

# Wage-labor productivity nexus in the Ethiopian manufacturing: A literature review



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# Outline

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- ❑ Introduction
- ❑ Basic Empirical Research on Productivity and Wage in Ethiopia
- ❑ Eastern Africa's manufacturing sector: Ethiopia country report
- ❑ Light manufacturing in Africa: Targeted Policies to Enhance Private Investment and Create Jobs
- ❑ 4<sup>th</sup> Ethiopia Economic Update: Overcoming constraints in the manufacturing sector
- ❑ Why so idle? Wages and Employment in a Crowded Labour Market
- ❑ Conclusions, implications to competitiveness and suggestions

# Introduction

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- ❑ Ethiopia aims to becoming a light manufacturing hub in Africa by 2025.
- ❑ QPC plays an important role in developing the sector.
- ❑ However, currently, manufacturing firms in Ethiopia lag behind in terms of QPC
  - Lack of knowledge, skill, technology
- ❑ Hence, enhancing QPC remains crucial
  - Improving QPC is one of the pillar strategies in GTP II
  - However, concrete policy measures to enhance QPC remain unclear

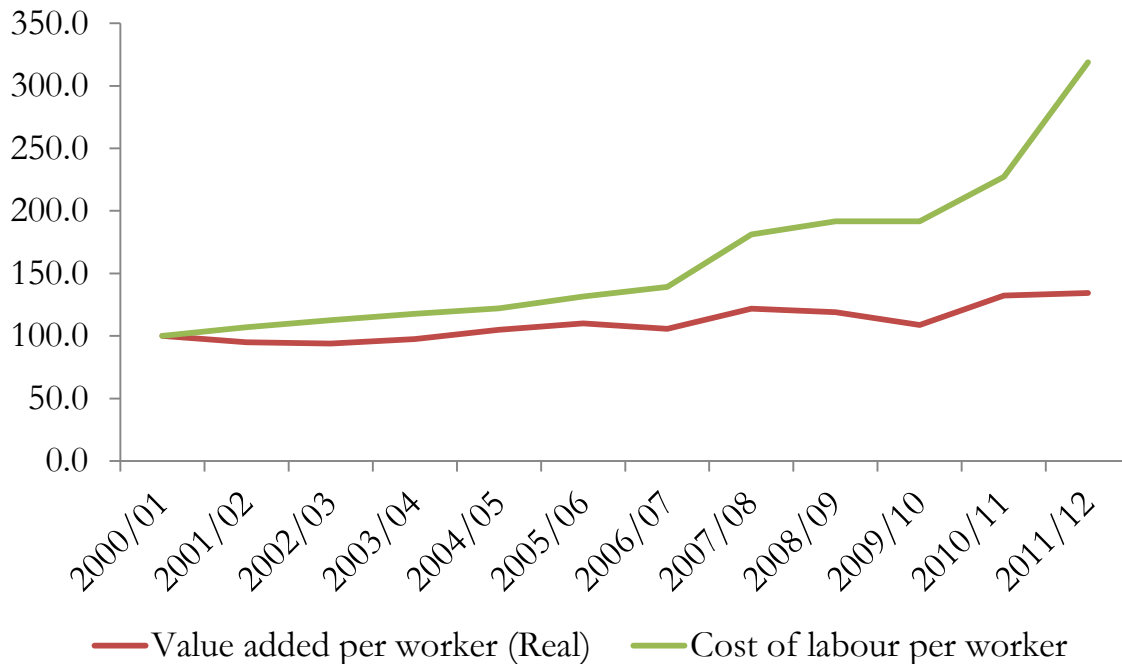
# Introduction

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- ❑ The purpose of this review, therefore, is to provide policy-relevant information on wage-labor productivity in the Ethiopian manufacturing sector to policy makers.
- ❑ For this purpose, five pragmatic and policy oriented studies have been selected and their results discussed.
- ❑ This can be a starting point to initiate further studies on the subject matter.

