III. Labour & Epidemics

Working conditions as a cause of COVID-19

EE406: Contemporary Economic Issues
Semester 1/2020
Faculty of Economics, Thammasat University

Before and after the Industrial Revolution

On working conditions

Workers on the line

- What is it like to work in a factory?
- How is work on a production line organized?
- Who decides the kind of conditions under which factory goods are produced?
- Who decides how profits are distributed?
- How can factory workers influence working conditions, wages, and hours of labor?

Before the capitalist revolution

- British economy was based on the cottage industry or domestic system
- The main industry (cotton & woolen) were organized in small units, spreading across the country
- Based on families that spun and wove cotton & wool in their homes
- Merchants would travel around, buying raw materials, delivering them to people who would work on them, and then collect to sell or ship to other markets
- Cottage industry was common in pre-industrial Britain – large proportion of population working in agriculture. Farmers often had both the time and desire to earn additional income during parts of the year (winter) when there was little farm work to do.

After the capitalist revolution

- From about 1780 to 1820 ....
- there was a gradual transformation of the British economy from an agrarian and maritime economy into an industrialised one, i.e. based on the factory system.

The Factory System

- The production process was concentrated in huge factories in Lancashire and Yorkshire.
- The factory became the main unit of this new system;
- A new discipline was imposed on workers with the mechanisation and the rational division of labour;
- mainly women and children were employed in the factories, where they worked up to 16 hours a day;

Major causes in the development of the Capitalist Revolution in England

1. Growth of population
2. Technological innovations :

    A)Use of a new form of energy – steam power

    B) Inventions of :

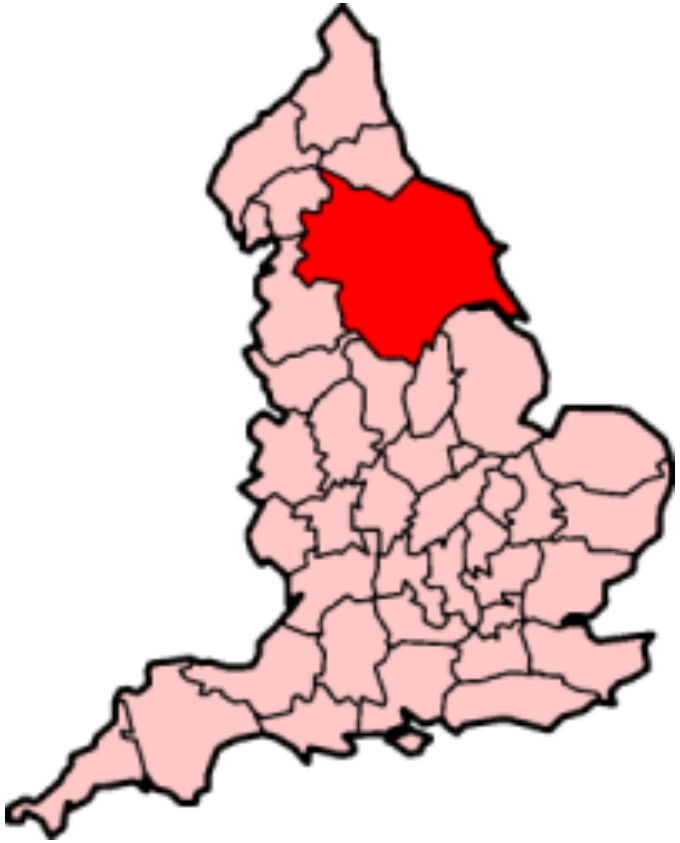
- steam engine (1769 – J. Watt patented a new steam engine more powerful and efficient than the preceding one)
- the spinning jenny, the spinning frame and then the water frame (machines used to transform raw materials such as linen or cotton into threads)
- the power loom (a machine used to transform/weave threads into cloth)

3. Great availability of coal (a new type of fuel used to operate the steam engine)

Consequences of the Industrial Revolution

- **Loss of thousands of jobs** – *Luddite Riots (1811-1812)*
- **Rise of a working class movement**
- **Transport Revolution:** (3,000 miles of canals built between 1760 and 1820)
- **Agricultural Revolution**
  - Enclosures of open fields and common land;
  - Introduction of new farming techniques;
  - Industrialisation of agriculture;
  - Migration of small farmers and farm labourers to factory towns;
- **Urbanisation**
  - *bad living conditions* for workers and their families;

Lancashire and Yorkshire



Factory system

- The factory system was a method of manufacturing first adopted in England at the beginning of the Industrial Revolution.
- Fundamentally, each worker created a separate part of the total assembly of a product, thus increasing the efficiency of factories.
- Workers, paid by wage, and machines were brought together in a central factory.
- All the processes of production would be carried out under one roof, and would continue as long as it was practical.
- The factory system was a new way of organizing labour made necessary by the development of machines which were too large to house in a worker's cottage.
- Working hours were as long as they had been for the farmer, that is, from dawn to dusk, six days per week.

Luddites

- The rapid industrialisation of the English economy cost many craft workers their jobs.
- The textile industry in particular industrialised early, and many weavers found themselves suddenly unemployed since they could no longer compete with machines which only required relatively limited (and unskilled) labour to produce more cloth than a single weaver.
- Many such unemployed workers, weavers and others, turned their animosity towards the machines that had taken their jobs and began destroying factories and machinery. These attackers became known as Luddites, supposedly followers of Ned Ludd, a folklore figure.
- The first attacks of the Luddite movement began in 1811. The movement began in Nottingham in 1811 and spread rapidly throughout England in 1811 and 1812.

Luddites

- Many wool and cotton mills were destroyed until the British government took drastic measures to protect industry and harshly suppressed the movement.
- For a short time the movement was so strong that it clashed in battles with the British Army. At one time, there were more British troops fighting the Luddites than Napoleon.
- Among the measures taken by the government to smash the movement there was also a mass trial in York in 1813 that resulted in many executions and transportations (removal to a penal colony). In particular 17 men were executed and many others were transported as prisoners to Australia.
- Shortly after 'Luddism' waned.

The Power loom

- The power loom was designed in 1784 by Edmund Cartwright and first built in 1785. It was a mechanized loom.
- It was one of the key inventions of the Industrial Revolution.
- It was initially limited by its reliance on water power, which required workshops equipped with power looms to be located near a source of running water.
- By the start of the 19th century, however, the steam engine enabled the use of power looms anywhere that steam power could be installed.
- The power loom allowed large amounts of cloth to be made in a shorter time than a human could do it.

Some of the 1200 power looms at the *Plevna* factory building, completed in 1877 , at the Finlayson & Co cotton mills in Tampere, Finland.

Spinning Jenny

- Model of the spinning jenny in a museum in Wuppertal, Germany.
- The spinning jenny was one of the innovations that started the industrial revolution.
- The spinning jenny is a multi-spool spinning wheel. It was invented circa 1764 by James Hargreaves in Stanhill, near Blackburn, Lancashire in the north west of England
- The device dramatically reduced the amount of work needed to produce yarn, with a single worker able to work eight or more spools at once.

James Watt's steam engine

A Watt steam engine, the steam engine that propelled the Industrial Revolution in Britain and the world.

