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# The decline in manufacturing, charted

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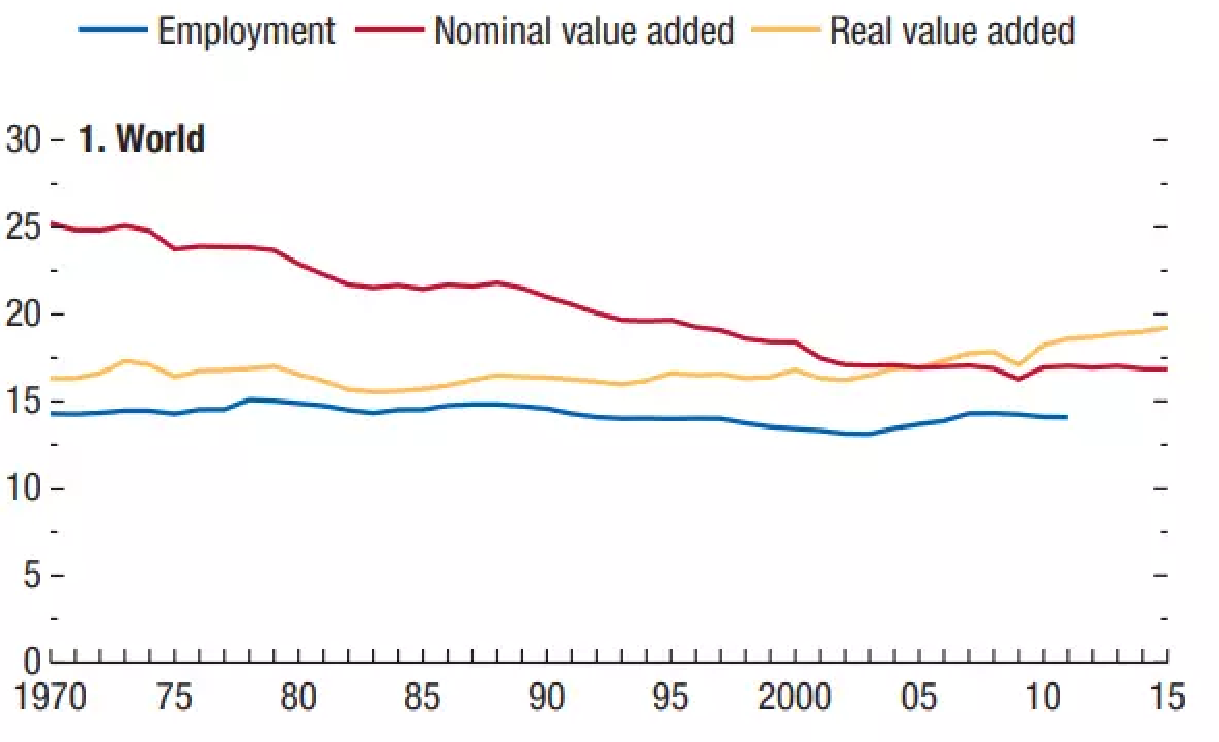
By: Jamie Powell

The International Monetary Fund (IMF) released a report (https://t.co/etAmeSO8KS) last week examining the historical trend in manufacturing work, and wider links to productivity and inequality.

