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MEASURING THE INFORMAL ECONOMY

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EXECUTIVE SUMMARY

This paper proposes a framework for measuring the informal economy that is consistent with internationally agreed concepts and methodology for measuring GDP. Based on the proposed framework, *the informal economy "comprises production of informal sector units, production of goods for own final use, production of domestic workers, and production generated by informal employment in formal enterprises."* This proposed framework will facilitate preparation of estimates of the informal economy as a component of GDP.

The measurement of the informal economy is of interest from a policy perspective, including to help ascertain its effect on economic growth, aggregate production, potential tax revenue, and income distribution. Informal workers may be more vulnerable to negative shocks such as the COVID-19 pandemic, as they are likely to face greater income losses without the benefit of social protection. However, the same factors that give rise to informality, such as the lack of registration, may hinder the ability of informal workers to take advantage of government interventions to address the loss of income. At the same time, increasing digitalization has created new and more opportunities for informal employment. Digitalization has also generated some useful sources of data that compilers of statistics may use to measure the informal economy.

While the International Labour Organization has developed an analytical definition of the informal economy, an internationally agreed statistical framework for measuring the informal economy has been lacking. Consequently, the informal economy has been defined and estimated based on diverse criteria depending on varying research and policy motivations. For instance, it has been defined as economic activity missing or not easily covered in official statistics, production taking place outside the regulated economy, or the production of households.

Further, a range of other terms, such as "shadow economy," "underground economy," or "hidden economy" have been applied interchangeably to a similar scope of production or employment. Thus, policy discussions and measurements are based on varied broad definitions that are not always consistent. A consistent framework for measuring the informal economy would therefore improve cross-country comparisons.

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Glossary

2008 SNA	*System of National Accounts, 2008*
FAO	Food and Agriculture Organization
GDP	Gross Domestics Product
GNI	Gross National Income
ICLS	International Conference of Labour Statisticians
ILO	International Labour Organization
MIMIC	Multiple Indicators Multiple Causes model
OECD	Organisation for Economic Cooperation and Development
WIEGO	Women in Informal Employment: Globalizing and Organizing

INTRODUCTION

1. The informal economy may be broadly defined as part of the economy not covered or sufficiently covered by formal arrangements (International Labour Organization (ILO), 2002). These formal arrangements may include government regulations for business registration, the payment of social contributions on behalf of employees, and the payment of taxes related to business transactions. The informal economy is of interest to policymakers owing to its impact on economic growth and productivity, with informal workers and firms associated with lower productivity.[1]

2. Whereas the concept of the informal economy has been developed for policy analysis and discussed in economic literature, it has not been presented in a statistical framework. A statistical framework of the informal economy would need to capture productive activities and work relationships that are not formally recognized and thus not covered or insufficiently covered by formal arrangements. It also would need to take account of the frameworks of the informal sector and informal employment, thereby establishing the necessary link between the statistical measurement of informality and the policy purpose of its measurement.

3. Gaining an understanding of the informal economy is difficult without a consistent statistical framework and scope for measurement that facilitates cross-country comparability. The framework for measuring the informal economy should be designed to meet a wide range of analytical and policy needs and be aligned with the macroeconomic statistics framework. Thus, a balance must be struck between a framework that is flexible enough to meet the various user needs but is consistent and yields data that are comparable across countries. The paper will propose a framework for measuring the informal economy to improve cross-country comparisons of informality and aggregate production.

4. The informal economy is hard to measure. This is because people and businesses engaged in informal economic activity usually operate on a small scale or seek to avoid regulation. Such small-scale operations may be below the threshold required to register a business or pay taxes. Yet, some informal economic activity may be purposefully hidden—associated with tax and social security evasion not only in micro-firms but also in larger firms. Since informal economy activities are generally small and not registered, statistical agencies face major difficulties in measuring economic activity associated with informality.

5. Improving the measurement of the informal economy can make policies better targeted and more effective. Since informal activity is unregistered and may fall below the regulation and taxation thresholds, economic policies at large may not fully attain their intended effect. While there has long been interest in monitoring and measuring such informal activity, robust statistics are generally lacking. Because of the often unavailability of official statistics on informal

[1] *Measuring the Informal Economy* was the theme of the Seventh IMF Statistical Forum (Washington DC, 2019). Papers and presentations are available at: https://www.imf.org/en/News/Seminars/Conferences/2019/03/25/7th-statistical-forum.

output, users resort to a wide range of unofficial estimates.