Living conditions of the working class during the industrial revolution

- Many towns were created in the industrial areas of the North and the Midlands where more and more people arrived from the countryside in search of a job.

Intolerable overcrowding:

- houses were built back to back and side by side. They also lacked toilets, sewers and piped water.

Appalling living conditions :

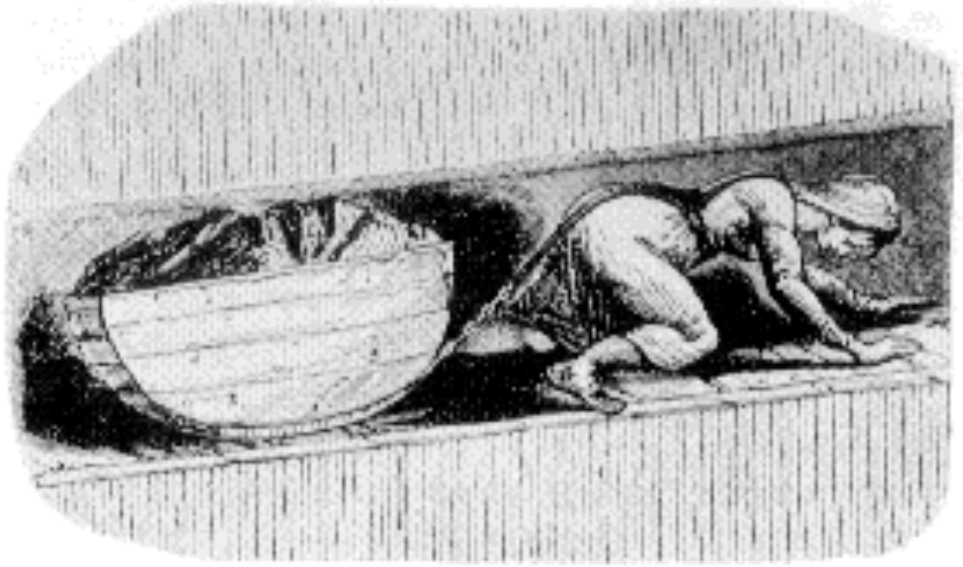
- many workers were so poor that they couldn't even afford to pay low rents so they lived in damp, airless cellars.

Easy transmission of infectious diseases:

- outbreaks of cholera and typhus were very common among the lower classes because of the very poor sanitary conditions they lived in.

Child labour exploitatic

A young "drawer" pulling a coal tub up a mine shaft



- The Industrial Revolution led to a population increase, but the chance of surviving childhood didn't improve throughout the industrial revolution.
- There was still limited opportunity for education, and children were expected to work.
- Employers could pay a child less than an adult even though their productivity was similar.
- There was no need for strength to operate an industrial machine,and since the industrial system was completely new there were no experienced adult labourers.

Child labour exploitation

- This made child labour the labour of choice for manufacturing in the early phases of the industrial revolution.
- Child labour had existed before the Industrial Revolution, but with the increase in population and education it became more visible.
- Before the passing of laws protecting children, many were forced to work in terrible conditions for much lower pay than their elders.
- Reports were written detailing some of the abuses, particularly in the coal mines and textile factories and these helped to popularize the children's plight.
- The public outcry, especially among the upper and middle classes, helped change the young workers' condition.

Child labour exploitation

- Politicians and the government tried to limit child labour by law, but factory owners resisted; some felt that they were aiding the poor by giving their children money to buy food to avoid starvation, and others simply welcomed the cheap labour.
- In **1833** and **1844**, the **first general laws against child labour**, the **Factory Acts**, were passed in England: children younger than nine were not allowed to work, children were not permitted to work at night, and the work day of youth under the age of 18 was limited to twelve hours.
- Factory inspectors supervised the execution of the law. About ten years later, the employment of children and women in mining was forbidden.
- These laws decreased the number of child labourers; however, child labour remained in Europe up to the 20th century.

Working condition & COVID-19

Many things have changed during COVID-19

- Talks about “new-normal”, “post-covid19 world”, etc…
- Should things change permanently?

Many things have changed during COVID-19

- Talks about “new-normal”, “post-covid19 world”, etc…
- Should things change permanently?
- Rubber bands vs. paper clips (Baldwin, 2020)
  - Non-hysteretic dynamics
  - Hysteretic dynamics

Four COVID-19 shocks (Baldwin, 2020)

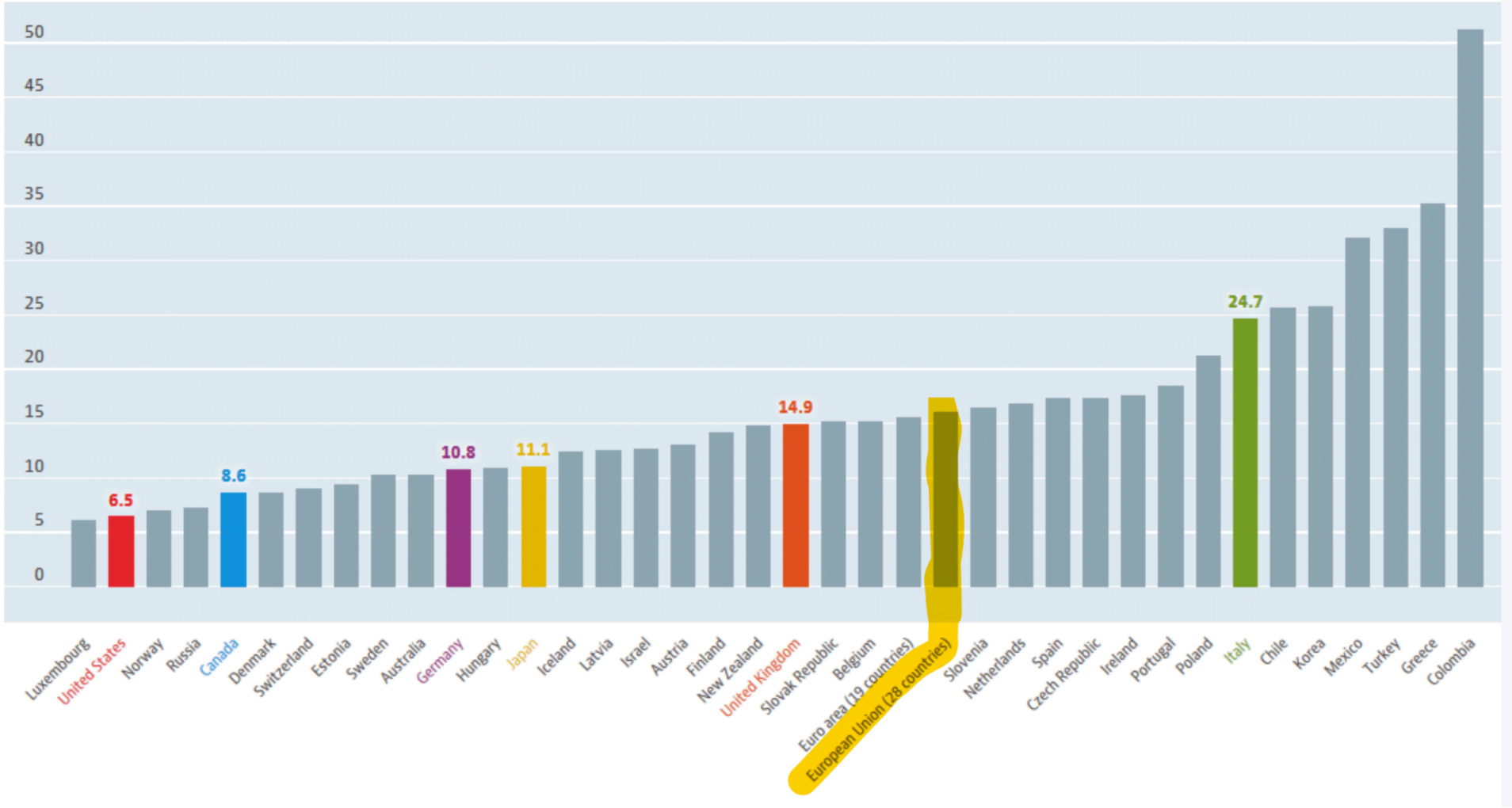
1. "Epic number of people have lost their job"
2. A large share of workers have learned to work remotely
3. Office spaces got more expensive due to social distancing and other anti-contagion requirements
4. More red ink is predicted for many quarters to come

