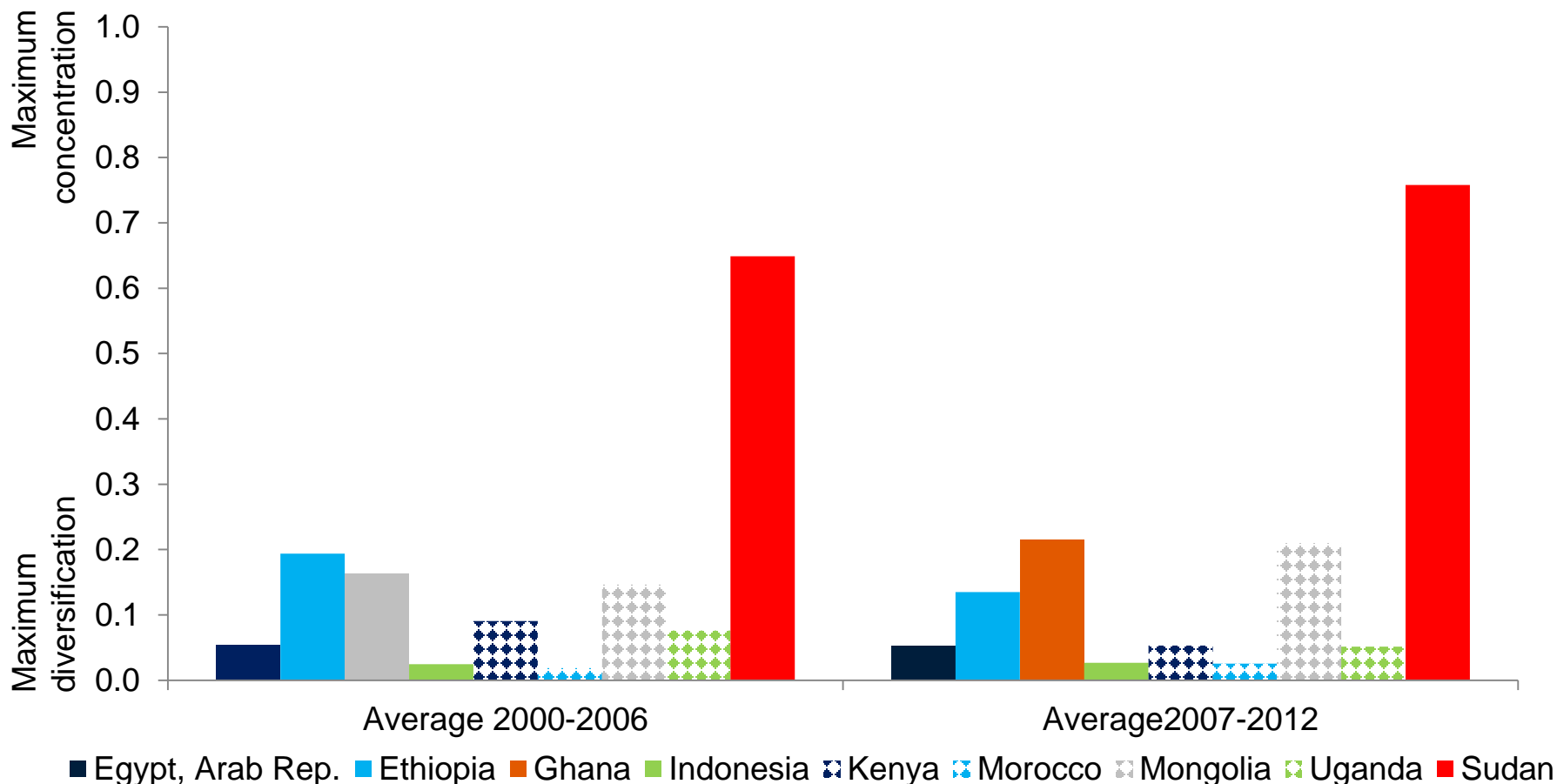
- Strong *policy push for wheat and sugar production*, which are foreign crops to Sudan. Seasonality and water availability impair productivity.
- *Centralized marketing of agriculture products* through state agencies leads to low prices for farmers and low productivity. Gum Arabic and Cotton benefitted much from relaxations since 2009.

Source: World Bank (2015): Sudan Country Economic Memorandum.

Key finding 6: Very concentrated export markets

Sudan's export basket is very concentrated – especially for it has coastal access and proximity to multiple large markets

