ERF Policy Brief

Trends in Income and Wage Inequality in Egypt (1988-2023)

Mona Elsayed, May Gadalla and Mariam Hagag

About the authors

Mona Elsayed is an Assistant Lecturer of Economics at the Faculty of Economics and Political Science at Cairo University. She is also a Technical Coordinator at the Migration Research Unit (MRU) at the same faculty and a J-PAL MENA Scholar.

May Gadalla is an Associate Professor at Cairo University, Faculty of Economics and Political Science, a Statistics Manager at the Economic Research Forum (ERF), and a Research Fellow at the ERF.

Mariam Hagag is a Statistician at the Economic Research Forum (ERF).

In a nutshell

- *The inflationary pressures that Egypt witnessed since the currency devaluation in late 2016 negatively impacted real wage and income levels and exacerbated inequality.*
- *Median real hourly wages dropped sharply in 1998 to EGP 16.4 following the economic reform program and dropped again in 2018 and 2023 to EGP 19.1 and EGP 17.3, respectively, after a brief recovery in 2006 and 2012.*
- *Egypt has high wage inequality, as measured by the Gini coefficient, with a consistently increasing trend from 38.3 in 1988 to 43.1 in 2023.*
- *The median real monthly income per capita decreased between 2012 and 2018 and recovered slightly in 2023.*
- *The Gini coefficient of income inequality is high but relatively stable, decreasing slightly from 50.4 percent in 2012 to 49.8 percent in 2018 and increasing again to 50.1 percent in 2023.*
- *Income is not diversified in Egypt, as more than half of households years rely on only one income source in all years regardless of their characteristics.*
- *Wages are received by the largest portion of households in Egypt, yet this portion is declining over time (from 72 percent in 2012 to 60 percent in 2023).*
- *Wages are consistently the major driver behind income inequality, and their contribution increased between 2012 and 2023 (from 42.7 percent to 48.9 percent).*
- *By 2023, informal private sector wages became the most prevalent source of income among households (29 percent) and an important share of total household income (23 percent), followed by public sector wages (18 and 17 percent, respectively), then by formal private sector wages (13 and 12 percent, respectively).*

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Introduction

Throughout the period 1988-2022, Egypt witnessed many macroeconomic imbalances due to several internal and external shocks, which necessitated the implementation of several economic reform and stabilization programs carried out in partnership with international financial organizations like the World Bank and the International Monetary Fund (IMF). These programs focused mainly on liberalizing the economy, maintaining overall macroeconomic stability by reducing the state's welfare spending, and enhancing the role of the private sector in economic activity. Some have argued that the reform efforts that aimed to achieve these broad goals (e.g., downsizing public sector employment, cutting subsidies, and devaluating the national currency) resulted in negative distributional consequences on vulnerable groups (Alashaal, 2015; Alissa, 2007; Nassar, 2011).

In Egypt, overall expenditure inequality, as measured by the Gini index, was relatively stable over the study period, moving slightly from 32 in 1990 to 31.9 in 2019 (World Bank, 2024). However, aggregate inequality figures can mask potential developments in income inequality when data are disaggregated by groups (e.g., gender, sector, education…etc.) or by income source (e.g., wage income and non-wage income). Hence, this policy brief investigates wage and income inequality trends in Egypt at a more disaggregated level, drawing upon data from the Egypt Labor Market Panel Survey (ELMPS) (ERF and CAPMAS, 2012, 2018, 2023). We also examine the extent of income diversification in Egypt, the prevalence of different income sources, and their relative importance to total income: income inequality decomposition and its developments over time.

Wages and income in Egypt: trends and distribution

Wage distribution and trend (1988-2023)

As shown in Figure 1, the sharpest drop in the median real hourly wage occurred in 1998 when it declined from around EGP 22.7 in 1988 to EGP 16.4 in 1998, despite the considerable containment of the inflation rate.[1] This is possibly attributable to the contraction of public sector employment since the early 1990s and the expansion of informal employment where wages are substantially lower (Assaad et al., 2019; Barsoum and Abdalla, 2020). The median real wage recovered gradually until it recovered to its initial 1988 level (EGP 21.9) in 2012. Nevertheless, it dropped again in 2018 and 2023 to EGP 19.1 and EGP 17.3, respectively, due to the inflationary pressures brought about by a series of currency devaluations, the largest of which was in late 2016, as indicated earlier.