Self-employment in the world

What can we observe?

	1990	2000	2005	2010
Australia	14.4	13.6	12.7	11.6
Austria	14.2	13.1	13.3	13.8
Belgium	18.1	15.8	15.2	14.4
Canada	9.5	10.6	9.5	9.2
Chile	..	29.8	30.4	26.5
Czech Republic	..	15.2	16.1	17.8
Denmark	11.7	8.7	8.7	8.8
Estonia	..	9.1	8.1	8.3
Finland	15.6	13.7	12.7	13.5
France	13.2	9.3	9.1	..
Germany	..	11.0	12.4	11.6
Greece	47.7	42.0	36.4	35.5
Hungary	..	15.2	13.8	12.3
Iceland	..	18.0	14.2	12.6
Ireland	24.9	18.8	17.7	17.4
Israel	..	14.2	13.1	12.8
Italy	28.7	28.5	27.0	25.5
Japan	22.3	16.6	14.7	12.3
Korea	39.5	36.8	33.6	28.8
Luxembourg	9.1	7.4	6.5	..
Mexico	31.9	36.0	35.5	34.3
Netherlands	12.4	11.2	12.4	..
New Zealand	19.8	20.6	18.3	..
Norway	11.3	7.4	7.4	7.7
Poland	27.2	27.4	25.8	22.8
Portugal	29.4	26.0	25.1	22.9
Slovak Republic	..	8.0	12.6	16.0
Slovenia	..	16.1	15.1	17.3
Spain	25.8	20.2	18.2	16.9
Sweden	9.2	10.3	9.8	10.9
Switzerland	..	13.2	11.2	..
Turkey	61.0	51.4	43.0	39.1
United Kingdom	15.1	12.8	12.9	13.9
United States	8.8	7.4	7.5	7.0
EU27 total	..	18.3	17.3	..
OECD total	..	17.7	16.8	..
Russian Federation	..	10.1	7.8	6.9

Situation in 2015



Self-employment and choice

- In general, self-employment rates are highest in countries with low per capita income although Italy, with a self-employment rate of around 25.5%, is an exception. Ireland and Spain also combine high per capita incomes and high self-employment rates
- Suggest that we should also think of self-employment in terms of lack of employment opportunity
- *What is the self-employment rate in Thailand?*

Evans & Jovanovic (1989)