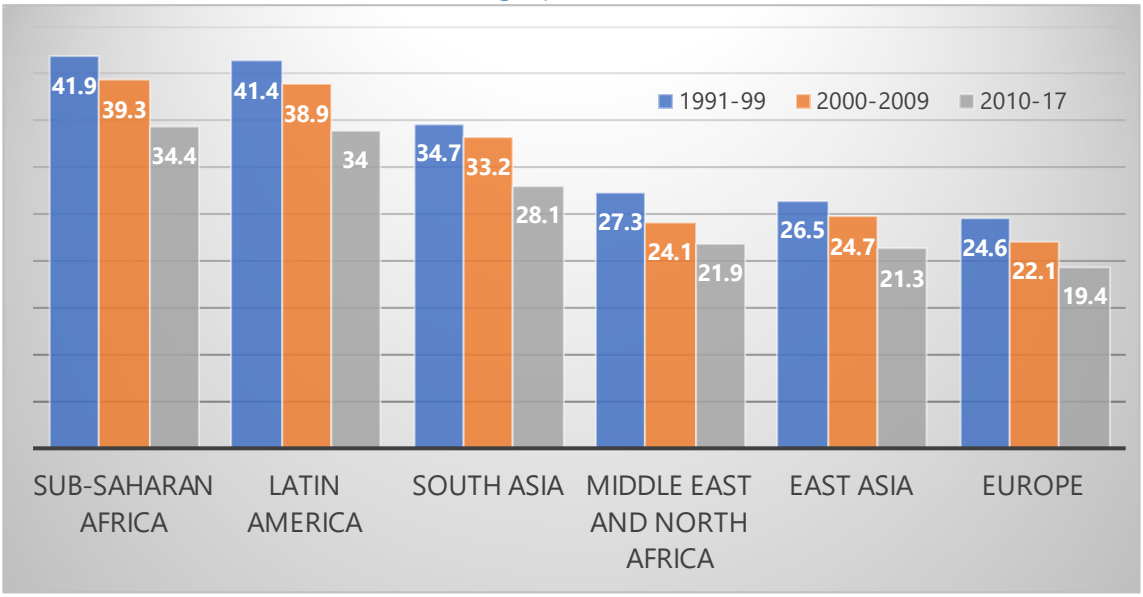
6. The rest of the paper is organized as follows: section II describes the various policy implications of informality, based on varying definitions. Section III reviews the conceptual fragmentation and establishes the need for a taxonomy. Section IV presents a proposal for a statistical definition of the informal economy. Section V reviews data collection and estimation techniques. Section VI concludes with a broad range of recommendations to overcome the measurement challenges.

POLICY IMPLICATIONS OF MEASURING INFORMALITY

A. Economic Growth, Productivity, and Labor

7. Official statistics on the informal economy are generally not available; therefore, model-based measures are often used. Using a Multiple Indicators Multiple Causes (MIMIC) model, Medina and Schneider (2019) estimated that informal output as a percentage of GDP has declined across all regions between 1990–2017 but remains high in Sub-Saharan Africa and Latin America averaging around 34 percent between 2010–2017 (Figure 1).

Figure 1. Informal Economy by Region
(average, percent of GDP)