Wage growth was mainly confined to the 1998-2006 and 2006-12 periods. It was particularly higher among women (who are heavily concentrated in the public sector), those with secondary education, and public and informal private sector workers. The rest of the periods witnessed major wage drops, with the sharpest drop occurring in the 1988-98 period among most subgroups. However, the wage decline in later periods, brought about by the inflationary pressures, was also considerable for almost all subgroups. In 2018-23, only women, high-education workers, and public and formal private sector workers managed to have a positive wage growth.

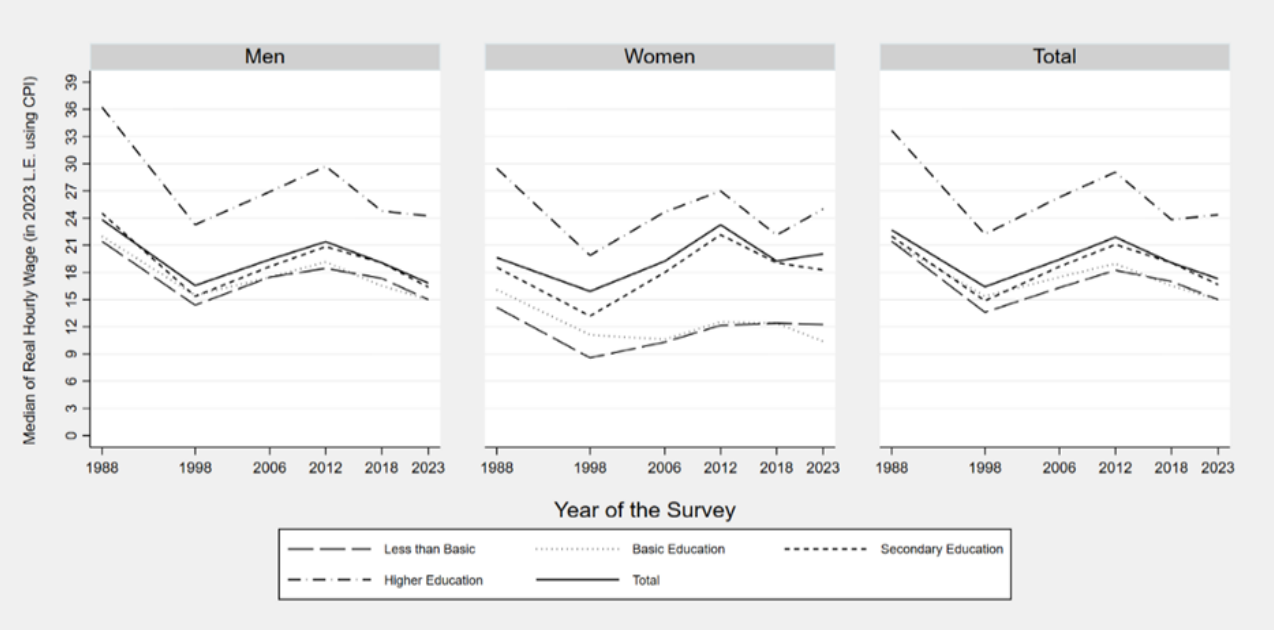
The median real hourly wage trend by different subgroups indicates that median wages are relatively higher for high-educated than low-educated workers, for high-skilled workers than low-skilled workers, and for public and formal private sector workers than informal private sector workers. Wage disparities are also more pronounced among women than men, indicating a relatively higher wage inequality among women. While women who belong to more vulnerable groups tend to receive relatively lower wages than men, those who belong to more advantaged groups tend to receive similar wages, if not higher. However, wage compression can be generally observed whenever there is a fall in the median hourly wage.