Herfindahl-Hirschman Index at the products level, Sudan and selected countries

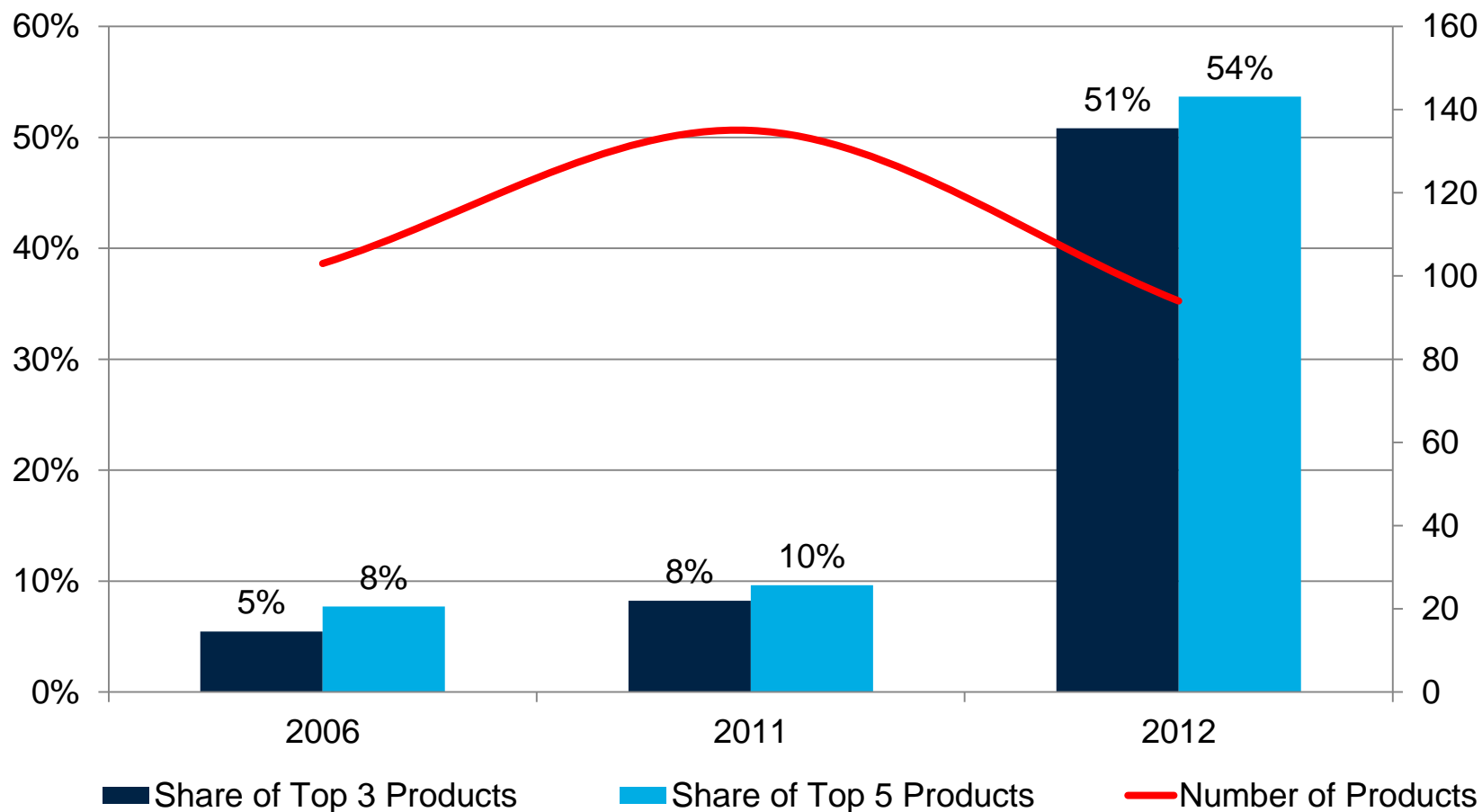


Source: World Bank staff own calculations, based on data from UN COMTRADE.

Note: The HH index is calculated as the sum of the squared market shares for all products.

Export concentration is much lower when looking at non-oil exports, but has increased in 2012 with the emergence of gold

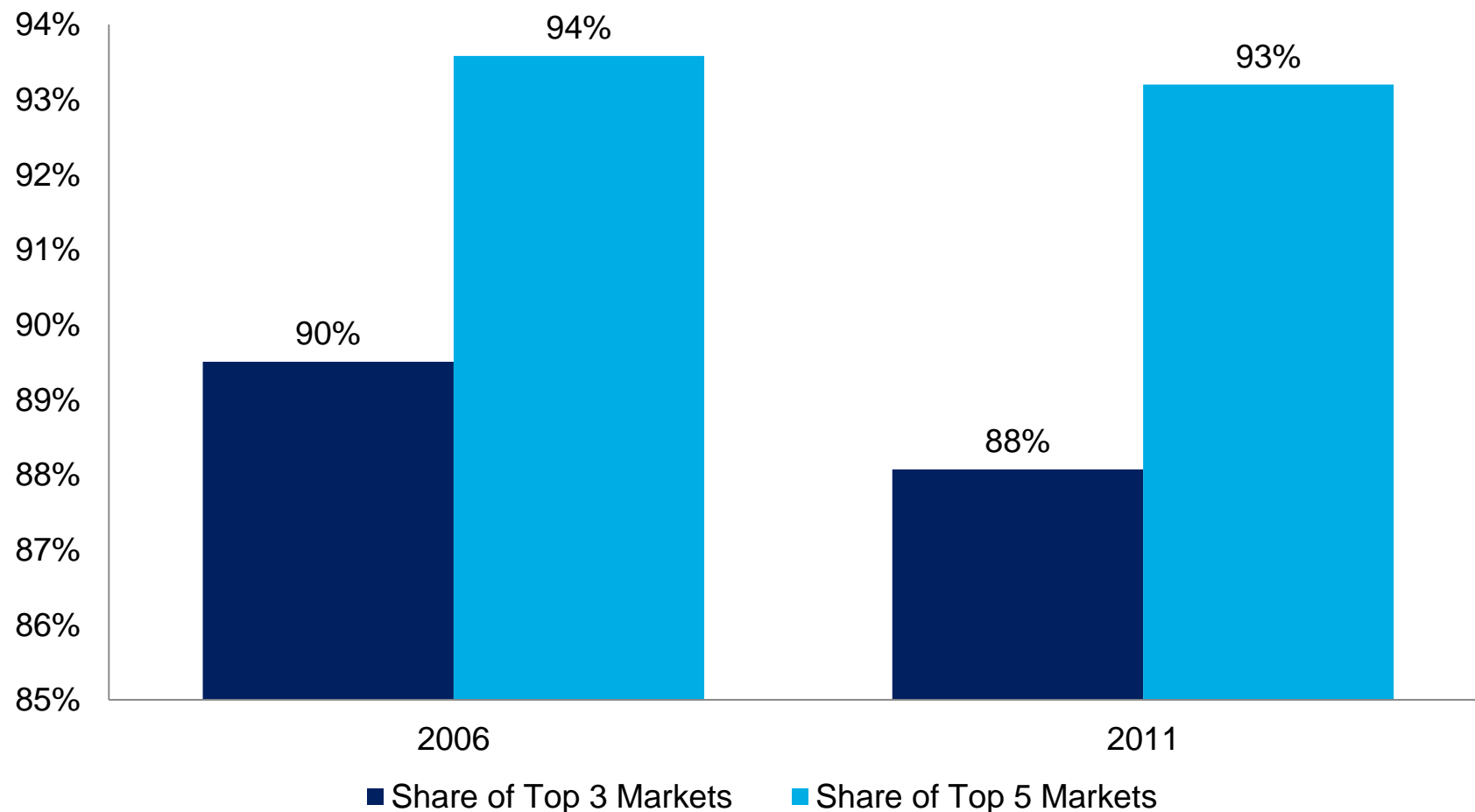
Export concentration in terms of products, excluding oil



Source: World Bank staff own calculations, based on data from UN COMTRADE.