# Basic Empirical Research on Productivity and Wage in Ethiopia (JICA and GRIPS, 2015):

## Trends in labor productivity and cost of labor

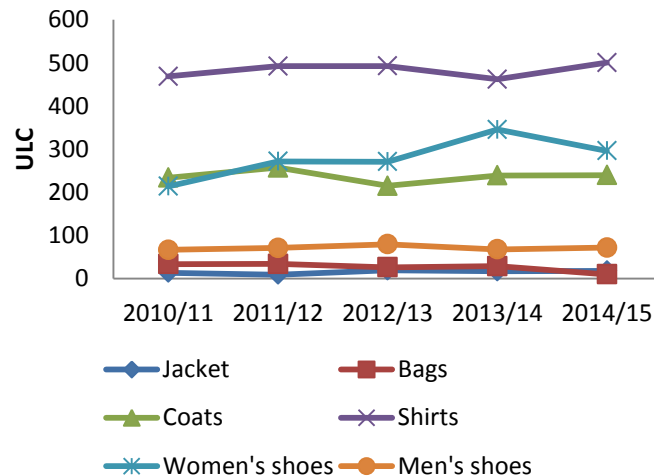


- Average LP is about Birr 59,191 with real growth rate of 3.1%
- Average labor cost increased at a rate of 16.4% per year in nominal terms
- While both labor productivity and average labor cost grew, the latter grew substantially faster than the former, suggesting that labor cost growth is eroding the competitiveness of the manufacturing sector.

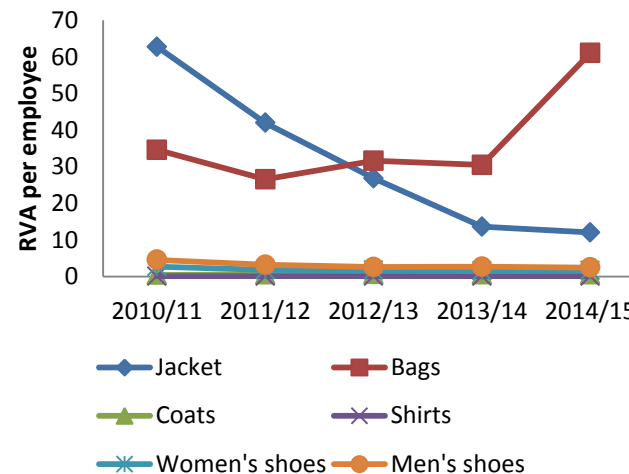
# Basic Empirical Research on Productivity and Wage in Ethiopia:

## Trends in labor productivity and cost of labor (Leather and Textile)

Competitiveness (trends in real ULC by products type)



Trends in labor productivity by products type



- ULC for Bags, Coats, and Shirts has seen a declining trend over the period, while for jacket and women's shoes it has exhibited an increasing trend.
- LP also varies from product to product
- Overall, ULC increases by 2.6 % while LP decreases by 1.9% for the products suggesting a deteriorating performance of the industries in terms of labor cost advantage.

# Eastern Africa's manufacturing sector (Ethiopia country report (AfDB, 2014):

## Labour productivity vs Unit Labour cost

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- ❑ Looking at the manufacturing sector as a whole, LP grew in real terms by 3.3% per annum over the period 2001/02 to 2010/11
- ❑ Average labour compensation increased at a rate of 15.7% per annum over the same period.
- ❑ Although both average labour compensation and LP have shown an increasing trend, the former grew faster than the latter.
- ❑ ULC, an indicator of competitiveness, increased from 0.15 in 2001/02 to 0.22 in 2010/11, at annual average rate of 5.4%.
  - This indicates a discouraging performance of the manufacturing sector in terms of labour cost competitiveness.

# Eastern Africa's Manufacturing sector (Ethiopia country report)

ULC declined substantially in industries where productivity rose, as productivity gains offset increases in labour compensation.