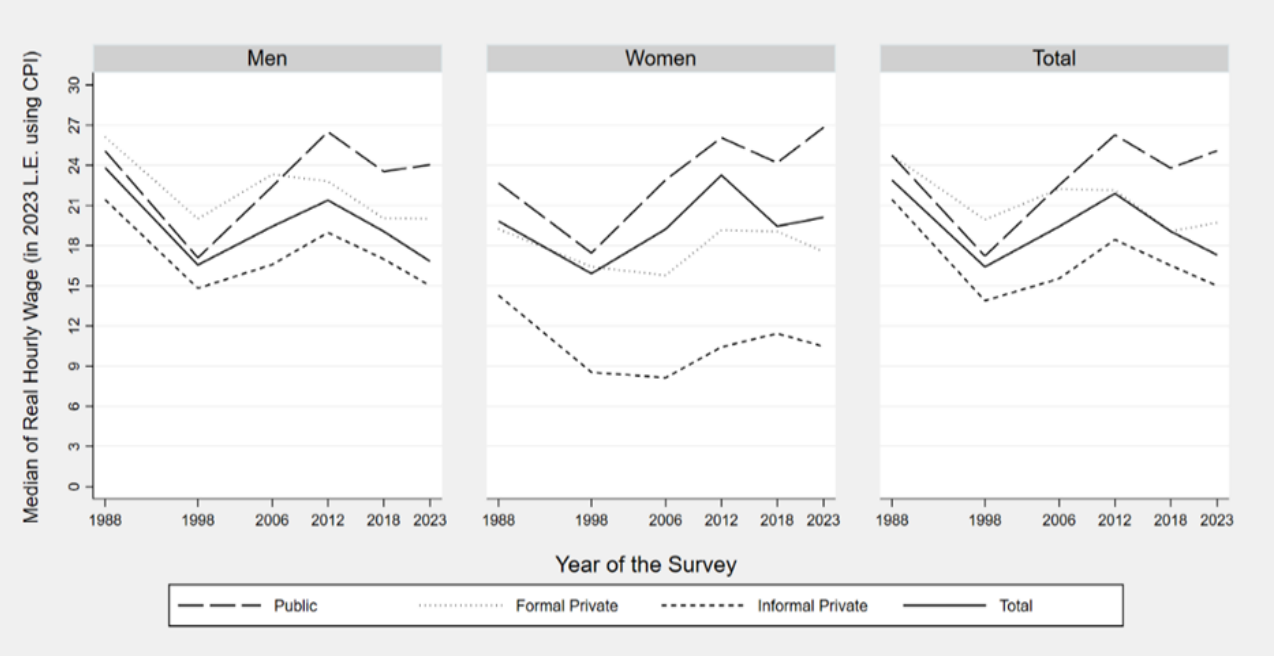
It is noteworthy that the low-wage share (i.e., the share of those receiving hourly wages below the minimum wage level) constitutes more than one-half of all wage workers, and their share is increasing steadily over time (55.0, 66.0, and 69.0 percent in 2012, 2018, and 2023, respectively). This could imply a high incidence of poverty, given that most workers in Egypt are wage workers[2] and that wages are considered the main

[1] All monetary amounts are expressed in 2023 constant prices.

[2] Around 64 percent of employed individuals are waged workers, based on the ELMPS 2023 data within the three-month reference period.

Figure 1. Evolution of real median hourly wages (in constant October 2023 prices) (primary and secondary jobs) by different subgroups





Notes: Occupational skill levels are defined as follows: High – managers, technicians, and associate professionals; Middle – clerical support, plant and machinery, and craft and trade workers; Low – agricultural, service and sales, and other elementary occupations. Source: Authors based on the ELMPS 1988-2023.

source of income for most of the population.[3] The increasing trend in this share is pervasive across all subgroups, reflecting the notable effect of currency devaluation in late 2016 and its associated inflationary pressures on wages.

[3] Wages are considered the main source of income for around 50 percent of households in the ELMPS 2023.

Income distribution, trend, prevalence, and diversification (2012-23)

Pertaining to income, the median real monthly income per capita[4] decreased between 2012 and 2018 from EGP 1,395 to EGP 992 in constant 2023 prices, then recovered slightly in 2023, reaching EGP 1,009 (see Table 1). The overall income trend also applies to almost all subgroups, but divergence does exist. The period 2012-18 witnessed a pervasive decline in median income across all subgroups but with varying degrees. The decrease in the annual growth rate was higher among households headed by men, higher-educated workers, and non-working and non-wage workers. While the period 2018-23 experienced a general recovery in the income trend, some subgroups continued to experience a strong income decline compared to their counterparts in the same group, namely households headed by women, workers with basic and higher education workers, non-working, and informal private sector workers.

Income per capita disparities by household head characteristics show that the median income was higher among female-headed households than male-headed households in 2012 and 2018. It also tended to move monotonically with education in all years. Households headed by public and formal private sector workers consistently have the highest median income across all years compared to the rest of the households. In third place came those headed by employers. Those headed by informal private sector workers had the lowest median wage, particularly in 2012 and 2023.