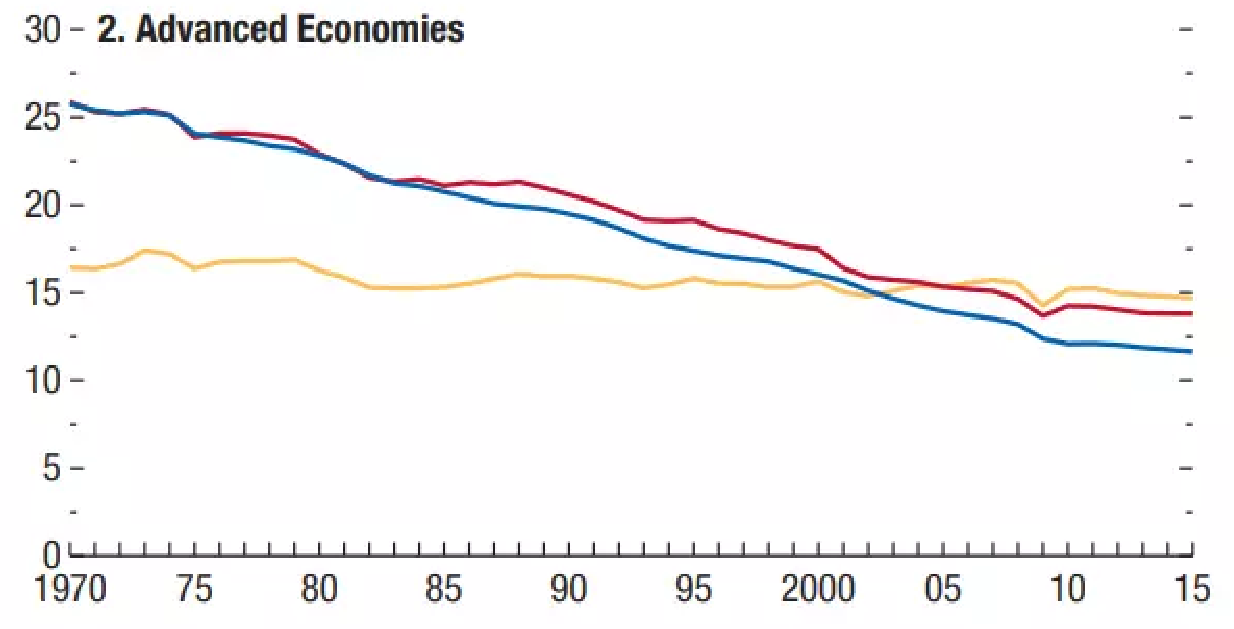
Below are few charts from the report, which encapsulate some of the more surprising outcomes.




First off the bat, manufacturing as a percent of global employment and output has held steady at around 14 per cent since the 1970s, and real value added has even increased slightly over the 35-year period.

This matters because -- for those of you who have been living in isolation -- recent political history has led to fresh consternation (https://www.bloomberg.com/news/articles/2014-04-28/why-factory-jobs-are-shrinking-everywhere) over the decline of manufacturing in Western economies. Much of that concern has focussed on the shrinking (https://www.nytimes.com/2017/04/24/business/economy/middle-class-united-states-europe-pew.html) power of a once-affluent middle class that traditionally occupied these roles.

In advanced economies (AE), the data do broadly support this narrative:

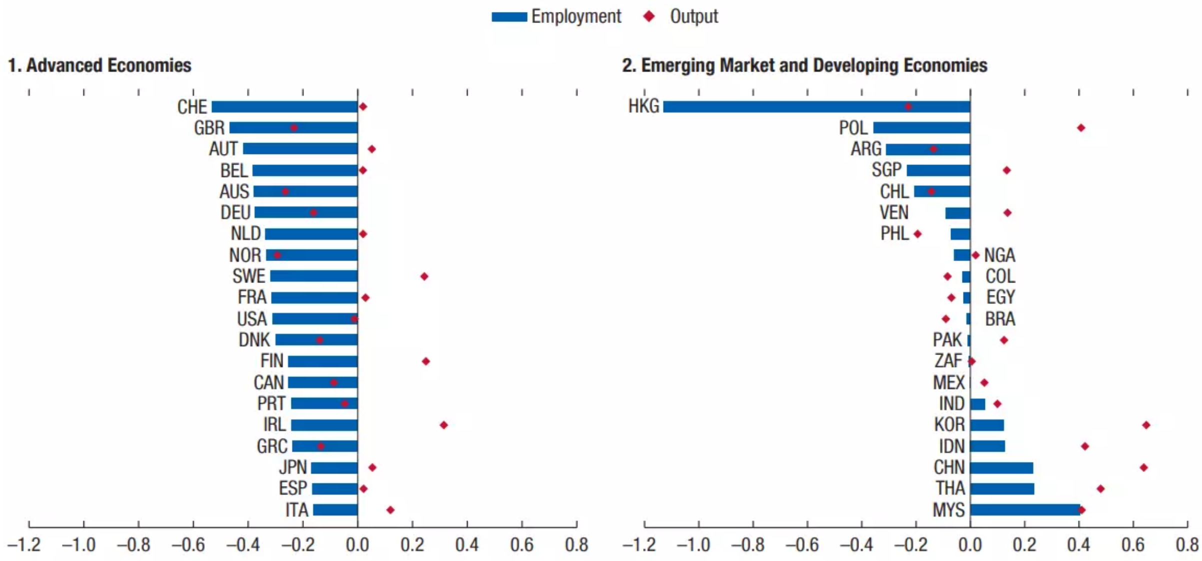



So if AEs' manufacturing bases have declined, and global manufacturing employment has held steady, it is must be true that emerging and developing markets have taken these jobs right?

Not exactly. A good chunk of the 20 largest emerging market economies have also suffered over the past 35 years. Declining manufacturing employment in countries such as Poland, Hong Kong and Argentina has been offset by rising employment in countries like Malaysia, Thailand, and of course China:

**Figure 3.5. Estimated Trends in Manufacturing Employment and Output Shares, 1960–2015**
*(Percentage points per year)*

While the share of manufacturing jobs in aggregate employment has declined in all advanced economies and many developing economies since 1970, changes in the output share have been more diverse, and a few economies registered sizable increases in both their manufacturing employment and output shares.