Table 2.1: Unit labour cost of manufacturing subsectors

Industrial group	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	% change 2001/02-2010/11
Food and beverage	0.19	0.2	0.18	0.17	0.18	0.14	0.14	0.13	0.17	0.11	-4.9
Sugar	0.15	0.1	0.11	0.13	0.14	0.18	0.19	0.26	0.10	0.09	0.78
Textile	0.62	0.57	0.62	0.44	0.58	0.4	0.44	0.29	0.23	0.53	-7.1
Apparel	0.82	0.67	0.6	0.52	0.83	0.63	0.64	0.81	0.43	0.31	-6.2
Leather	0.32	0.39	0.29	0.38	0.3	0.28	0.24	0.31	0.3	0.15	-5.83
Chemicals	0.2	0.22	0.2	0.19	0.2	0.24	0.17	0.11	0.12	0.12	-7.6
Pharmaceuticals	0.31	0.27	0.14	0.38	0.28	0.25	0.35	0.16	0.25	0.1	-6.73
Cement	0.11	0.1	0.95	0.87	1.01	0.81	0.06	0.08	0.09	0.06	-16.6
Basic iron and steel	0.14	0.19	0.11	0.08	0.1	0.09	0.1	0.15	0.15	0.12	-0.15



# Light manufacturing in Africa:

## Does Ethiopia Have a Comparative Advantage in Light Manufacturing?

Monthly wages in the light manufacturing sectors of five countries, by skill level  
US\$

Product	China		Vietnam		Ethiopia		Tanzania		Zambia	
	Skilled	Unskilled	Skilled	Unskilled	Skilled	Unskilled	Skilled	Unskilled	Skilled	Unskilled
Polo shirts	311–370	237–296	119–181	78–130	37–185	26–48	107–213	93–173	—	—
Diary milk	177–206	118–133		31–78	30–63	13–41	150–300	50–80	106–340	54–181
Wooden chairs	383–442	206–251	181–259	85–135	81–119	37–52	150–200	75–125	200–265	100–160
Crown cork	265–369	192–265	168–233	117–142	181 <sup>a</sup>	89 <sup>a</sup>	—	—	510 <sup>b</sup>	342 <sup>b</sup>
Leather loafers	296–562	237–488	119–140	78–93	41–96	16–33	160–200	80–140	—	—
Milled wheat	398–442	192–236	181–363	78–207	89–141	26–52	200–250	100–133	320–340	131–149
Average	305–399	197–278	154–235	78–131	77–131	35–53	153–233	80–130	284–364	157–208

Ethiopia generally has the lowest wages for skilled and unskilled workers in five light manufacturing industries, almost a third of Vietnam's in most industries—polo shirts, leather loafers, and milled wheat

# Light manufacturing in Africa (WB, 2012): Does Ethiopia Have a Comparative Advantage in Light Manufacturing?

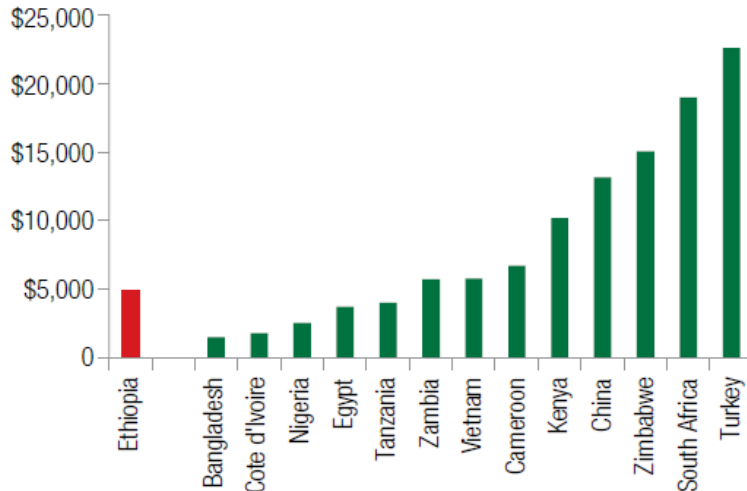
## Labor productivity in light manufacturing sector of five countries