Yet, Sudan's export concentration is also evident in the high share of its top destinations in overall exports

Sudan's export concentration in terms of destination markets



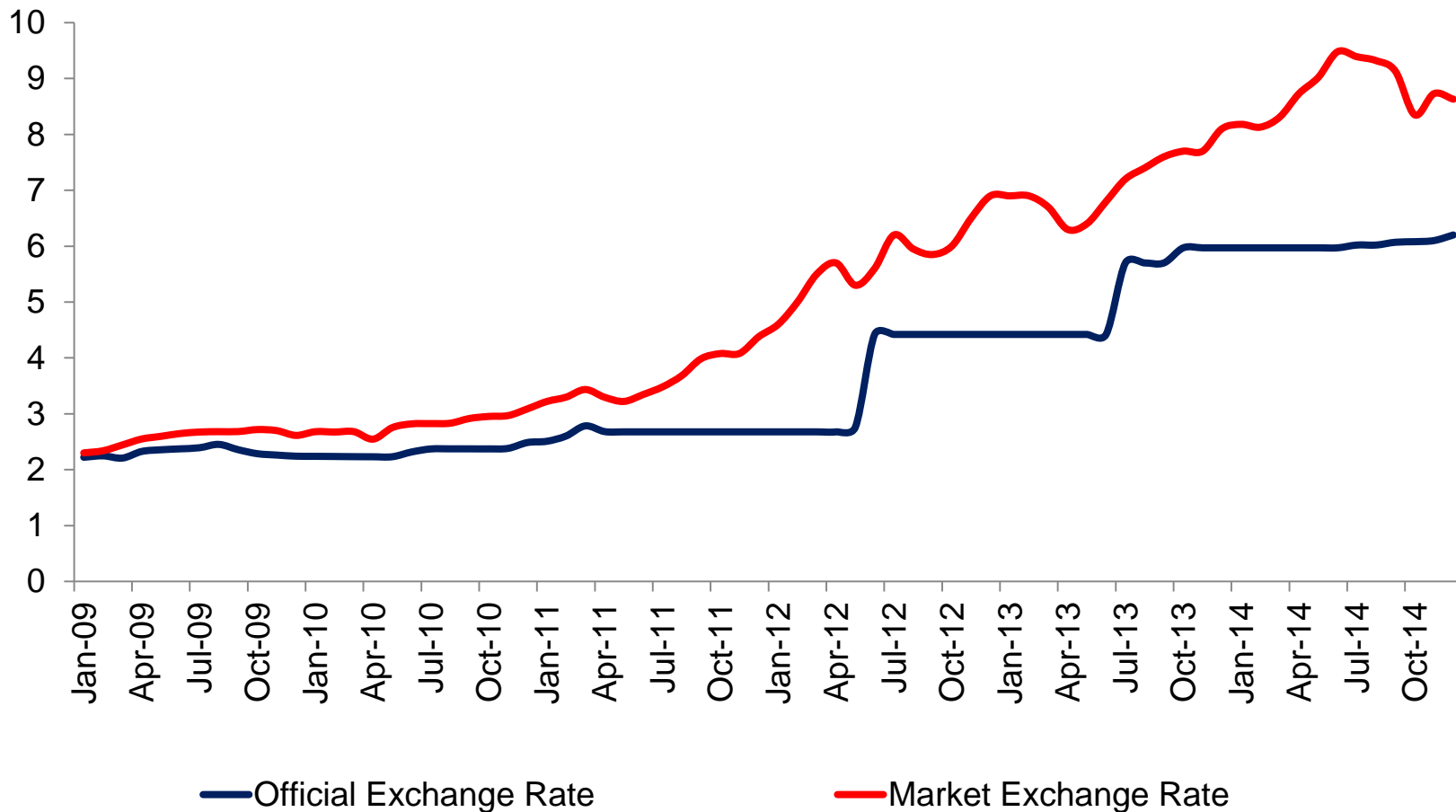
Source: World Bank staff own calculations, based on data from UN COMTRADE.

Main Recommendations

Main recommendation #1:
Remove exchange restrictions to
unify official and black-market rate

The official and black-market rates show an increasing spread confirming the overvaluation of the Sudanese pound

Sudan's official and market exchange rate (SDG/USD), 2009-2014



Source: World Bank staff own compilation, based on data from Central Bank of Sudan.

How to unify the exchange rates? *Big Bang* and *Gradual* devaluations

Principle Considerations

Big Bang

Definition:

Large, one-off devaluation overnight.

Challenges

- ❑ *Economic disruptions:* Sudden change in relative prices, cheaper exports and more expensive imports.
- ❑ *Value of foreign debt:* Sharp devaluation to raise value of foreign currency denominated debt in domestic currency.
- ❑ *Inflation:* Sudden changes in import prices to lead to spikes in inflation.

Advantage

If perceived as a one-off event, no further expectation of devaluation.

Gradual

Definition:

Incremental devaluations over a period.

If further devaluation is expected:

- ❑ Possible 'hoarding' of foreign exchange thereby creating a black market and worsening foreign exchange shortages.
- ❑ Speculative outflows could increase devaluation pressure.

Incremental changes in relative prices:

- ❑ Important if high levels of external debt; and/or
- ❑ Large reliance on imports

Gradual devaluation preferred as it is associated with significant output increases and improvements in the trade balance

Summary of Empirical findings

Big Bang				Gradual			
Variable	Effect			Variable	Effect		
	t0	t+1	t+2		t0	t+1	t+2
GDP	Negative			GDP	No impact		POSITIVE
Investment	Negative			Investment	No impact		
Consumption	Negative	Negative		Consumption	No impact		
Trade balance	POSITIVE	POSITIVE (less)		Trade balance	POSITIVE		
Manufacturing	No impact			Manufacturing	No impact		
Logistics	No impact			Logistics	No impact		
Central bank ind.	No impact			Central bank ind.	No impact		
Poor vs. rich country	Poor countries do better			Poor vs. rich country	Poor/rich does not matter		
Small vs. big country	Small countries do better			Small vs. big country	Small/big does not matter		

Data and definitions:

Country level panel data for 221 Countries and 233 Episodes between 1960 and 2015.

Big Bang: More than 20% one-off nominal devaluation --- Gradual: Between 5 and 20% devaluation for at least 3 consecutive years.