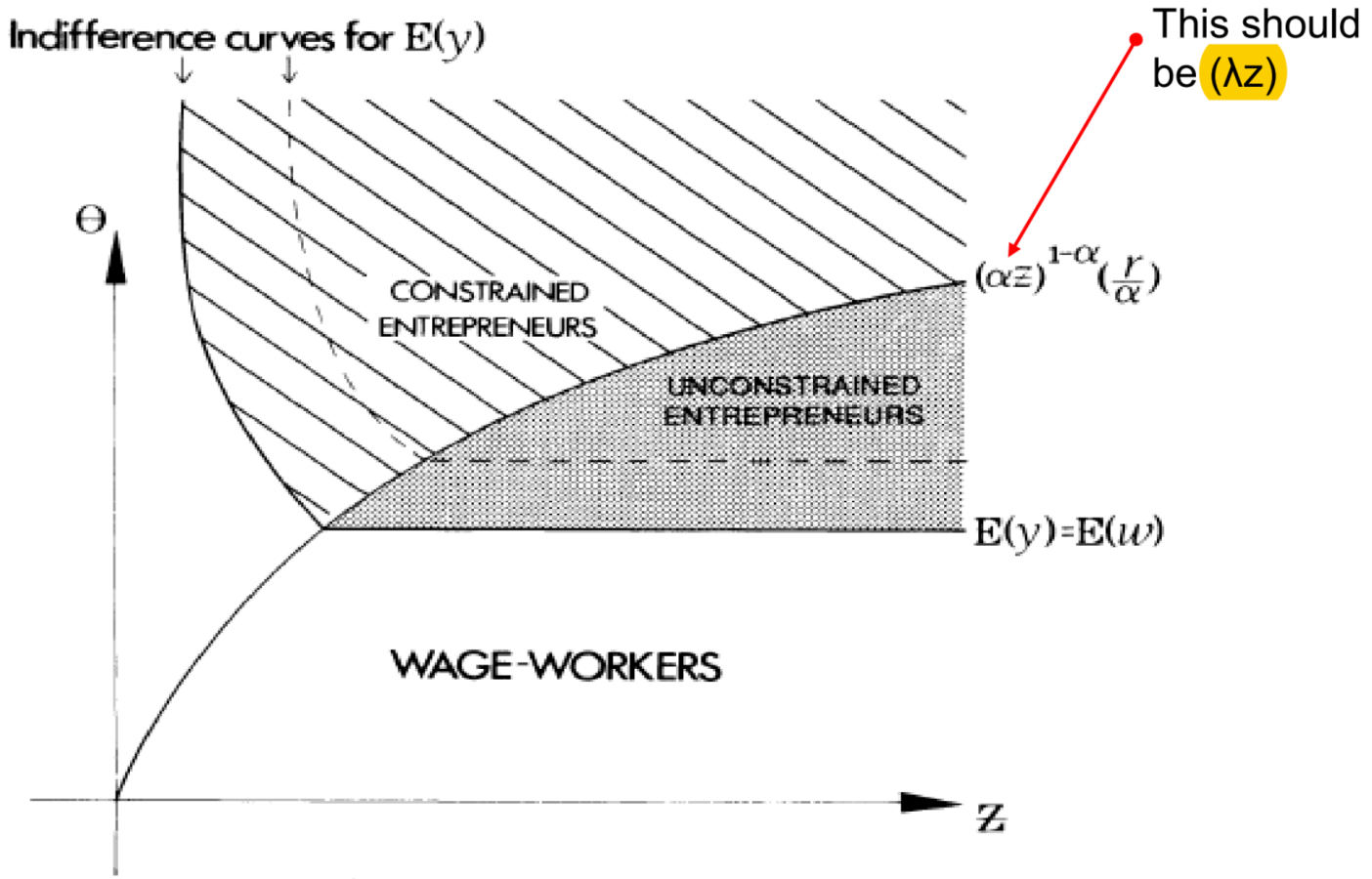


FIG. 1.—Nature of the selection into entrepreneurship

Impact of COVID-19 on informal workers

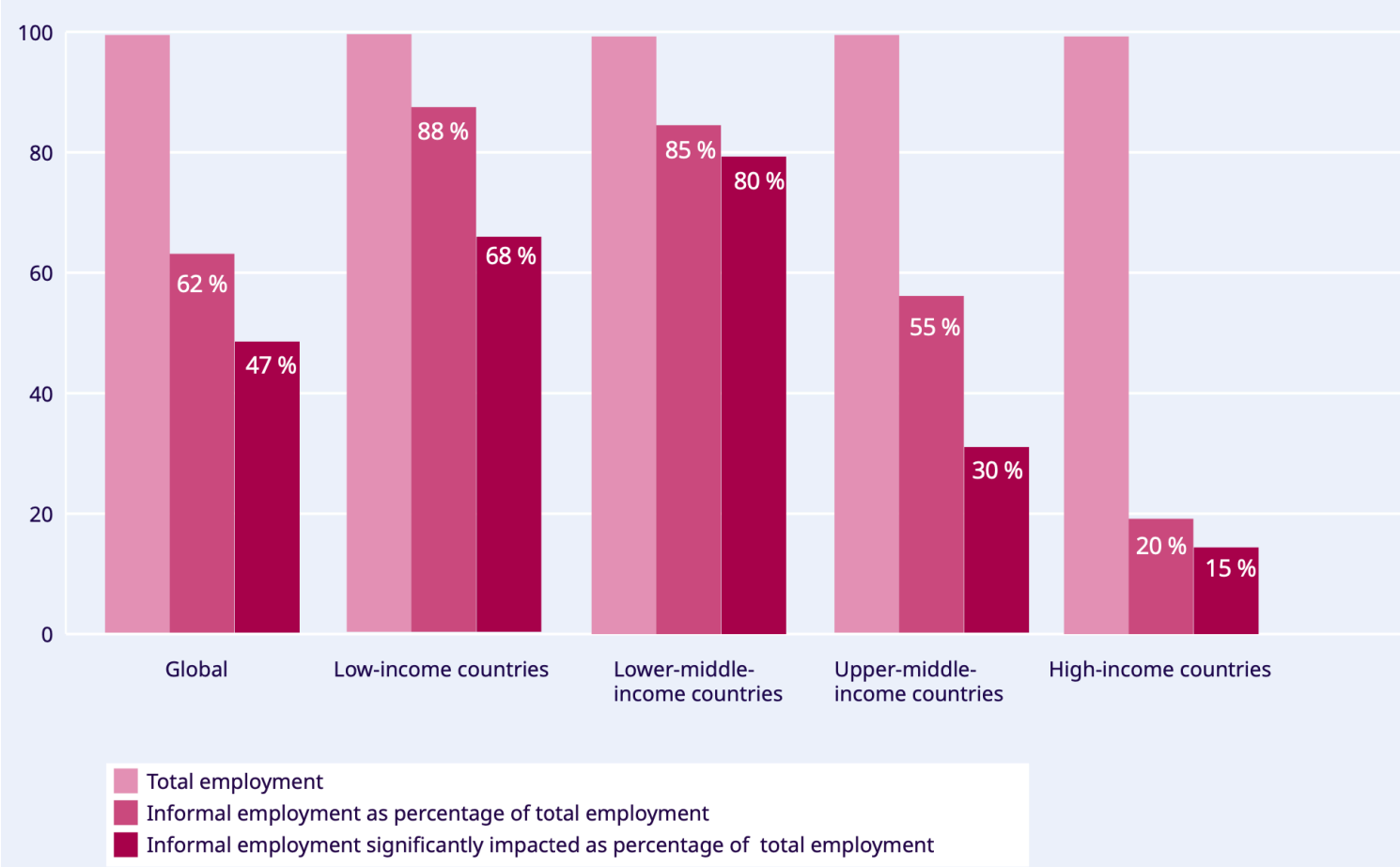
- Informal workers, whether wage workers or self-employed, are among the groups most at risk of losing their jobs and incomes.
- *Why?*
- International Labour Organization (ILO) estimates an increase of 5.3 million ("low" scenario) and 24.7 million ("high" scenario) in unemployment from a base level of 188 million in 2019 because of the current crisis (ILO, 2020)

Impact of COVID-19 on informal workers

- Informal workers in the agriculture and food supply sector are at risk of losing their jobs due to the COVID-19 pandemic, even though these are considered essential systems that should remain operational.
- The strict quarantines and the closure of roads disrupt logistics, which may hurt micro and small intermediaries in aggregation and distribution.

		Baseline employment situation (global estimates for 2020 prior to COVID-19)				
Economic sector	Impact of crisis on economic output	Employers (millions)	Own-account workers (millions)	Share of own-account workers in total employment (%)	Share of employed in firms with 2–9 employees in total employment (%)	Share of employed in firms with 10+ employees in total employment (%)
Wholesale and retail trade; repair of motor vehicles and motorcycles	High	21	211	45	25	30
Manufacturing	High	12	99	19	15	66
Accommodation and food services	High	7	44	29	29	41
Real estate; business and administrative activities	High	7	35	21	23	56
Arts, entertainment and recreation, and other services	Medium-high	4	57	30	31	39
Transport, storage and communication	Medium-high	4	76	31	19	50

		Baseline employment situation (global estimates for 2020 prior to COVID-19)				
Economic sector	Impact of crisis on economic output	Employers (millions)	Own-account workers (millions)	Share of own-account workers in total employment (%)	Share of employed in firms with 2–9 employees in total employment (%)	Share of employed in firms with 10+ employees in total employment (%)
Construction	Medium	9	103	38	26	36
Financial and insurance services	Medium	1	3	6	11	83
Mining and quarrying	Medium	<1	3	28	14	58
Agriculture, forestry and fishing	Low-medium	19	470	55	30	15
Human health and social work activities	Low	2	11	7	14	79
Education	Low	1	7	5	14	81
Utilities	Low	<1	3	10	13	77
Public administration and defence; compulsory social security	Low	<1	0	2	8	90



Note: Based on the analysis of national household survey data from 129 countries representing 90 per cent of global employment. Extrapolated to 2020 global employment and by sector. Total employment (represented in light purple) is used as the base of reference (100 per cent) for each income group of countries. Total informal employment is represented in light purple (2 billion informal economy workers). Informal economy workers significantly impacted by the crisis are represented in dark purple (1.56 billion in total). These significantly impacted workers are in countries with workplace closures and/or work in at-risk sectors. See Technical annex 2. The proportion of informal workers significantly affected is given by comparing the light and dark purple areas. Information by sectors classified by level of risk and size of enterprises available in table A3.