Labor productivity	China	Vietnam	Ethiopia	Tanzania	Zambia
Polo shirts (pieces per employee per day)	18–35	8–14	7–19	5–20	—
Leather loafers (pieces per employee per day)	3–7	1–6	1–7	4–6	—
Wooden chairs (pieces per employee per day)	3–6	1–3	0.2–0.4	0.3–0.7	0.2–0.6
Crown corks (pieces per employee per day × 1,000)	13–25	25–27	10	—	201
Wheat processing (tons per employee per day)	0.2–0.4	0.6–0.8	0.6–1.9	1–22	0.6–1.6
Dairy farming (liters per employee per day)	23–51	2–4	18–71	10–100	19–179

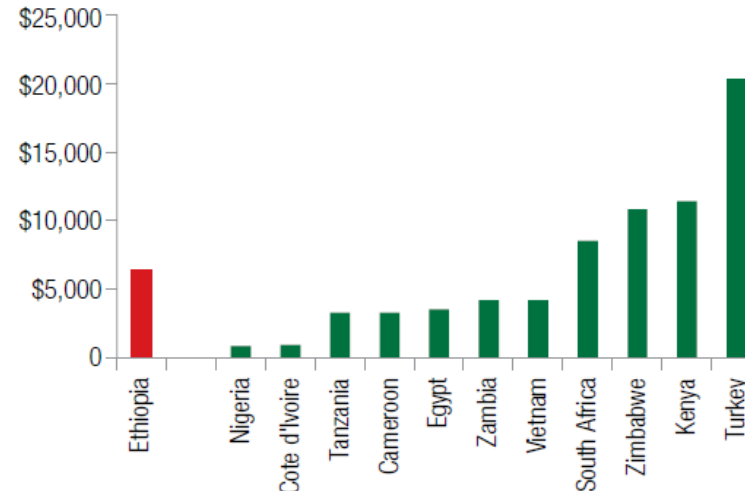
- LP is significantly higher in *well-managed* Ethiopian firms
- For example, labor productivity in polo shirt production is 19 pieces per employee per day in a well-managed firm, underscoring Ethiopia's potential labor cost advantage in garments.

# 4<sup>th</sup> Ethiopia Economic Update (WB, 2015): Productivity benchmarking

1. Labor Productivity Benchmarking in Selected Countries  
(Value Added per Worker in 2009 US\$)



2. Capital intensity in Selected Countries  
(Capital per Worker in 2009 US\$)

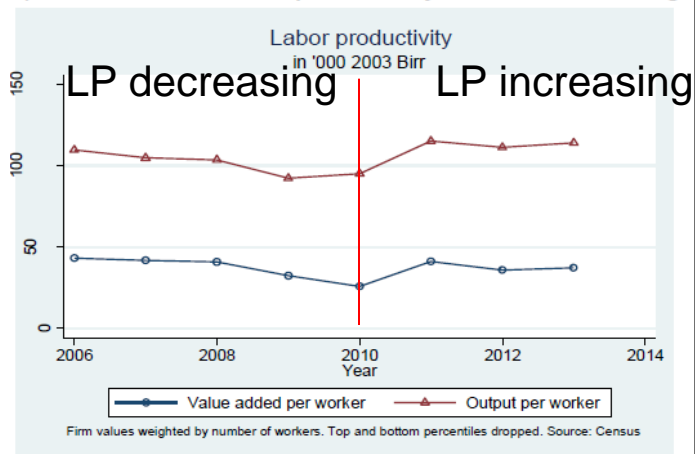


- Firms in Ethiopia (Addis Ababa) appear to be relatively productive
- The median firm produces about \$4,900 of output (value added) per worker
- However, higher labor productivity of firms in Addis Ababa appears to reflect higher capital intensity rather than more efficient production.
  - Firms in Ethiopia are more capital intensive when compared to other peer countries
- Ethiopia remains far below well performing middle income economies such as China and South Africa in terms of labor productivity.