Poor country: 98 --- Rich country: 123

Small country: 115 --- Rich country: 106

Most Successful gradual devaluations started with a larger initial devaluation in year one followed by several smaller ones

10 most successful gradual devaluations with initial (first-year) devaluation

Year	Country	First-year initial nominal devaluation	Initial RER overvaluation	Cumulative devaluation
1981	Bhutan	9.6%	61.1%	45.3%
2009	Sierra Leone	12.7%	29.2%	37.8%
1996	Cabo Verde	7.2%	70.5%	44.3%
1971	Korea	13.0%	-17.3%	36.0%
1988	Bhutan	7.1%	11.5%	45.3%
1989	Solomon Islands	9.6%	15.8%	42.6%
1987	Chile	12.9%	14.7%	59.3%
1980	Mauritius	19.7%	36.3%	89.5%
1981	Norway	15.0%	4.2%	55.4%
1982	Nepal	7.1%	37.3%	54.3%
	Average	11.4%	26.3%	49.7%

Data and definitions:

Country level panel data for 221 Countries and 233 Episodes between 1960 and 2015.
Cumulative devaluation for gradual devaluation period; length varies across countries

Exchange rate adjustment needs to be accompanied by complementary macro-policies to ensure success

Keep core inflation low through lower budget deficits and less reliance on domestic deficit finance

- Real exchange rate will continue to appreciate as long as inflation is being driven by deficit financing and excess liquidity

More resilient investment financing through higher domestic savings

- Facilitate domestic savings through low inflation and positive real interest rates

Limit use of financial sector interventions for sector promotion

- Development banks/agriculture lending. Instead, increase access to finance for all sectors and businesses.

Source: World Bank (2015): Sudan Country Economic Memorandum.

**Main recommendation 2:
Increase agriculture productivity
through a set of key (policy) changes**

Increase agriculture productivity through a set of key (policy) changes

Agriculture policy changes

- Rethink centralized marketing of agriculture products and learn from gum Arabic and cotton experience
- Gradually decrease subsidy on domestic wheat production (capitalizing on the recent reform to abolish the preferential wheat exchange rate)
- Diversify wheat imports to lower the wheat import bill (next slide)

Agriculture investments

- Promote fertilizer usage
- Establish modern state-level grain storage
- Prepare for rehabilitation of the Gezira scheme

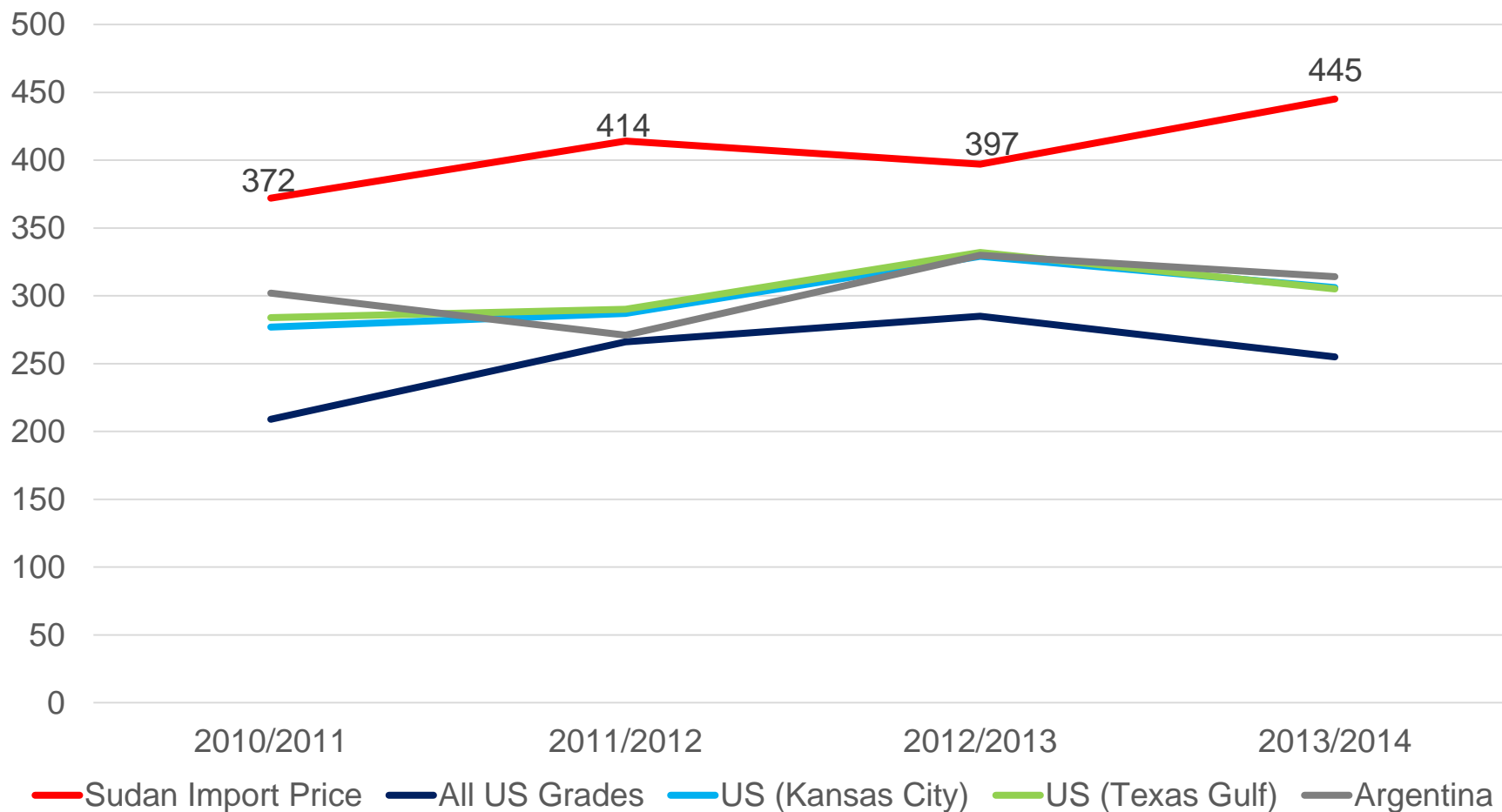
Pilot the move from agriculture to agro-processing

- Pilot gum Arabic spray-drying in combination with increasing the value of raw material
- Apply lessons from pilot for other successful raw exports such as sesame, cotton, and livestock.

Source: World Bank (2015): Sudan Country Economic Memorandum.

Sudan's wheat import price is relatively high and there is scope to lower the wheat import bill by rationalizing the sources

Sudan's wheat import price in perspective (US\$/ton)



Source: World Bank (2015): Sudan Country Economic Memorandum.