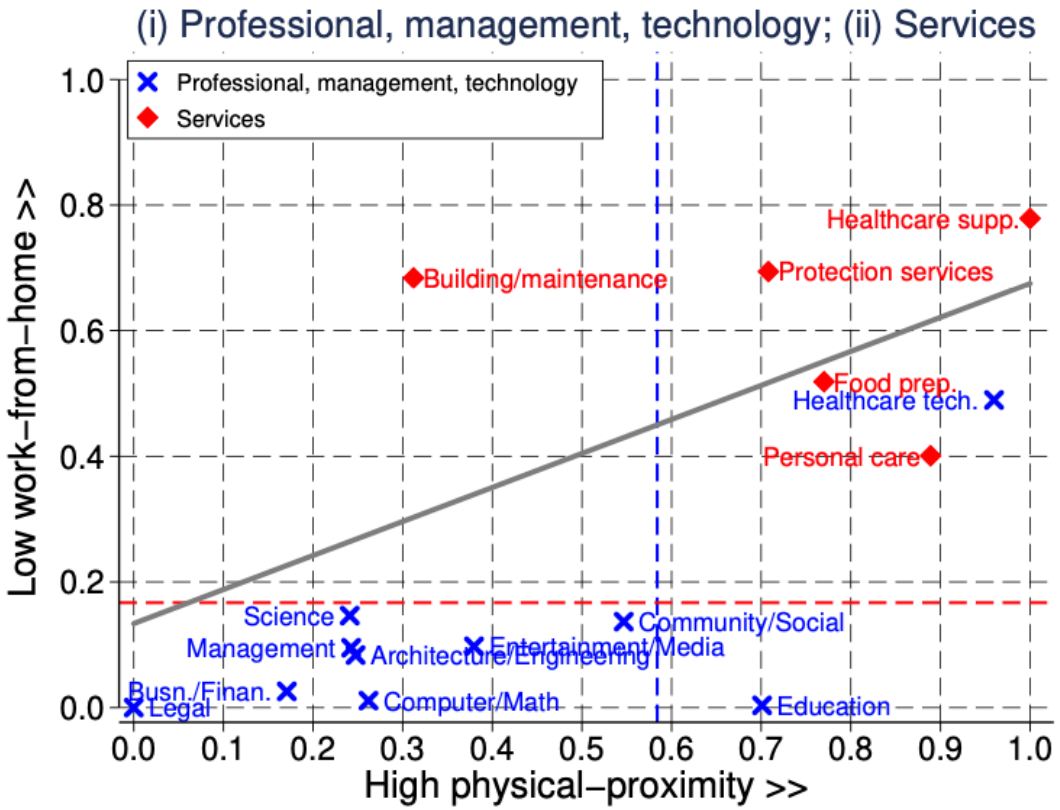
Implication of social distancing

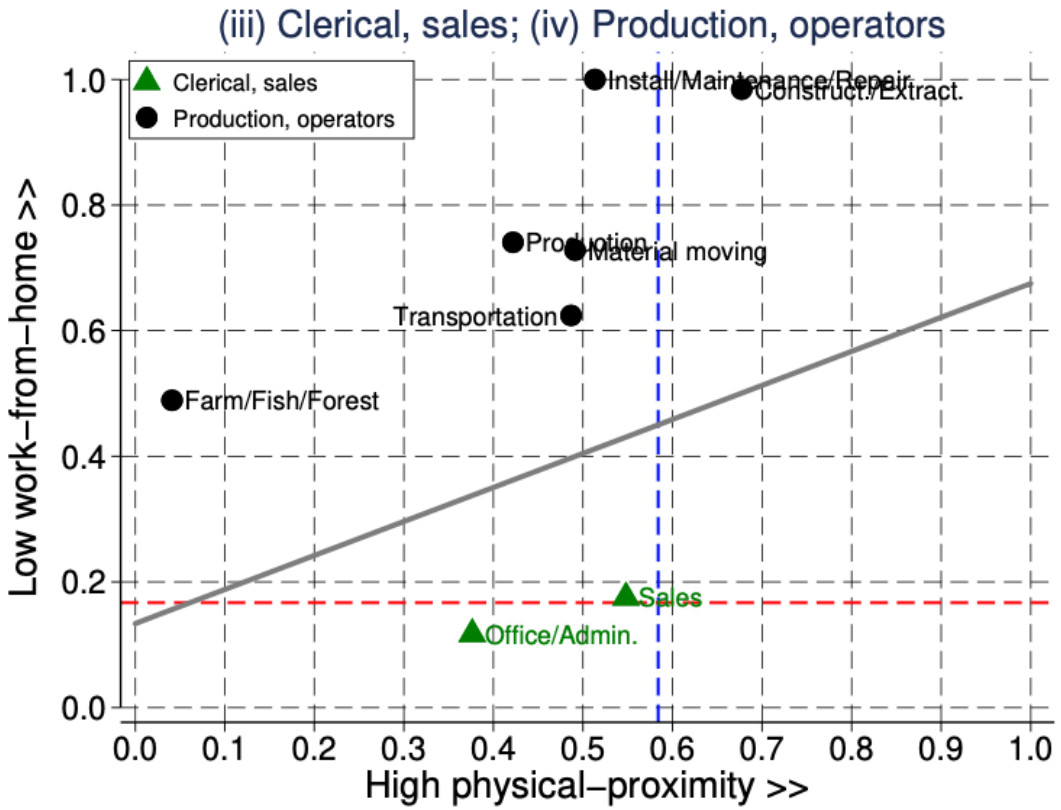
- "Social distancing" demands that workers be working from home if feasible
- Different occupations offer different possibilities of "work from home"
  - Workers are heterogeneously affected
- Mongey et al. (2020) looked specifically at the data in the case of the US

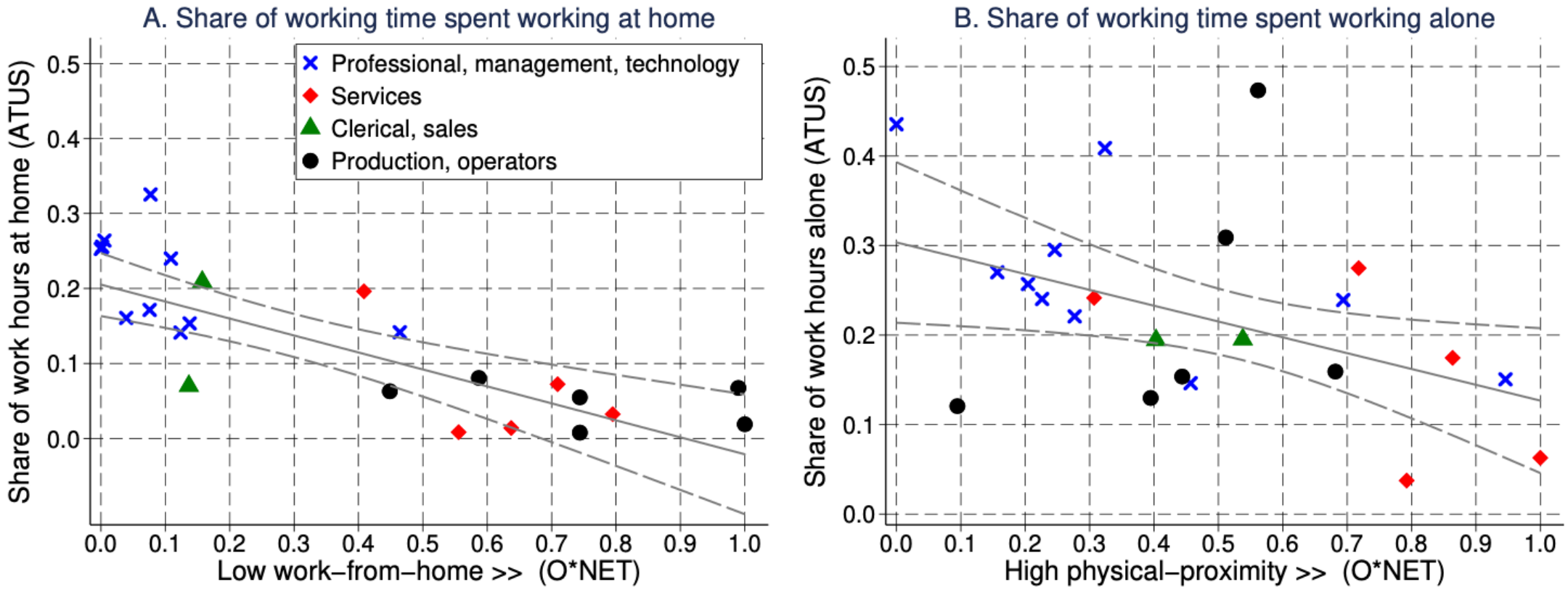
Mongey, Pilossoph, and Weinberg (2020)