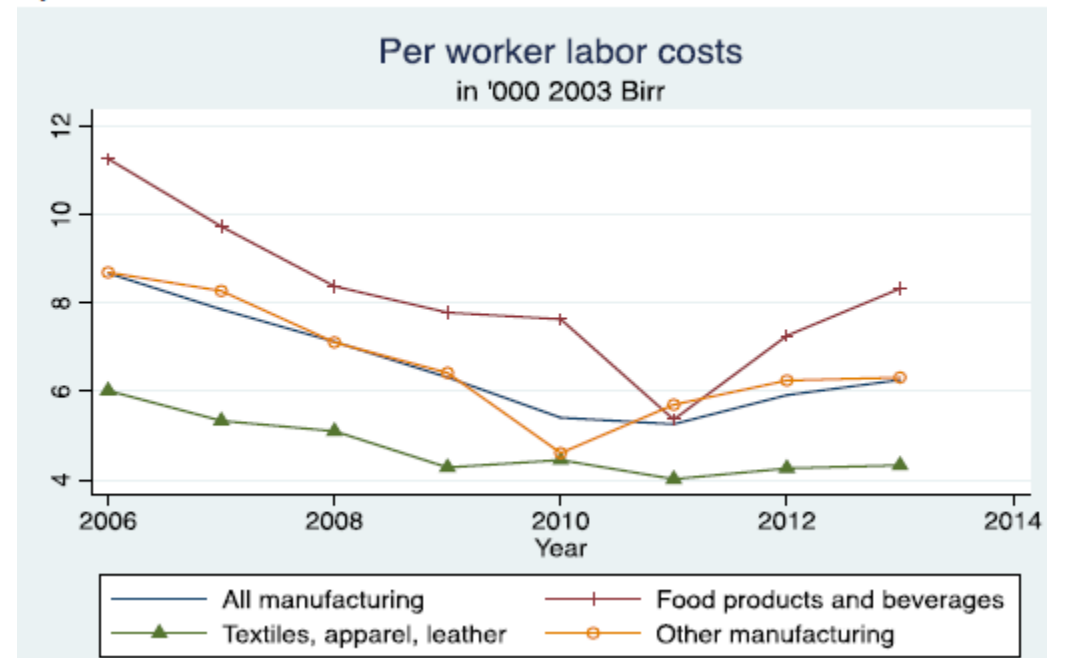
# 5<sup>th</sup> Ethiopia Economic Update (WB, 2016):

## Labor cost and labor productivity in manufacturing sector

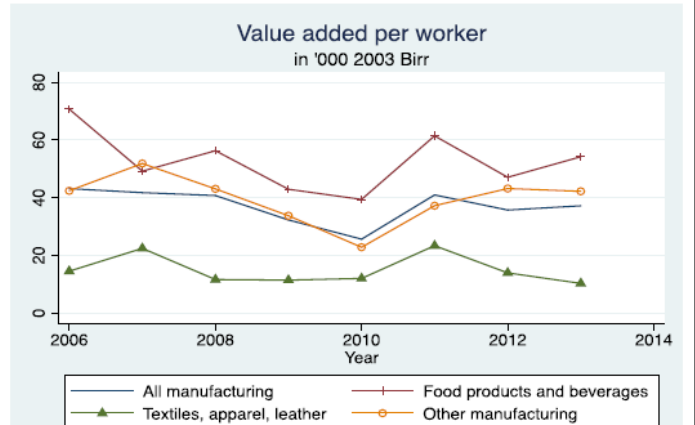
1) Trends in labor productivity in manufacturing