Income sources are not particularly diversified in Egypt. The share of households with no income source is minor but has a consistent tendency to increase over time overall and across all subgroups, especially between 2012 and 2018. The majority of households (more than half) rely on only one income source, and this share increased slightly from 55 percent in 2012 to 56 percent in both 2018 and 2023. Less than one-third of total households have access to two income sources, with a declining share from 31 percent to 29 percent between 2012 and 2023. Those with three income sources constituted only 10 percent of total households, decreasing to eight percent in both 2018 and 2023. This implies that most Egyptian households are not sufficiently resilient against various internal and external shocks, which makes them prone to the risk of experiencing severe income reduction.

The prevalence of different income sources illustrated in Figure 2 reveals that wages (both public and private wages) are the source of income received by the largest portion of households in all years. However, its incidence decreased from 72 percent in 2012 to 68 percent in 2018 and 60 percent in 2023. Informal private sector wage was the most prevalent in all years among all wage categories; however, its prevalence first increased from 31 percent in 2012 to 35 percent in 2018 then decreased to 29 percent in 2023. The public sector wage followed the informal private sector wages. Yet, the share of households receiving it decreased from 28 percent in 2012 to 22 percent in 2018 and 18 percent in 2023, reflecting the shrinking of the public sector. The lowest portion of households received the formal private sector wage among all wage categories, with relative stability in household shares over time compared to the rest of the wage categories (13, 11, and 13 percent in 2012, 2018, and 2023, respectively).

Contributory pensions come in second place after wages, with an increasing prevalence from 22 percent in 2012 to 26 percent in 2018 and 29 percent in 2023. In third position comes enterprise income; its prevalence decreased from 19 percent to 14 percent between 2012 and 2018 but increased again to 22 percent in 2023, attributed to the increase in the share of own-account workers noted earlier. While remittances directly followed enterprise income in 2012 with a household share of 14 percent, its prevalence dropped substantially in 2018 and 2023, reaching six percent in both years, and this drop was also observed among all gender and location groups. This decline in the prevalence of remittances is consistent with the decline in the importance of remittances to GDP in Egypt from 6.9 percent in 2012 to 4.9 percent in 2023 (World Bank, 2024). Agricultural income, noncontributory transfers, and assets are the least prevalent income sources. The prevalence declined for both agricultural and asset income from 13 and eight percent in 2012, respectively, to 12 and four percent in 2023. This decrease is also observed regardless of gender and location groups. However, for noncontributory transfers, the prevalence first increased from 10 to 13 percent between 2012 and 2018 then decreased to 11 percent in 2023.[5]

This conclusion does not vary greatly when income shares rather than prevalence are analyzed. Wages also consistently had the largest contribution to total income,

[4] The analysis for the income per capita uses the households' weights multiplied by the household size.

[5] The decrease in the prevalence of noncontributory transfers between 2018 and 2023 is not linked to the Takaful and Karama programs, the prevalence of which increased from five percent in 2018 to nine percent in 2023; rather, it is linked to the decrease of other aid programs from 13 percent to 11 percent.

Table 1. Median real monthly income per capita (in constant october 2023 prices) by subgroups (2012-23)