Increase agriculture productivity through a set of key (policy) changes (ctd).

Agriculture policy changes

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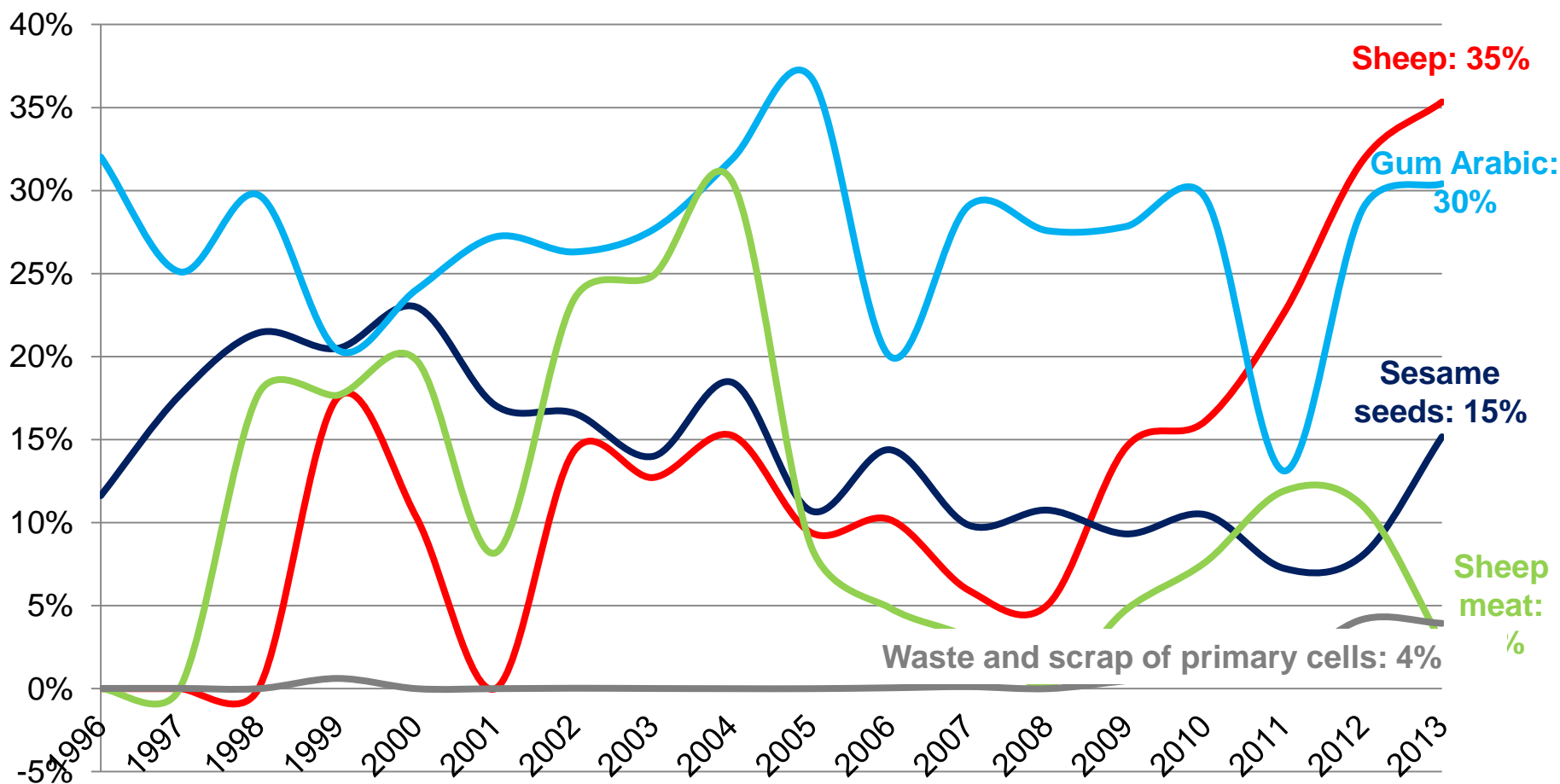
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Source: World Bank (2015): Sudan Country Economic Memorandum.

Focusing on Sudanese exports with larger world market shares could be a good way to pilot the move towards agro-processing