2) Trends in labor costs in manufacturing

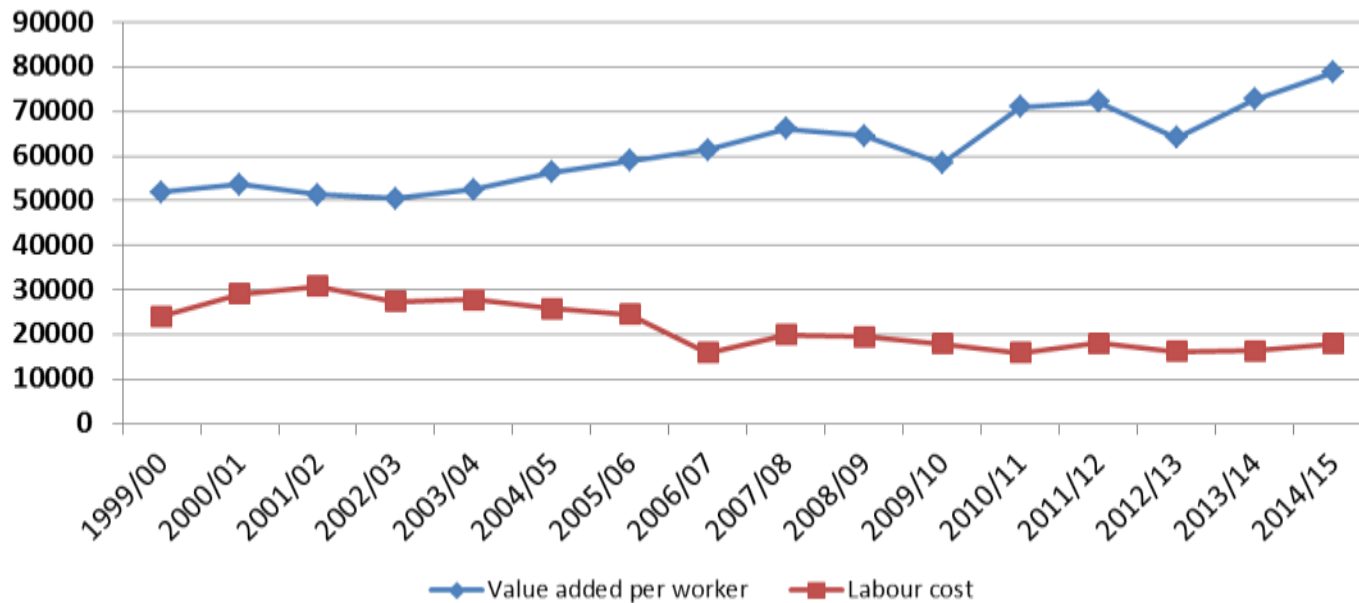


3) Trends in labor productivity by subsector



- Labour costs were falling only until 2011 while increasing in the years that followed.
- LP increases in most industries, but declined since 2011 in textiles, apparel, and leather
- Trends in real wages paid by manufacturing firms may reflect changes in worker productivity,

# Trends in labor productivity and labour cost (Own computation)



- Labor productivity grew up until 2007/08 beyond which there appears to be a fluctuating trend
- Labour cost per worker has fallen broadly beyond 2001/02 and then it starts to raise 2013/14

## Growth in labour productivity and labour (Own computation) - 1999/00 – 2014/15

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- ▣ Real Value added per worker = 3.1%
- ▣ Nominal Value added per worker = 10.5%
- ▣ Real labour cost per worker = -0.8%
- ▣ Nominal wage per worker = 12.5%