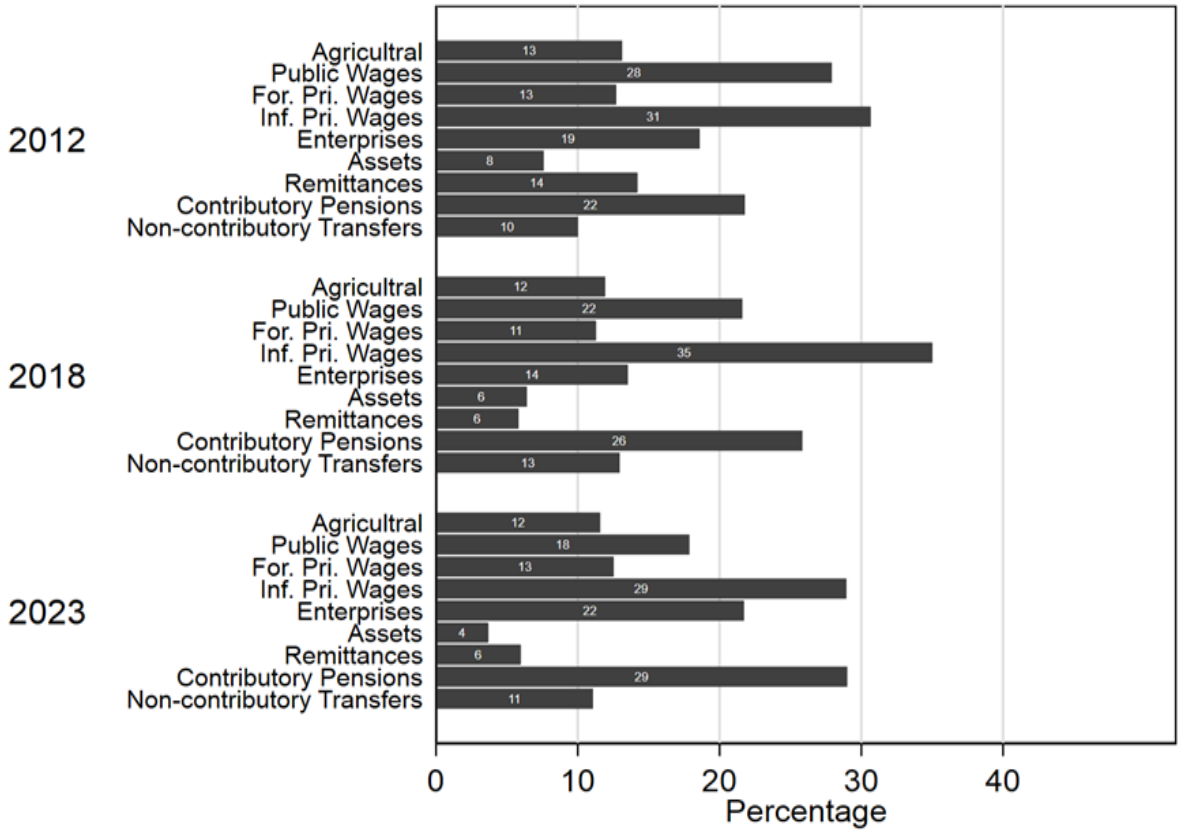
Wave of the Survey (Year)	Main Characteristics	2012	2018	2023	Growth Rate Per Year 2018-2012	Growth Rate Per Year 2023-2018
Sex of household head	Men	1382	992	1011	-4.7%	0.4%
	Women	1424	1047	1000	-4.4%	-0.9%
Educational attainment of head of household	Illiterate	1185	913	971	-3.8%	1.3%
	Reads and Writes	1233	992	1000	-3.3%	0.2%
	Basic Education	1318	962	938	-4.5%	-0.5%
	Secondary Education	1304	978	1000	-4.2%	0.4%
	Higher Education	2283	1388	1370	-6.5%	-0.3%
Work status for household head	Public Sector Waged Worker	1648	1256	1278	-4.0%	0.3%
	Formal Private Sector Waged Worker	1581	1190	1250	-4.1%	1.0%
	Informal Private Sector Waged Worker	1138	915	875	-3.3%	-0.9%
	Employer	1393	1006	1218	-4.6%	4.2%
	Self-Employed/Unpaid Family Worker	1276	841	1000	-5.7%	3.8%
	Non-Working	1423	992	917	-5.1%	-1.5%
Total		1395	992	1009	-4.8%	0.4%

Note: Annual growth rates for the median income are calculated using the formula:

$$\left(\frac{\text{Median income in current round} - \text{Median income in previous round}}{\text{Median income in previous round}}\right)/\text{Number of years between the two rounds}$$

Source: Constructed by the authors based on the ELMPS 2012-23.

Figure 2. Percentage of households receiving each income source by round



Source: Constructed by the authors based on the ELMPS 2012-23.