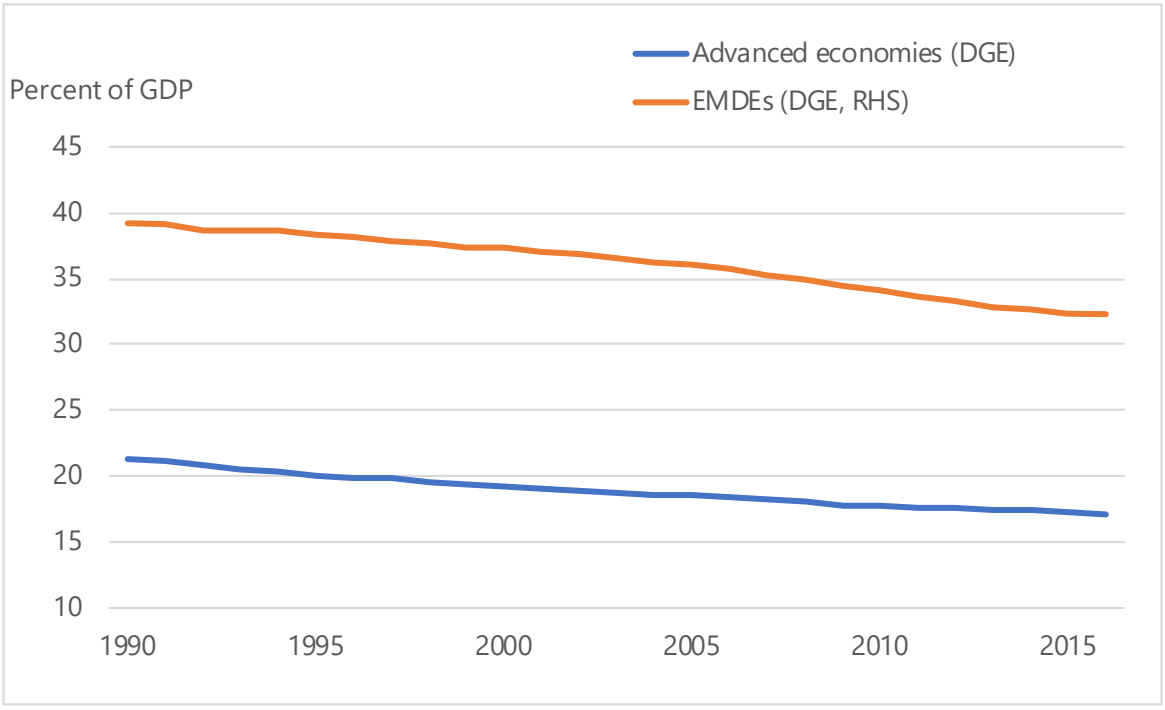


Source: Leandro Medina, Friedrich Schneider "Shedding Light on the Shadow Economy: A Global Database and the Interaction with the Official One" December 2019 https://www.cesifo.org/en/publikationen/2019/working-paper/shedding-light-shadow-economy-global-database-and-interaction.

8. Elgin and others (2019) also showed a declining trend in the share of the informal economy for developing economies and advanced and emerging market economies. Using MIMIC and Dynamic General Equilibrium models to estimate the size of informal economic activity, the authors estimated that, between 1990–2016, the share of informal output fell by about

7 percentage points of GDP in emerging and developing economies (to 32 percent of GDP) and by about 4 percentage points (to 17 percent of GDP) in advanced economies (Figure 2). These estimates are sometimes used to infer the size of informal employment.

Figure 2. Informal Activity Over Time



Source: Elgin et al. (forthcoming a), World Bank.

Note: Group means are calculated for advanced economies (AEs, in blue) and emerging and developing economies (EMDEs, in orange).

9. Measuring the informal economy is also important for obtaining accurate estimates of overall economic growth. The share of informal economic activity could vary over the business cycle. If informal activity rises during recessions and falls in booms, and this is not fully measured by national statistical offices, the volatility of GDP over the cycle could be exaggerated. Separate statistics on the formal and informal economies on a continuous and consistent basis would allow for decomposing economic growth into formal and informal sources, which may be important when formulating counter-cyclical and structural policies.

10. Countries do not generally present separate estimates of the informal economy; therefore, it is assumed that informal economy production is not captured in official estimates of GDP. However, statistical agencies attempt to account for all domestic production and may therefore, indirectly include activities relating to the informal economy in GDP estimates. As regards participation in international organizations, the level of GDP may help determine the size of the voting power of a country and the potential access to credit (Tanzi 1999). Furthermore, the level of GDP is used as the denominator in key ratios to standardize variables relative to the size of the

economy, such as the tax burden, the government deficit, public debt, and the external current account balance.

11. Taxing the informal economy would broaden the tax base and increase government revenue. In fact, this was an early motivation for measuring the informal economy, emphasizing potentially recoverable tax revenues. Tanzi (1999) discussed the nuances between measuring informal activities for national accounts purposes—to derive comprehensive estimates of production and income—and for estimating the revenue not reported to, and not discovered by, tax authorities. Key factors explaining the difference between the measures include how much national statistical offices rely on tax data when compiling statistics and the extent to which an activity or unit may be exempt from taxes.