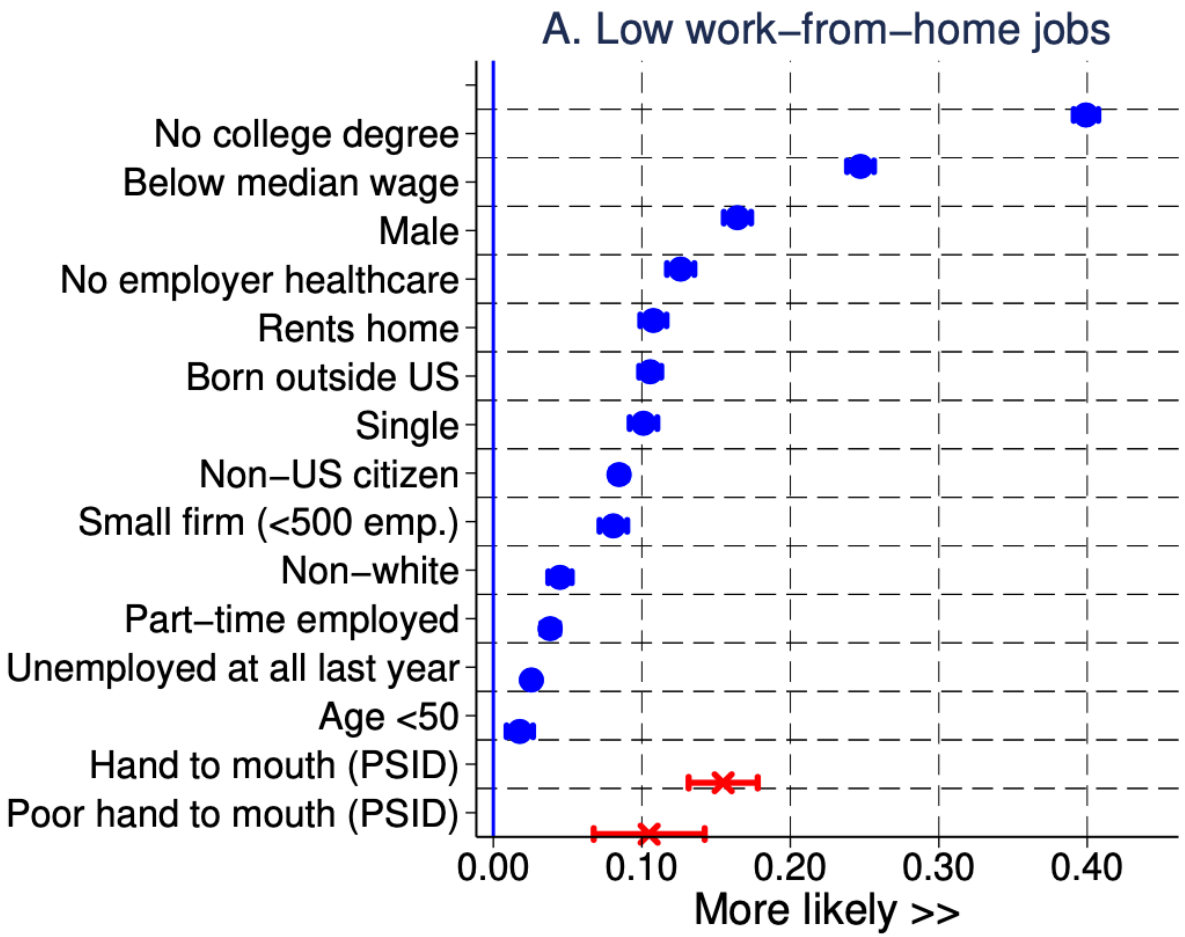
Findings

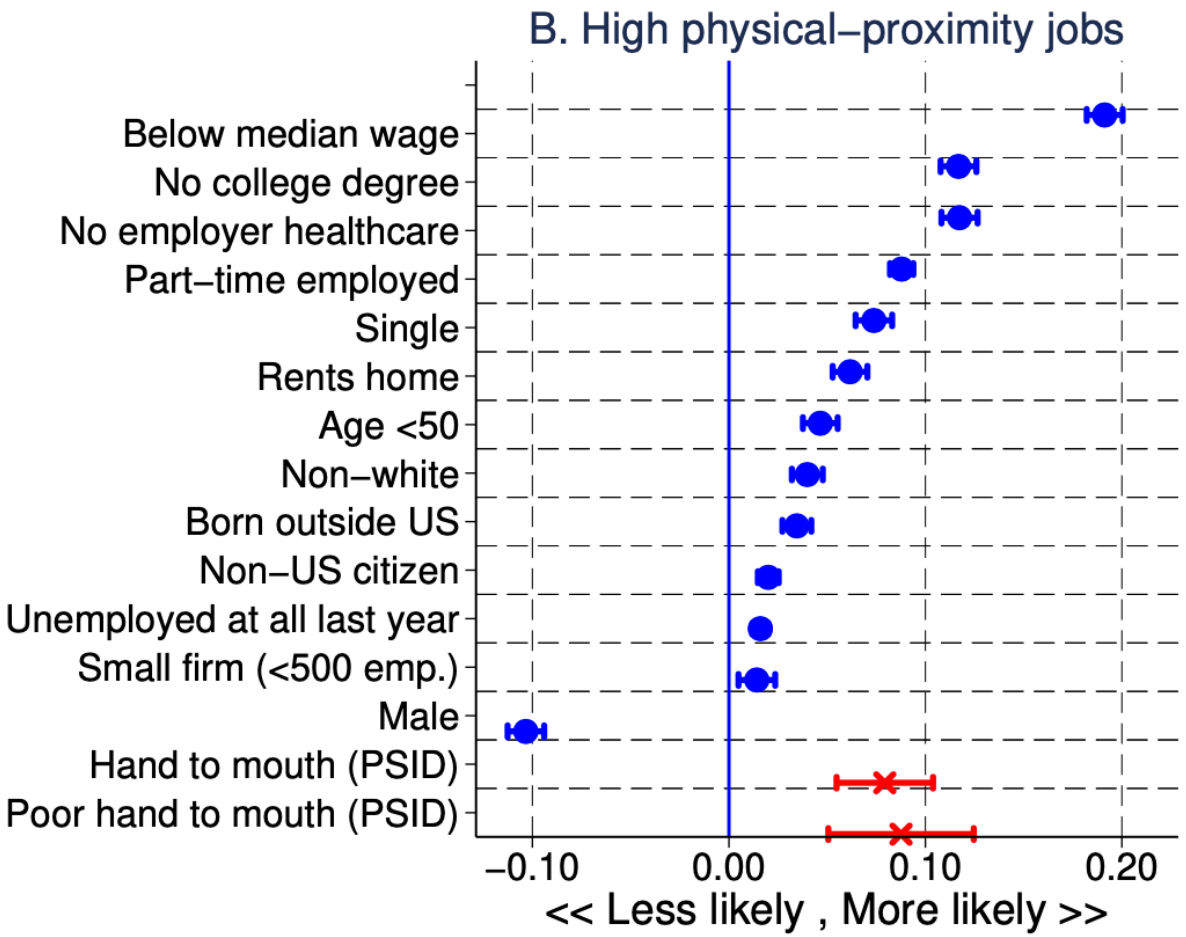
1. Workers that are more likely to be affected by work from home orders are those that are more economically vulnerable
   - Less likely to have a college degree and health insurance
   - Less likely to be white, or work for large firms, and less likely to be born in the US
2. Those that are less able to work from home also have lower level of liquidity
3. Heterogeneous effects within: those having to work in close proximity
   - Economic costs of social distancing is tightly related to pre-pandemic economic status