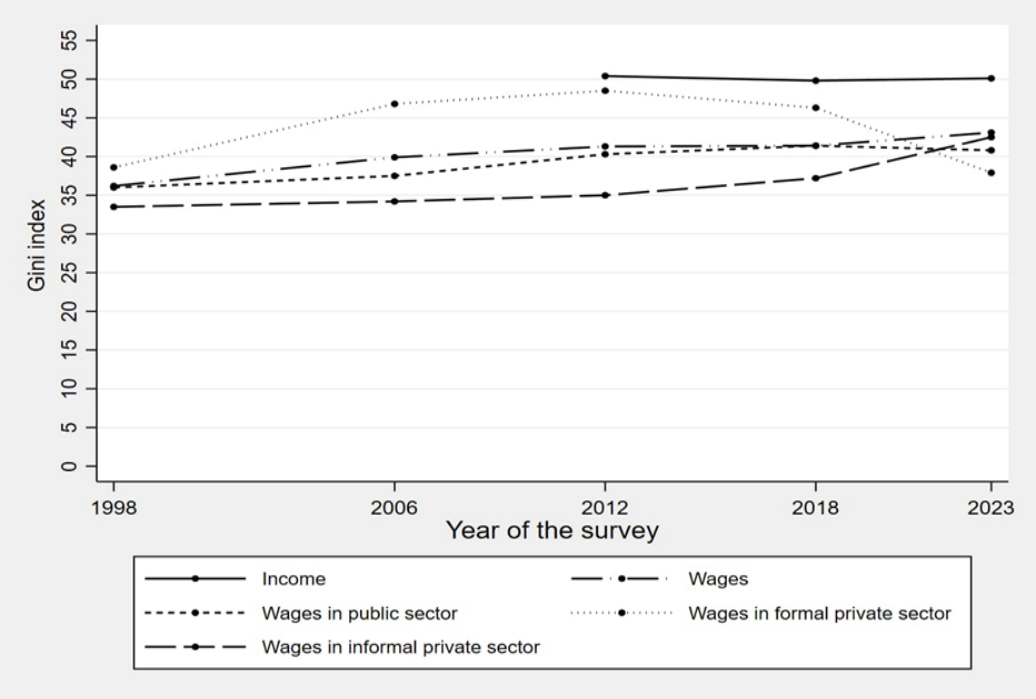
which increased from 52 percent in 2012 to 63 percent in 2018, returning to its 2012 level in 2023 (see Figure 4). In 2018, the share of informal private sector wages started to be the dominant wage income among households in Egypt (29 percent in 2018 up from 19 percent in 2012). Their dominant importance continued in 2023 despite the slight decrease in their share to 23 percent. Following them are the public sector wages, the share of which declined over time from 22 percent in 2012 and 2018 to 17 percent in 2023. The formal private sector wages had the lowest share in all years, increasing barely from 11 percent in 2012 to 12 percent in 2018 and 2023. Household enterprise income followed wages, and its share reached 17 percent in 2012, decreasing to 13 percent in 2018 and increasing again to 20 percent in 2018. Contributory pensions come next, with a steadily increasing contribution from 10 percent in 2012 to 16 percent in 2023. Agricultural income, capital income, remittances, and noncontributory income come, respectively, afterward, with minor contributions. While the shares of agricultural income and noncontributory transfers were stable between 2012 and 2023, the shares of capital income and remittance decreased notably between these two years.

Wage and income inequality and income inequality decomposition

The Gini index for income inequality in Figure 3 reveals a high but relatively stable inequality level, decreasing from 50.4 percent in 2012 to 49.8 percent in 2018 and increasing again to 50.1 percent in 2023. The Gini index for wage inequality shows an almost uniformly increasing trend from 38.3 in 1988 to 43.1 in 2023. Wage inequality was the highest among formal private sector workers from 1998 to 2018; however, inequality dropped sharply in 2023 among this wage category and became the lowest (37.9). It is noteworthy that the decrease in the inequality level among formal private sector workers between 2018 and 2023 could be attributed to applying the minimum wage policy in the private sector, which caused a notable increase in their median wage level in 2023. Wage inequality levels among public and informal private sector workers, respectively, follow the inequality level among formal private sector workers. While wage inequality among public sector workers was consistently higher than that of informal private sector workers in most years, it became lower in 2023.