Sudanese products with larger world market shares, 2013

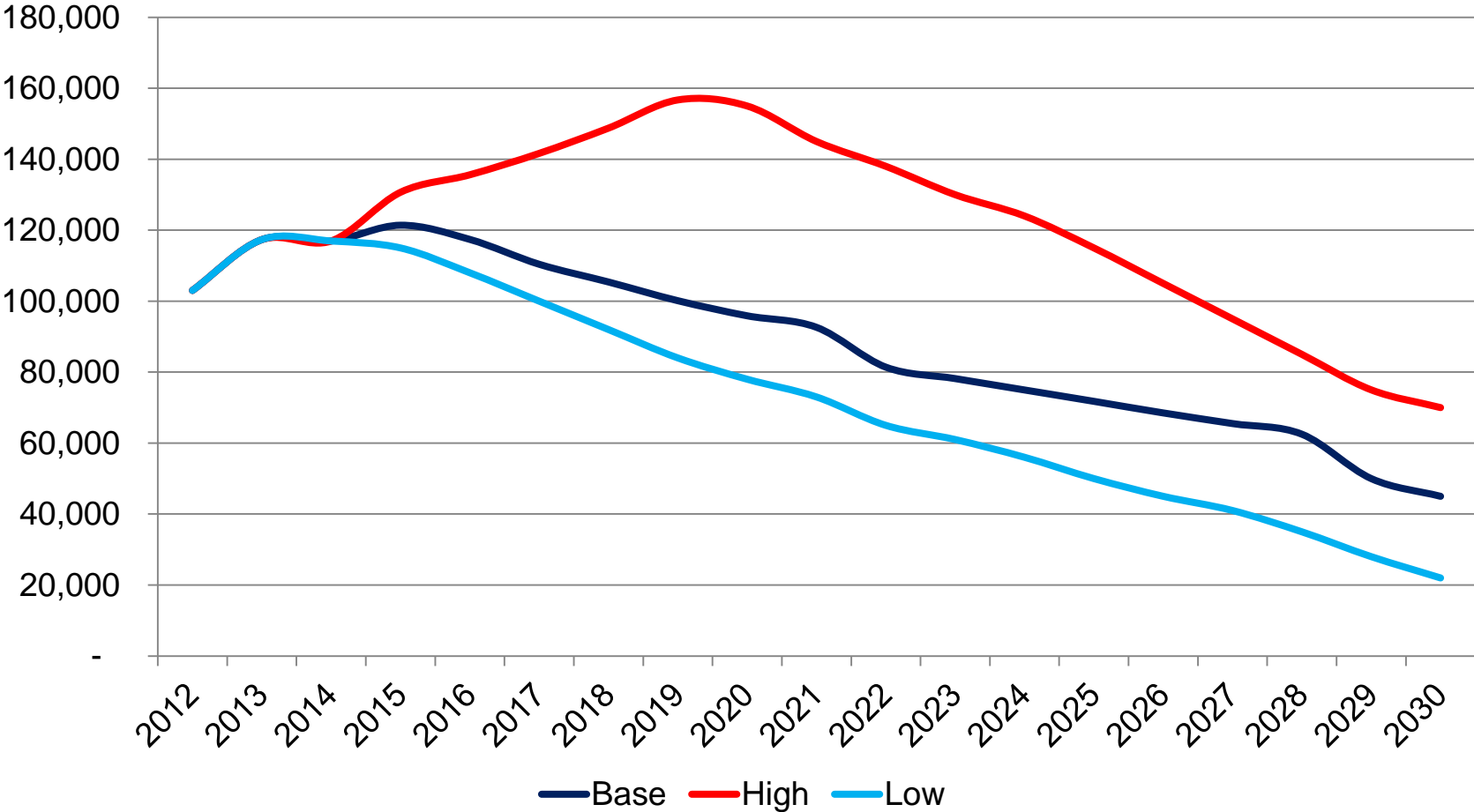


Source: World Bank staff own calculations, based on data from UN COMTRADE.

Main recommendation 3: Improve the management of natural resource rents

Establish a more realistic medium-term outlook on oil production

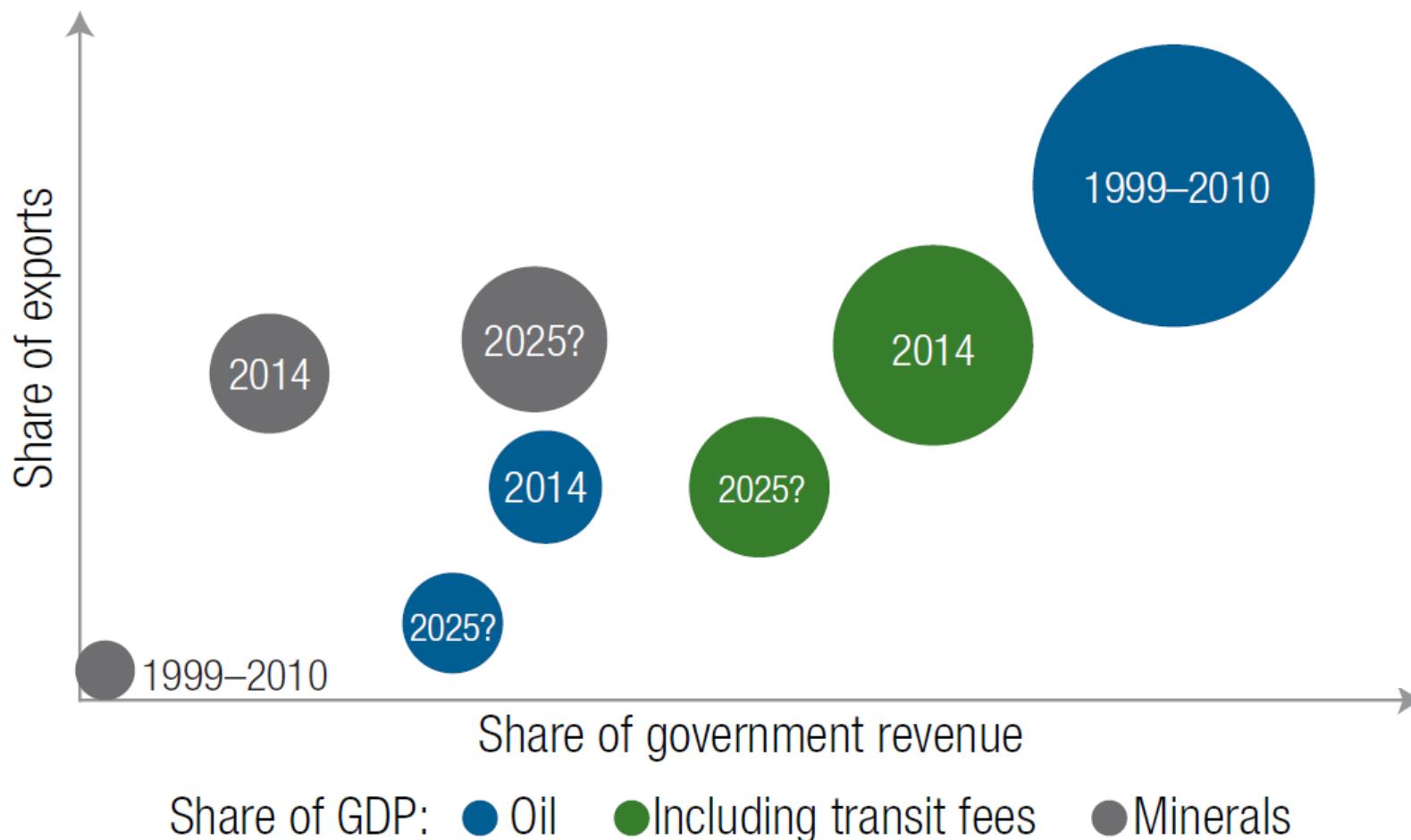
Projected domestic crude oil production, bpd



Source: Ministry of Petroleum (2013); and Wood Mackenzie (2013).
Note: The High estimate equals the Government's estimate.