# Comparison of results

Paper title	Wages	Labour productivity (LP)
Basic Empirical Research on Productivity and Wage in Ethiopia Period: 2000/01 to 2011/12	Nominal wages in the manufacturing sector as a whole increased by about 16.4%	LP grew in real terms by 3.1%
Eastern Africa's manufacturing sector: Ethiopia country report Period: 2001/02 to 2010/11	<ul style="list-style-type: none"> <li>Labour cost increased at a rate of 15.7%</li> <li>ULC increased at annual average rate of 5.4%</li> </ul>	LP grew in real terms by 3.3%
5th Ethiopia Economic Update: Why so idle? Wages and Employment in a Crowded Labour Market	Average real labour costs have seen an increasing trend in recent years	Labour productivity gains (in real) have been observed in recent years
Light manufacturing in Africa: Targeted Policies to Enhance Private Investment and Create Jobs	Average monthly wage in Ethiopian manufacturing sector is ¼ that of China and 1/2 that of Vietnam	LP in Ethiopia is generally low but relatively higher in some well-managed firms is comparable to that of Vietnam and is half that of China
4 <sup>th</sup> Ethiopia Economic Update: Overcoming constraints in the manufacturing sector  Enterprise Survey, 2011	Wages in Ethiopia are low: The median firm reports labour costs of (per worker per year): USD 1,100 in Ethiopia, USD 1,800 in China, USD 8,000 in South Africa.	<ul style="list-style-type: none"> <li>Labour productivity in Ethiopia is USD 4,900 compared to China (USD 15,000)</li> <li>Ethiopia remains far below well performing middle income countries</li> </ul>

# Data issues

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- CSA Large and medium manufacturing data
  - Lags behind in data preparation (the latest 2014/15)
  - Volatility and inconsistency (we are still examining the data)
  - Lack of data in hours
- Data used in the papers
  - Difference in data source, sample size
  - Exclusion of seasonal and temporary workers – underestimates labour productivity
- Real appreciation of birr
  - Labor productivity may grow faster in current USD terms – International comparison
- Lack of data in physical quantities



# Concluding remarks

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- ❑ Available evidence suggest that, on average, both labor productivity and cost of labor increased.
- ❑ Trends of labor cost
  - Average labor cost increased in recent years
  - But, still, Ethiopia has the lowest wages compared to comparators
  - The trend followed by wages may in part be explained by labor productivity.
- ❑ Labor productivity
  - LP of the manufacturing sector grew in real terms
  - LP is significantly higher in *well-managed* Ethiopian firms

# Implications to competitiveness

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- ❑ Low wages in Ethiopia in international comparison indicates its wage advantage to attract investors.
- ❑ An increasing trend of ULC implies loss of competitiveness
- ❑ Average labour cost grew substantially faster than labour productivity suggesting that the manufacturing sector is losing its competitiveness in terms of labour cost.
- ❑ Ethiopia is lacking in comparative advantage even in some of the priority industries

# Suggestions

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- ❑ To ensure cost competitiveness, Ethiopia should keep its wage advantage
  - Ethiopia should make sure the growth of labor productivity is consistent with wage increases
  - Wage setting policy
- ❑ Wages and productivity movements should be regularly monitored
  - Ethiopia needs to systematically collect data on productivity and wages periodically
- ❑ A study on productivity and wages would be important as the next step towards promoting QPC.
  - This will be useful for policy makers to have shared information and deeper understanding on the concept and practice of wage-productivity nexus.

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Thank you!

# References

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- ❑ Basic Empirical Research on Productivity and Wage in Ethiopia (JICA, 2015)
- ❑ Eastern Africa's manufacturing sector: Ethiopia country report (African development bank, 2014)
- ❑ Light manufacturing in Africa: Targeted Policies to Enhance Private Investment and Create Jobs (World Bank, 2012)
- ❑ 4<sup>th</sup> Ethiopia Economic Update: Overcoming constraints in the manufacturing sector (World Bank, 2015)
- ❑ 5<sup>th</sup> Ethiopia Economic Update: Why so idle? Wages and Employment in a Crowded Labor Market (World Bank, 2016)