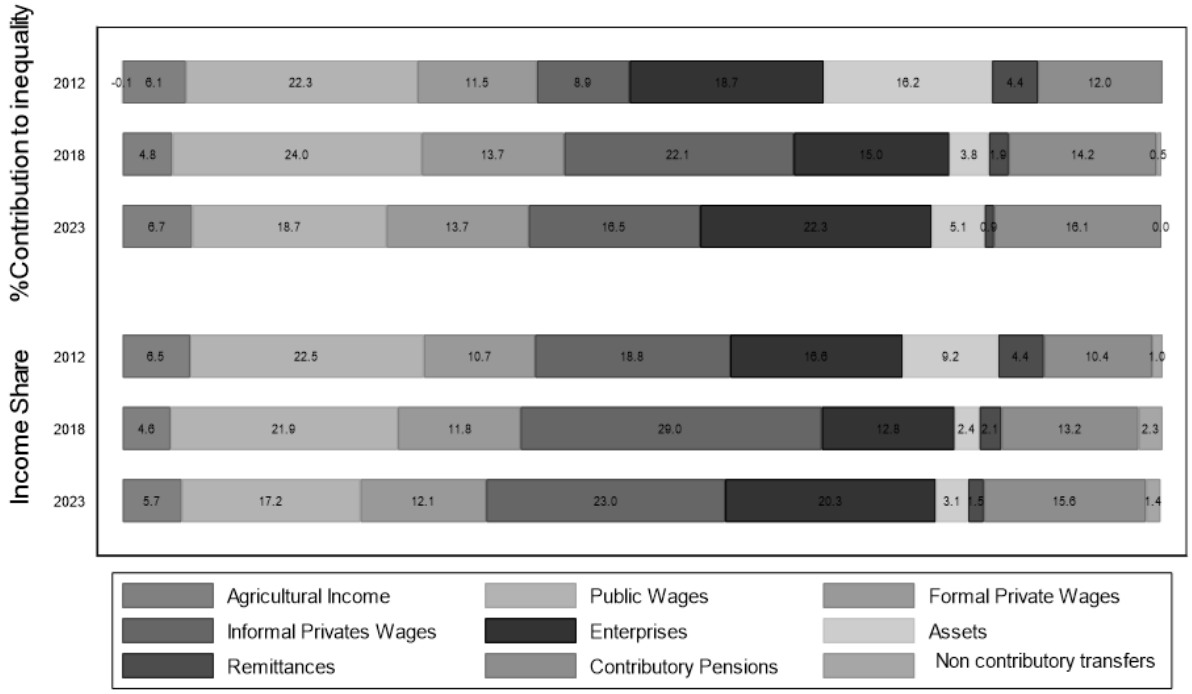
The decomposition of income inequality by income source in Figure 4 suggests that wages are the major contributor behind income inequality in all years, and their contribution increases over time across all wage categories. The overall wage contribution (public, formal private, and informal private wages) was the highest in 2018, reaching 59.8 percent compared to 42.7 percent in 2012 and 48.9 percent in 2023. Among wage categories, public sector wages consistently have the highest contribution to inequality across all years. In 2023, its contribution reached 18.7 percent compared to 13.7 and 16.5 percent for formal and informal private wages,

Figure 3. Gini coefficient for income and wages



Source: Constructed by the authors based on the ELMPS 1988-2023.

Figure 4. Income sources shares (% total income) and contributions to income inequality (2012-18)



Source: Constructed by the authors based on the ELMPS 1988-2023.

respectively. While the contribution of formal private wages was higher than that of informal private wages in 2012 (11.5 compared to 8.9 percent, respectively), the situation is reversed starting from 2018.

Enterprise income comes second in terms of income inequality contribution, which decreased first from 18.7 to 15.0 percent between 2012 and 2018 and then increased to 22.3 percent in 2023. While the contribution of assets directly followed enterprise income in 2012 (16.2 percent), contributory pensions followed enterprise income starting from 2018 and 2023 (14.2 and 16.1 percent). Agricultural income also contributed more than assets, but less than contributory pensions, starting from 2018, reaching 4.8 and 6.7 percent in 2018 and 2023, respectively. Remittances and noncontributory transfers have the lowest contribution to income inequality across all income sources and all years.

Conclusion

This policy brief examines income and wage distribution and inequality trends in Egypt, drawing upon data from all rounds of the ELMPS. Wage results posit a sharp decline in 1998, followed by a gradual recovery until 2012. However, subsequent currency devaluations starting from late 2016 led to another decline in 2018 and 2023. The average annual wage growth primarily took place in the periods 1998-2006 and 2006-12. In the remaining periods, particularly 1988-98, median wages declined considerably across most groups. The analysis also reveals disparities in median wages among different subgroups. There was also an alarming increase in the share of low-wage share that exceeded 50 percent in 2023, indicating a potential increase in poverty levels among wage workers.

Income results highlight a decline in median real monthly income per capita between 2012 and 2018, followed by a slight recovery in 2023. As for wages, income disparities are also marked among subgroups. Wages, particularly informal private sector wages, are the most prevalent and important source of income. Enterprise income and contributory pensions are also considerable sources. Households in Egypt, however, notably lack a sufficient level of income diversification, with over half of households relying on only one source. This makes households prone to shocks and income fluctuation risks. This suggests the need for strategies to promote income diversification and social safety nets. The analysis of the inequality trend reveals that income inequality in Egypt has remained relatively stable, while wage inequality has increased over time. Wages, particularly public sector wages, are the primary driver of income inequality.