(i) Professional, management, technology; (ii) Services
Professional, management, technology
Services
Low work–from–home >>
High physical–proximity >>
Healthcare supp.
Building/maintenance
Protection services
Food prep.
Healthcare tech.
Personal care
Science
Management
Architecture/Engineering
Entertainment/Media
Community/Social
Busn./Finan.
Legal
Computer/Math
Education

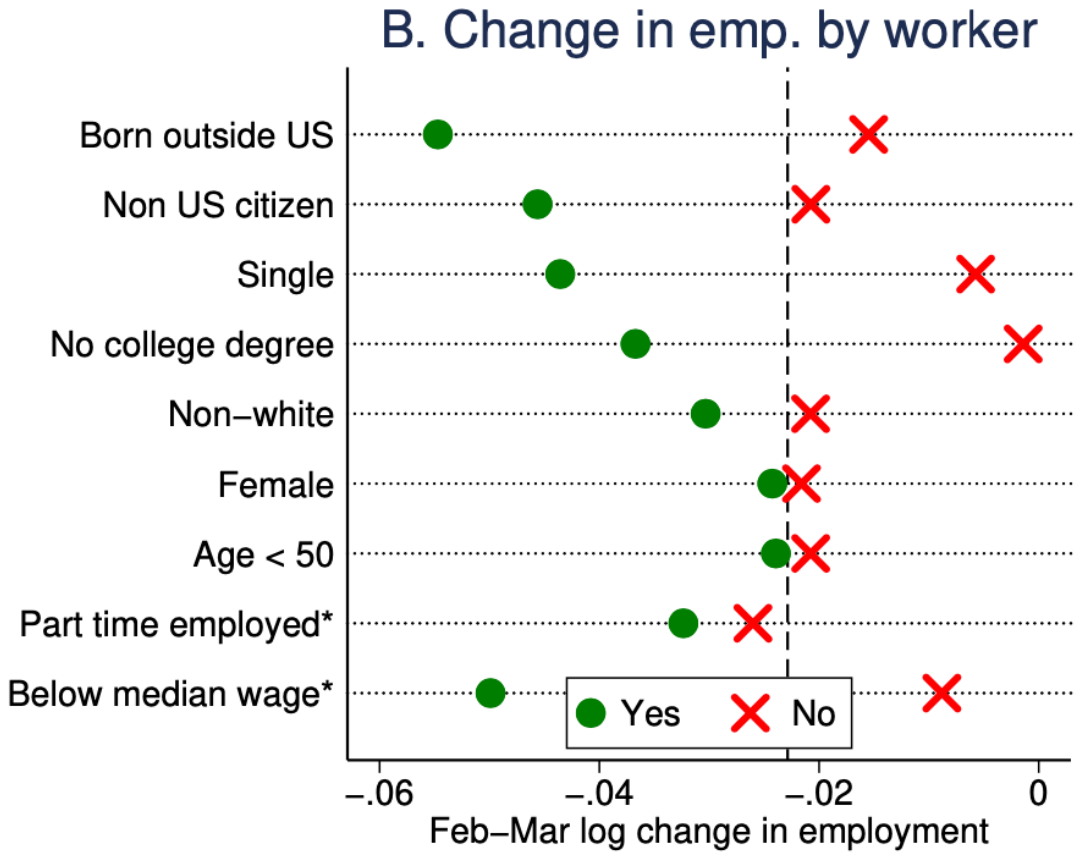

(iii) Clerical, sales; (iv) Production, operators
Clerical, sales
Production, operators
Low work–from–home >>
High physical–proximity >>
Install/Maintenance/Repair
Construct./Extract.
Production
Material moving
Transportation
Farm/Fish/Forest
Sales
Office/Admin.


A. Share of working time spent working at home
Professional, management, technology
Services
Clerical, sales
Production, operators
Share of work hours at home (ATUS)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Low work–from–home >> (O*NET)
B. Share of working time spent working alone
Share of work hours alone (ATUS)
High physical–proximity >> (O*NET)


A. Low work–from–home jobs
No college degree
Below median wage
Male
No employer healthcare
Rents home
Born outside US
Single
Non–US citizen
Small firm (<500 emp.)
Non–white
Part–time employed
Unemployed at all last year
Age <50
Hand to mouth (PSID)
Poor hand to mouth (PSID)
0.00
0.10
0.20
0.30
0.40
More likely >>


B. High physical–proximity jobs
Below median wage
No college degree
No employer healthcare
Part–time employed
Single
Rents home
Age <50
Non–white
Born outside US
Non–US citizen
Unemployed at all last year
Small firm (<500 emp.)
Male
Hand to mouth (PSID)
Poor hand to mouth (PSID)
–0.10
0.00
0.10
0.20
<< Less likely , More likely >>