More broadly on natural resources, a strategic outlook is required to efficiently utilize the remaining resource wealth

Contribution of oil and minerals to Sudan's economy: still important, but less dominant

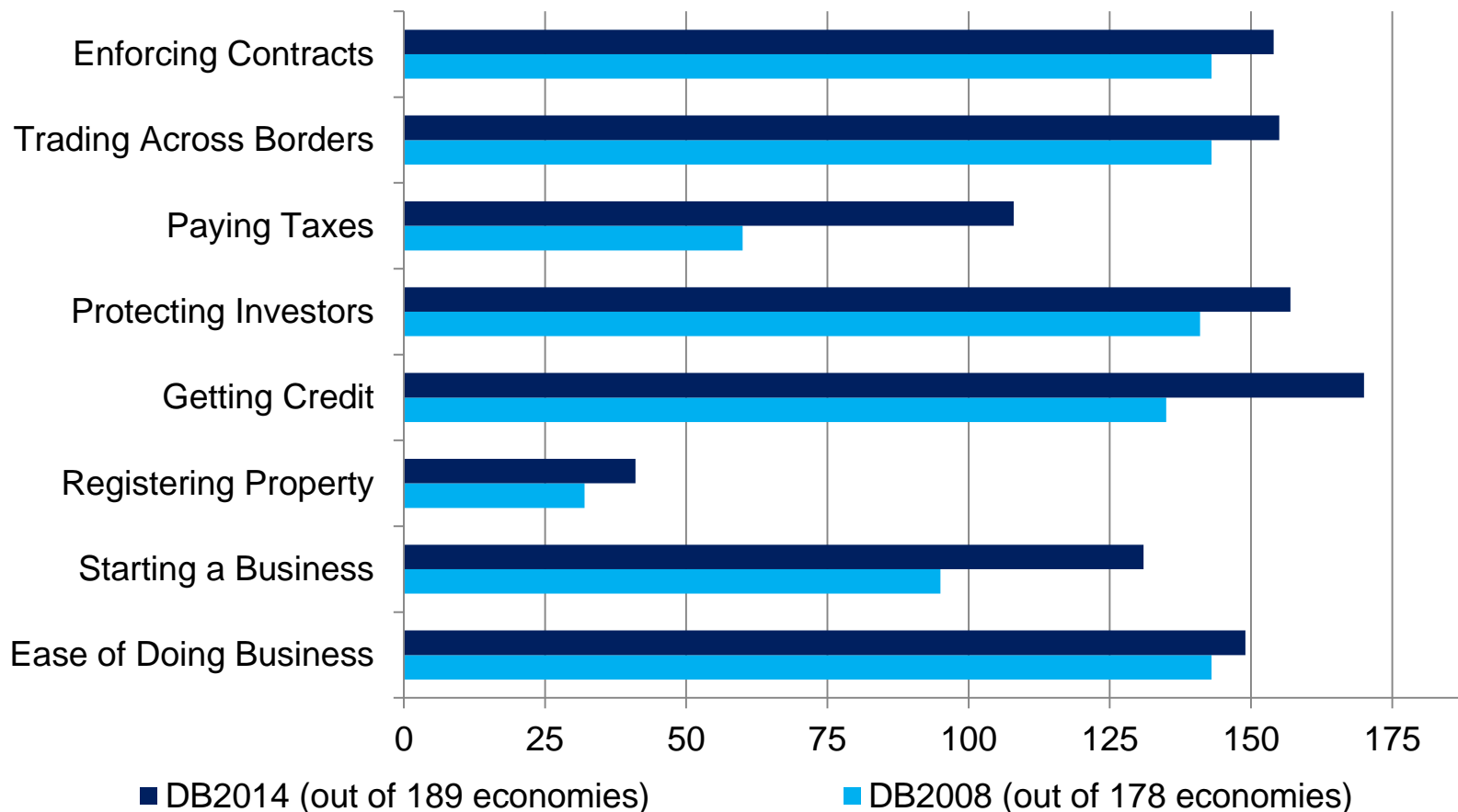


Source: World Bank (2015): Sudan Country Economic Memorandum.

Main recommendation 4: Address broader business constraints

Address broader business constraints to create space for structural transformation

Regulate economic activity better: Sudan's ranking in selected Doing Business Indicators