- Many policy recommendations could be inferred, which could be summarized in the following points:
- There is a strong need to tie minimum wage adjustments in both public and private sectors to inflation. This is particularly important given that wages are consistently the main income source among households in Egypt and a contributor to income inequality.
- The lowest prevalence and share of formal private sector wages reflects its poor performance in the economy as an employment absorber. This posits that supporting its development and growth is a cornerstone for guaranteeing the sustainable expansion of high-quality jobs and better living conditions for the majority of households, especially in light of the contraction of public sector employment.
- Contributory pensions are considerable in terms of prevalence and shares, which are increasing over time. This means that enhancing their level, in real terms and coverage, could have a sizable impact on living standards and income inequality among households across Egypt.
- While Egypt is considered among the top 10 economies receiving remittances, their weak prevalence and share to income implies a need to encourage and facilitate their transition. Providing incentives to households to invest these remittances also could help enhance income diversification in Egypt and increase the importance of other income sources like enterprise and capital income which are still minor.
- Promoting entrepreneurship opportunities and the ease of doing business for micro, small, and medium-sized enterprises are also highly recommended for increasing their chance of continuing in the market and maintaining income diversification.

References

Alashaal, M. (2015). The Structure of the Economy of Egypt and the Portentous Impact of External Crises (SSRN Scholarly Paper 2596628). https://doi.org/10.2139/ssrn.2596628

Alissa, S. (2007). The Political Economy of Reform in Egypt: Understanding the Role of Institutions. CEIP: Carnegie Endowment for International Peace. https://policycommons.net/artifacts/977261/the-political-economy-of-reform-in-egypt/1706389/

Assaad, R., AlSharawy, A., and Salemi, C. (2019). Is the Egyptian Economy Creating Good Jobs? Job Creation and Economic Vulnerability from 1998 to 2018. In Working Papers (Working Paper 1354). Economic Research Forum. https://ideas.repec.org/p/erg/wpaper/1354.html

Assaad, R. and Mahmoud., E. (2024). Evolution of the Structure and Quality of Employment in Egypt, 2012-2023. (Working Paper 1750; ERF Working Paper Series). Economic Research Forum (ERF). https://erf.org.eg/publications/evolution-of-the-structure-and-quality-of-employment-in-egypt-2012-2023/

Barsoum, G., and Abdalla, D. (2020). Still the Employer of Choice: Evolution of Public Sector Employment in Egypt (Working Paper 1386; ERF Working Paper Series). Economic Research Forum (ERF). https://erf.org.eg/publications/still-the-employer-of-choice-evolution-of-public-sector-employment-in-egypt/

Economic Research Forum (ERF) and Central Agency for Public Mobilization and Statistics (CAPMAS) (2012). Economic Research Forum (ERF) and Central Agency for Public Mobilization and Statistics (CAPMAS) Egypt Labor Market Panel Survey, ELMPS (2012), Version 3.0 of the Licensed Data Files (Version 3.0) [Dataset]. Economic Research Forum and Central Agency For Public Mobilization and Statistics. http://www.erfdataportal.com/index.php/catalog

ERF and CAPMAS (2018). Economic Research Forum (ERF) and Central Agency for Public Mobilization and Statistics (CAPMAS) (2018), Version 2.0 of the Licensed Data Files (October, 2019), provided by the Economic Research Forum [Dataset]. Economic Research Forum and Central Agency For Public Mobilization and Statistics. http://www.erfdataportal.com/index.php/catalog

ERF and CAPMAS (2023). Economic Research Forum (ERF) and Central Agency for Public Mobilization and Statistics (CAPMAS) (2023), forthcoming, provided by the Economic Research Forum. [Dataset]. Economic Research Forum and Central Agency For Public Mobilization and Statistics. http://www.erfdataportal.com/index.php/catalog

Lerman, R. and Yitzhaki, S. (1985). Income Inequality Effects by Income Source: A New Approach and Applications to the United States. The Review of Economics and Statistics, 67(1), 151–156. https://doi.org/10.2307/1928447

Nassar, H. (2011). Growth, Employment Policies and Economic Linkages: Egypt [Working paper]. https://www.ilo.org/employment/Whatwedo/Publications/working-papers/WCMS_166293/lang–en/index.htm

World Bank (2024). World Development Indicators. https://databank.worldbank.org/source/world-development-indicators

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Contact Information

ERF Office
Address: 21 Al-Sad Al-Aaly St. Dokki, Giza, Egypt
PO Box 12311
Tel: +202 333 18 600 - 603
Fax: +202 333 18 604
Email: erf@erf.org.eg
Website: http://www.erf.org.eg

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