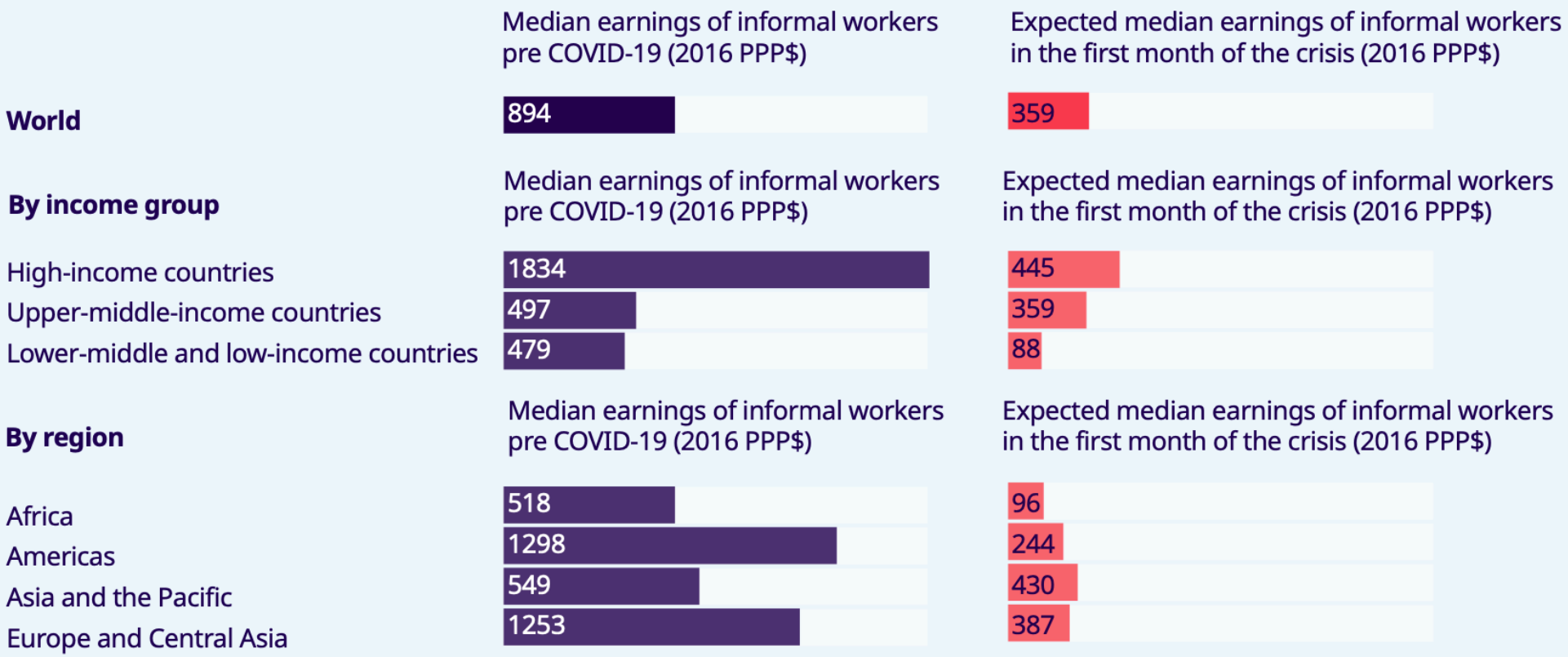
Employment declines by occupations and worker characteristics (feb-mar 2020)



Global picture?

- 68% of the world's workforce: 81% of employers, and 66% of own-account workers are living in countries with recommended or required workplace closures
- Leaving them in high risks of insolvency (ILO, 2020a)
- More than 2 billion people worldwide work in the informal economy
  - For many of them, working from home means losing their job, and without wage, they cannot eat
- Workers and enterprises in the informal sector are therefore the most vulnerable.
  - Women are over-represented in the high-risk sectors

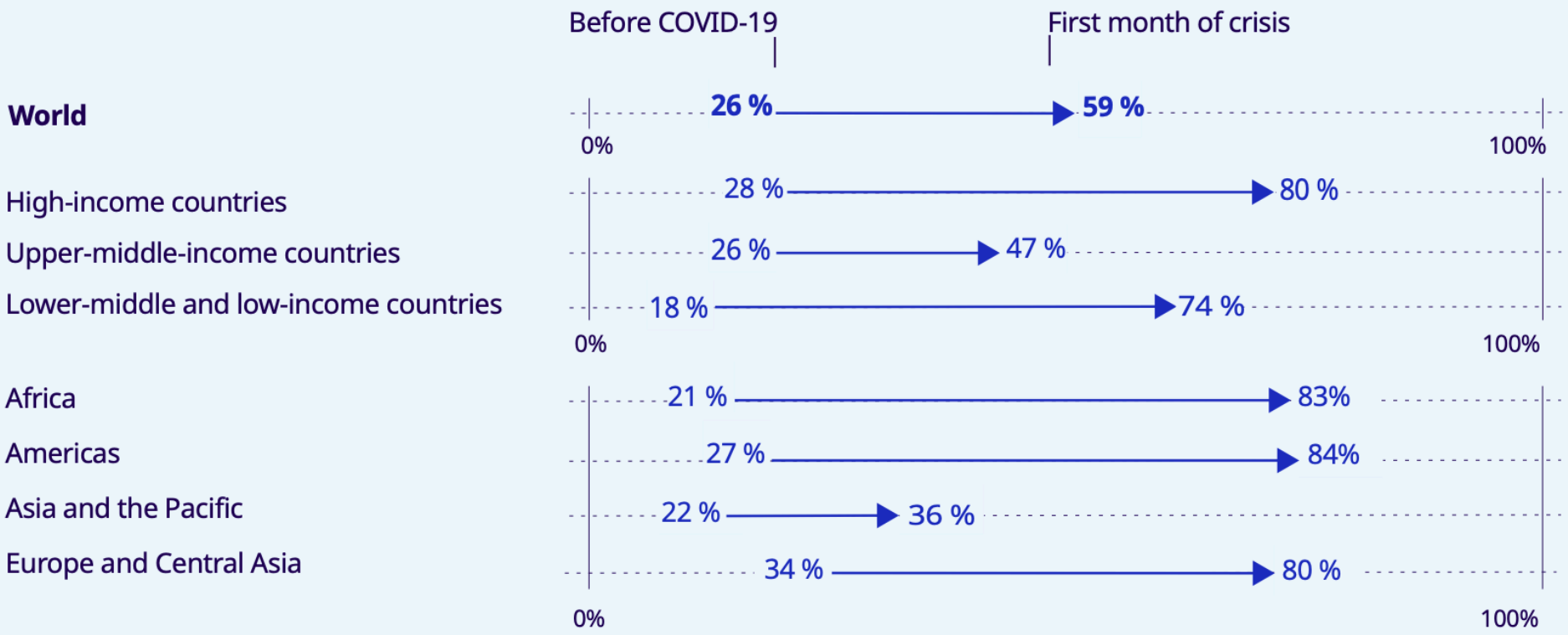
Figure 4.
Potential impacts of the pandemic on earnings of informal workers



Note: Estimates are based on weighted averages from 64 countries with data collected on a time interval between 2016 to 2019. Earnings include earnings from own-account workers, employers self-reported earnings and wages of wage employees. The estimates exclude unpaid family workers who are not usually asked to declare monetary earnings. Whenever possible, estimates include earnings from jobs other than the main job. The original local currency values have been converted to constant 2016 PPP dollars. The countries covered represent 65 per cent of the world's employees and include the economies with the largest population in each region. No data is available for Arab economies.

Potential impacts of the pandemic on poverty levels of informal workers

Expected rise in relative poverty rates of informal workers



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