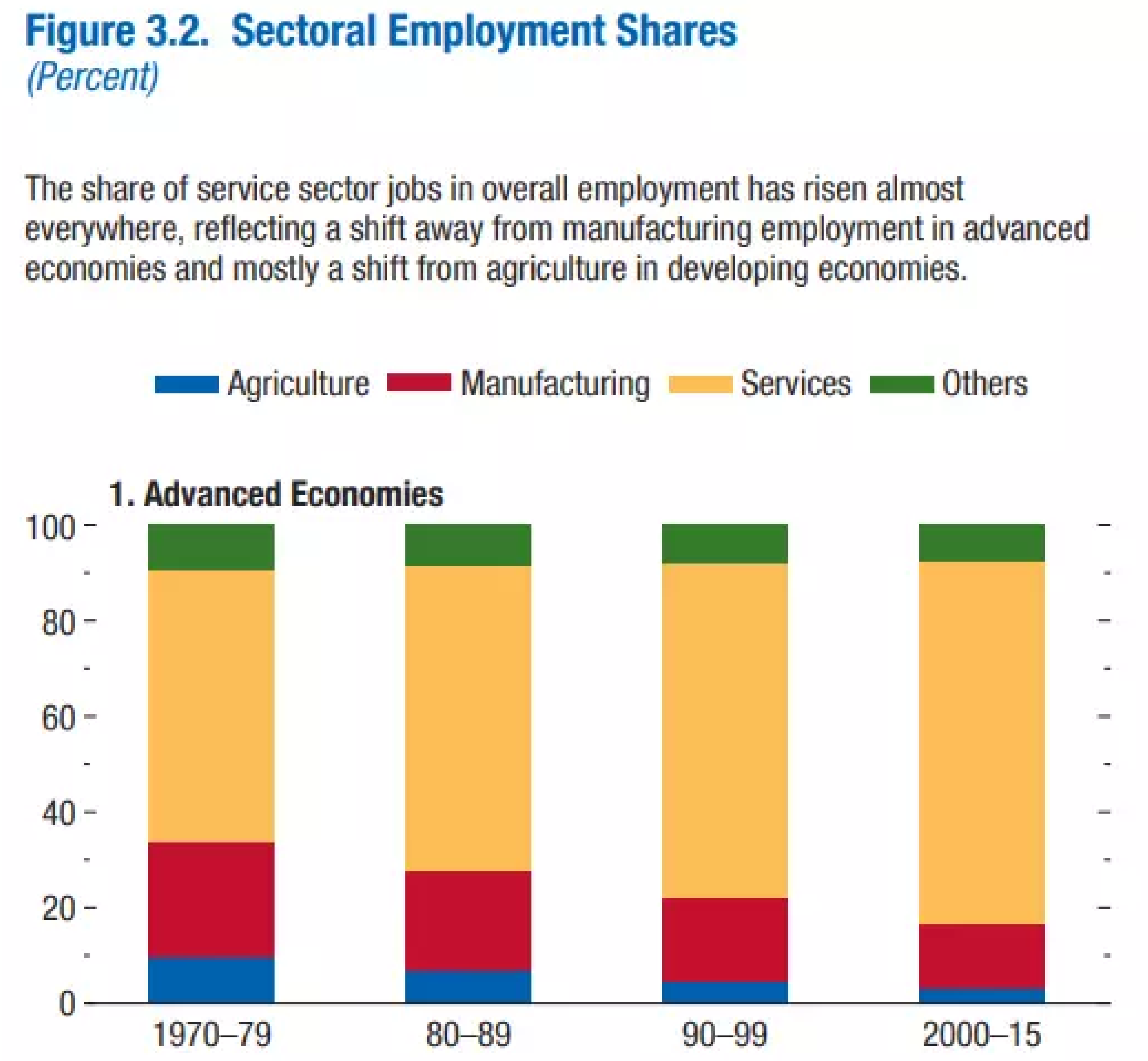

Source: IMF staff calculations.
Note: The figure shows the average annual growth rate in manufacturing employment and real-value-added shares during 1960–2015 (depending on data availability) for the 20 largest advanced and emerging market and developing economies ranked by 2015 GDP in US dollars at market exchange rates. Data labels use International Organization for Standardization (ISO) country codes.

What is clear from the data is the lack of correlation between manufacturing output and the manufacturing's *share of the labour market*. In the UK, for instance, manufacturing employment has declined over 0.4 per cent per year since 1960, in sync with a drop in manufacturing's share of output.

In contrast, Sweden and Finland's manufacturing sectors experienced both job losses and a *rising* output share. This suggests that other factors, such as local industrial policy (https://tem.fi/documents/1410877/3437254/Manufacturing+as+part+of+a+vital+enterprise+structure+11022014.pdf) and adoption of new technologies, are important in maintaining a healthy manufacturing base.

It is also notable that Mexico, which is currently locked in a tussle (https://www.ft.com/content/9c49498e-3e33-11e8-b9f9-de94fa33a81e) with the Trump administration over its alleged role in 'stealing' jobs from America, recorded no gains in manufacturing's share of employment since 1960.

As manufacturing has declined in importance in advanced economies, services have come to rule the roost:

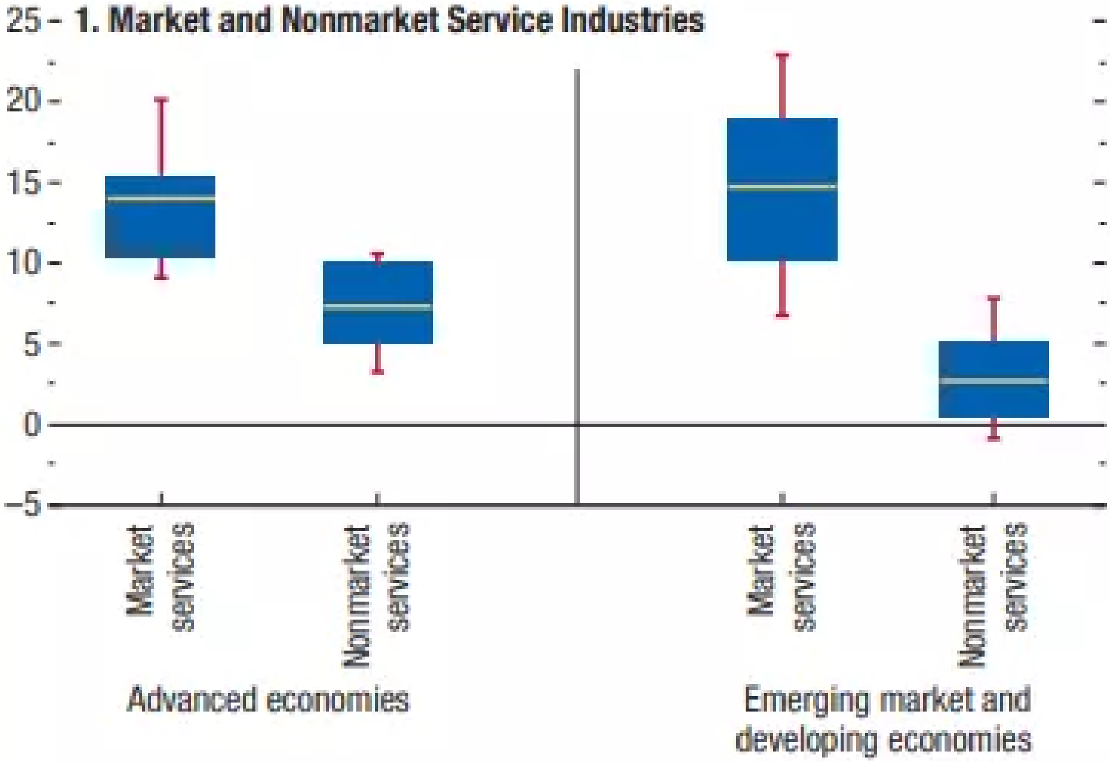


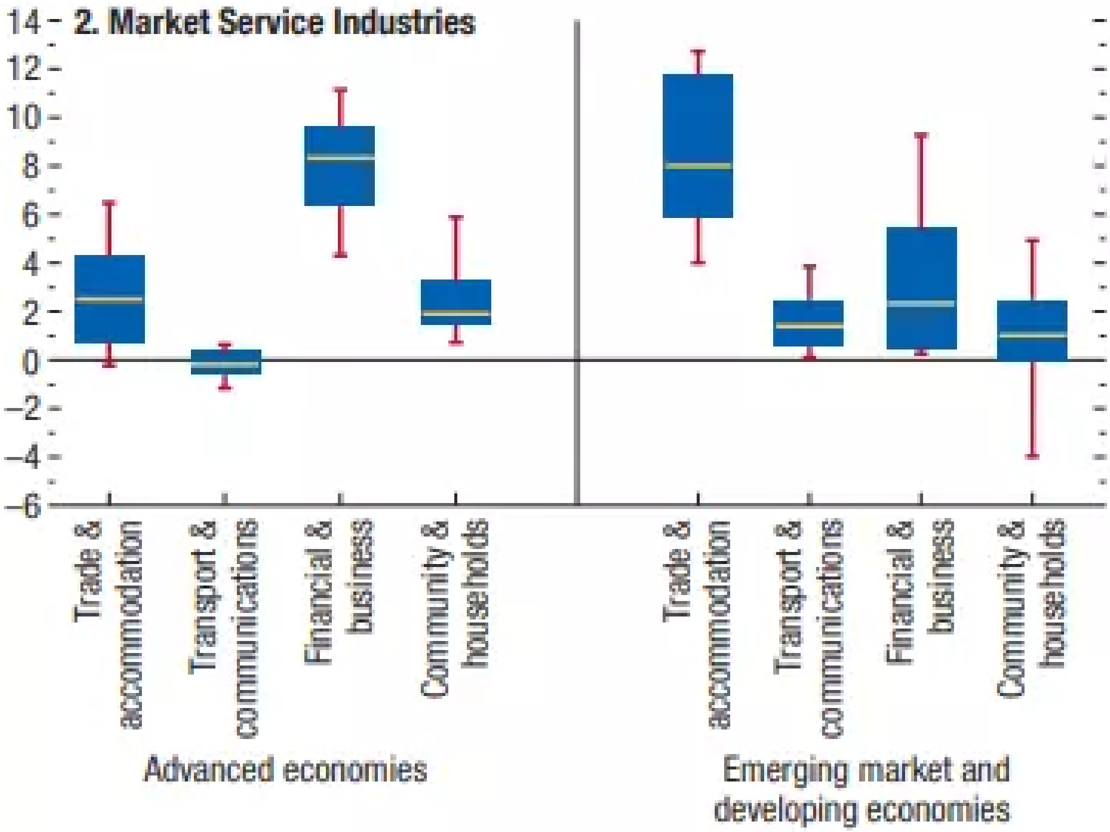

Out of the 16-per-cent gain that services have recorded in advanced economies, around two-thirds is attributable to market services such as finance and telecoms, with the rest made up of non-market services such as government, health and education (right click the image below to open it in a new tab):

## Figure 3.12. Change in Services Employment Share, 1970–2015

*(Cumulative change, percentage points)*

Market services account for about two-thirds of the overall expansion in service employment since 1970 in advanced economies, and more than 80 percent in developing economies.