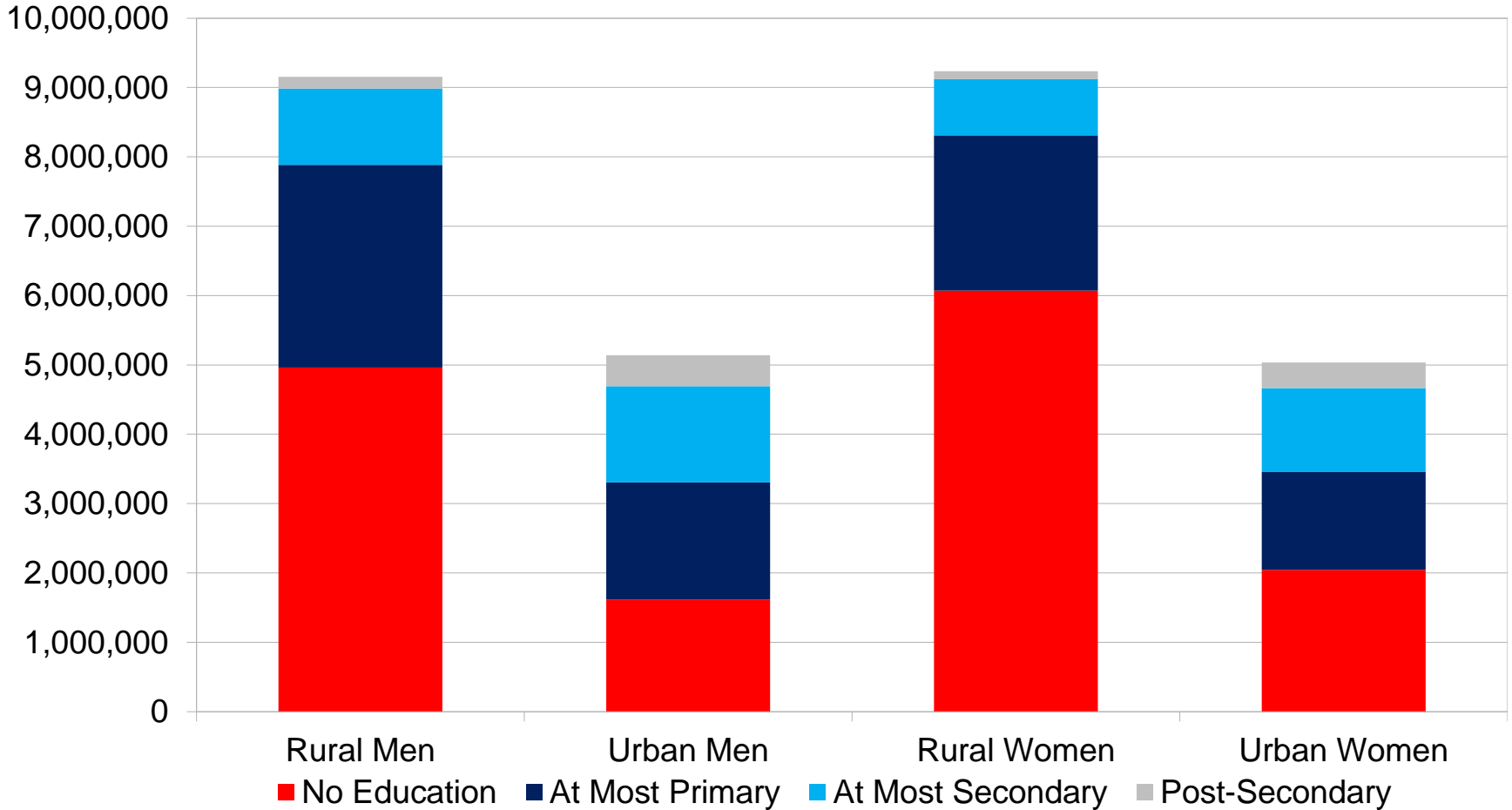


Source: World Bank Doing Business Report, 2008 and 2014.

Main recommendation 5: Build human capital to support structural change

Build human capital to support skills-intensive modern services and reduce spatial disparities – increase education levels

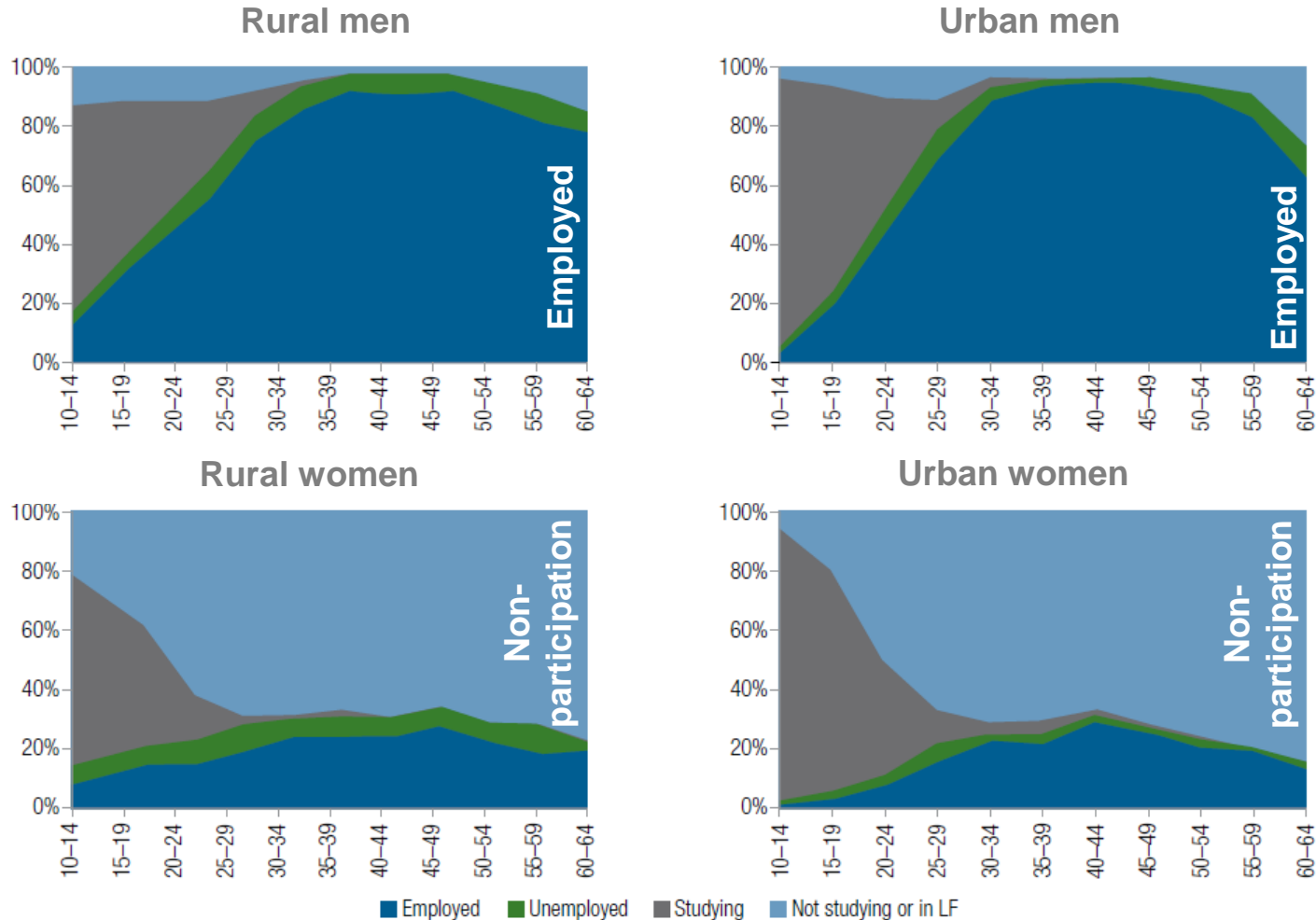
Education levels by gender and location



Source: World Bank staff own calculations, based on data from National Benchmark Household Survey (2009).

Labor force non-participation is far higher for women than men; many educated women never enter the labor market

Employment and labor force participation by cohort



Source: World Bank staff own calculations, based on data from National Benchmark Household Survey (2009).

Summary of findings and recommendations

Six key findings lead to five interlinked recommendations to support diversification in Sudan

Summary of key findings and main recommendations

Findings

- 1) No lasting structural change
- 2) High and volatile inflation
- 3) Weak resource revenue management, budget deficits and low savings
- 4) Long history of overvalued real exchange rate
- 5) Extremely low productivity in agriculture
- 6) Highly concentrated export markets



Recommendations

- ✓ Remove exchange restrictions to unify official and black-market rate and enhance policy consistency
- ✓ Increase agriculture productivity through a set of key (policy) changes
- ✓ Improve the management of natural resource rents
- ✓ Address broader business environment constraints
- ✓ Build human capital to support structural change