Source: IMF staff calculations.
Note: The figure shows the cross-country distribution of the cumulative change in the employment share of individual service industries between the average in the 1970s and the average during 2000–15. The horizontal line inside each box represents the median; the upper and lower edges of each box show the top and bottom quartiles; and the red markers denote the top and bottom deciles. Nonmarket services consists of government; education; and health. All other service industries are market services. See Annex 3.1 for a list of sectors, individual industries, and abbreviations.

Explanations (http://www.nber.org/papers/w14822) of the growth in services over the past forty years traditionally revolve around product demand (such joys as eating out and Netflix) and the need for skilled specialist intermediaries (for example, advertising agencies for commercial transactions).

The IMF also suggests that this structural transformation from manufacturing to services is partly down to the ingredients in the statistical pie:

> The increasing fragmentation of manufacturing production implies that some activities formerly carried out within manufacturing firms (such as marketing, legal services, logistics) are unbundled and outsourced. The reclassification of these activities as services in official statistics could overstate the extent of structural transformation.

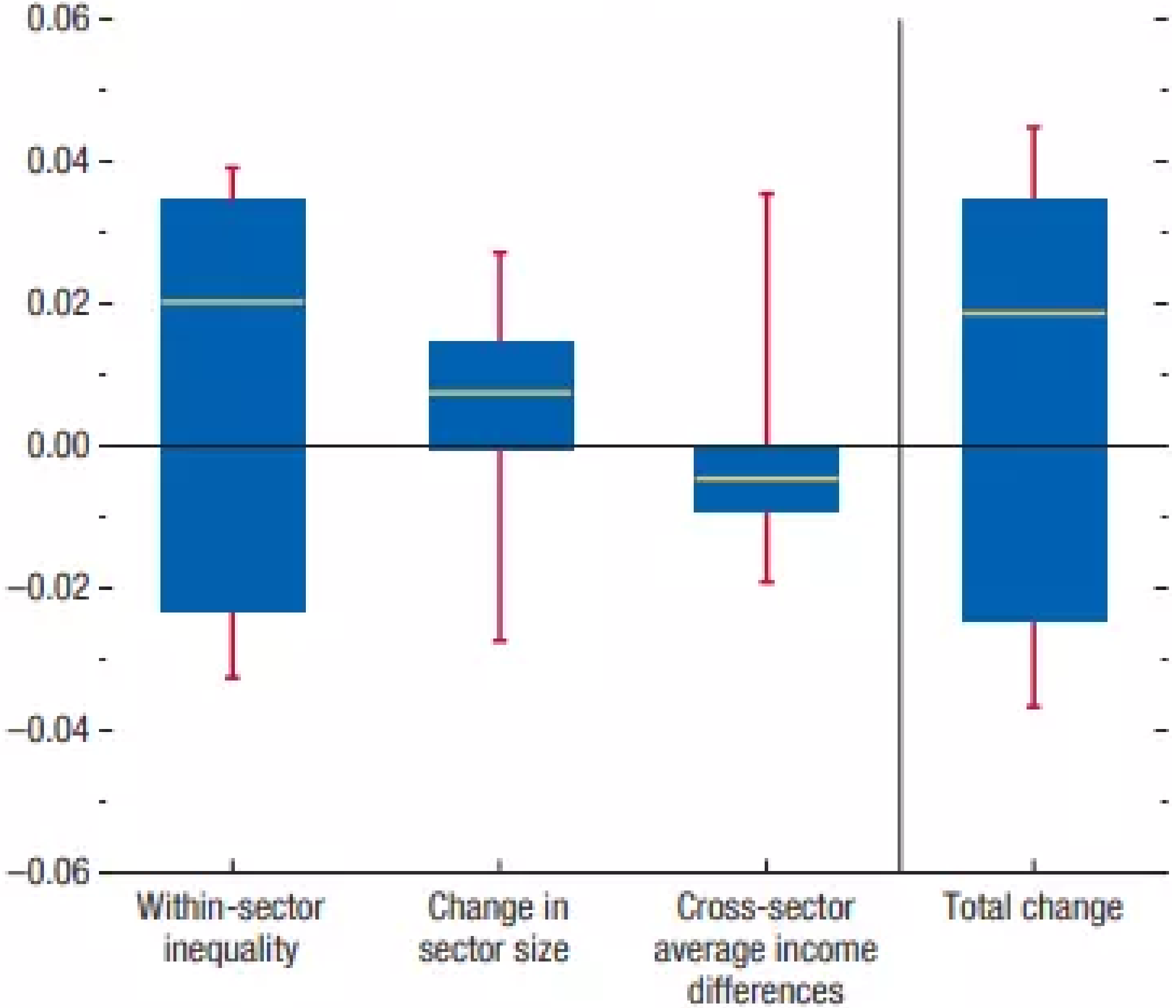
Let's say an industrial conglomerate like General Electric once had an extensive in-house legal council, but now relies more on external lawyers. That would naturally decrease manufacturing's share of employment and boost services' share, without changing the fundamental skill-set of the economy.

In terms of income inequality, the effects of these employment shifts are surprising:

## Figure 3.22. Contribution to Change in Overall Labor Income Inequality between the 1980s and 2000s

*(Points)*

Most of the increase in overall labor income inequality between the 1980s and 2000s is explained by rising inequality within sectors, rather than by shifts in the relative size of employment between industry and services.




Sources: Luxembourg Income Study database; and IMF staff calculations.
Note: The figure shows the cross-country distribution of the change in aggregate labor income inequality between 1980–89 and 2000–09 and the contribution from changes in inequality within sectors, changes in the relative size of sectors, and changes in the difference of average income levels across sectors. The horizontal line inside each box represents the median; the upper and lower edges of each box show the top and bottom quartiles; and the red markers denote the top and bottom deciles. The measure of inequality used is generalized entropy based on disposable income. The sample consists of 13 countries (see Annex 3.4 for details).

So the rise of income inequality has been largely driven by within-sector inequality, and not changes in sector size. As the IMF summarises:

> As analyzed widely in the literature, the key drivers behind greater pay inequality over time seem to be the dislocation of middle-skilled workers through technology and trade—and the resultant downward pressure on wages for medium- and low-skill jobs—rather than shifts in the relative size of employment between industry and services.

To cope with these issues, the IMF prescribes a few policy ideas, including investing in worker re-training and widening the safety net to help the unemployed. Not exactly the agenda of the Trump administration though, given the latest executive order that called for stricter conditions (http://fortune.com/2018/04/11/trump-executive-order-expands-work-requirements-for-welfare-receipients/) on welfare recipients.

While these recommendations are logical, the IMF ignores the elephant in the room -- the explosion in executive compensation. A report (https://www.epi.org/publication/ceo-pay-remains-high-relative-to-the-pay-of-typical-workers-and-high-wage-earners/) by the Economic Policy Institute last year revealed that the CEO-to-average worker earnings ratio stands at 271-to 1, up from a ratio of 59-to-1 in 1989, and 20-to-1 in 1969. That *might* also help explain the growth of within-sector inequality.

It is not surprising that the IMF would be cautious in recommending a more equitable split of corporate spoils, either via taxation or regulation. That being said, given how difficult (https://www.motherjones.com/politics/2012/10/retraining-jobless-janesville-gm-obama-romney/) re-training is to implement, perhaps broadening their policy horizons would help mend a reputation that is still suffering (https://www.theguardian.com/world/2017/jun/22/greek-debt-imf-eu-bailout) from the Greek crisis.



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**John Dillinger** Apr 19, 2018

Didn't the IMF used to be part of something called Bretton Woods?

They were the guys who advocated austerity for everybody, no matter what?

After their big success in Jamaica in 1977, they kind of retired, correct?

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**Clive Lord** Apr 17, 2018

So the IMF ncludes among its policy suggestions "Widening the safety net to help the unemployed" May I suggest an unconditional Basic income (UBI) as the most efficient way of doing this? Financed at least partly from those enormous executive 'compensations' a UBI would even allow lower wage rates per hour to make sense - you only have to accept it if it is worth *your* while.

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