12. Empirical evidence on the degree of cyclicality of the informal economy is mixed. The World Bank (2019) found that studies focusing on the share of the informal economy in total output tend to find countercyclical behavior whereas studies focusing on output or employment levels tend to find procyclical results. Elgin and others (2019) found that in recessions and recoveries informal and formal do not differ significantly. Results tend to be inconclusive in part due to the difficulty in measuring informality.

13. The informal economy can influence economic performance through several channels. Informal firms often generate inefficiencies in seeking to avoid detection and/or heavy administrative burdens in the formal sector (Loayza, Servén, and Sugawara 2009). To this end, firms remain sub-optimally small and divert resources to mask their activities (Dabla-Norris and Inchauste 2007). Lower costs through the avoidance of tax and regulatory compliance allow firms to stay in business despite low productivity. This could negatively affect the incentives of formal firms to innovate and adopt new technologies (Perry and others 2007). Thus, a high level of informality contributes to low productivity in the economy.

14. Informal employment provides a welcome means of support in countries where the growth of the labor force outstrips the pace of job creation in the formal sector (IMF 2017). Poverty rates are higher among workers in informal employment, with a strong correlation between poverty and informality, However, ILO data show that not all informal workers are poor while some in formal employment are poor. The main reason is either because they earn lower incomes or because despite decent incomes, they share their income with a high number of economic dependents within the household (ILO, 2018). These data suggest that not all workers are in informal employment for the same reason, as some are informal by choice and others by necessity.

15. Informal sector wages are on average below those in the formal sector. [2] [3] Factors that may lead to such wage differentials include: (i) different worker characteristics; (ii) specific non-wage benefits that might accrue to informal workers (such as flexibility and independence); and (iii) labor regulations or tax provisions that create a wedge in wages between similar workers in informal and formal employment. A World Bank (2019) analysis of 18 studies that test for the presence of significant wage differentials between formal and informal jobs found that wage premia in the formal sector tend to be higher where informality is more widespread.[4] In studies that control for unobserved worker characteristics, the formal wage premium largely disappears, with ILO data showing that informal employment is associated with lower education and workers that are, on average, either younger or older than in the formal sector.[5] Informal employment is more prevalent in rural areas (Table 1).

16. Informality has persisted even as small-scale trade, small-scale production and casual jobs become absorbed into the modern, formal economy. Informality has not only persisted but continued to emerge in new, unexpected areas (Chen 2012). For example, the deregulation of labor markets aimed at increasing flexibility, competition, and global integration and digitalization has been associated with a rise in part-time, temporary, and contingent work with little or no benefits (such as freelancers, independent contractors, consultants hired on a per-project basis). Moreover, informal employment is highly segmented by employment status (for example, employers, regular informal wage workers, unpaid family members) and by gender and other social characteristics, which all influence income levels and poverty outcomes.

Table 1. Share of Informal Employment by Rural/Urban and Country Groupings, 2016 (percent)

	World	Developed	Emerging	Developing
Informal Emp.	61	18	67	90
Rural	80	22	83	90
Urban	44	17	51	79
Agriculture	94	59	93	98
Rural	95	64	95	98
Urban	87	49	82	98
Industry	57	16	67	73
Rural	69	17	75	87
Urban	49	15	61	65
Services	47	18	55	74
Rural	65	19	71	79
Urban	39	17	47	70

Source: Women and Men in the Informal Economy—A Statistical Brief (2019); ILO calculations based on national labor force data.

[2] Perry et al. (2007), Marcouiller, de Castilla, and Woodrul (1997), Tansel and Kan (2012), Bargain and Kwenda (2014), Goldberg and Pavcnik (2003), Pavcnik et al. (2004), Goldberg and Pavcnik (2003, 2007), and Paz (2014) all document the existence of wage premia. Pratap and Quintin (2006), El Badaoui, Strobl, and Walsh (2008), El Badaoui, Strobl, and Walsh (2010) caution that this premium depends on model specifications, estimation methods or country samples.

[3] The link between informality and poverty could be due to the absence of better formal jobs (Perry and others 2017).

[4] The association between the level of wage premia in the formal sector and the level of informality could be driven by the stricter labor regulations that raise both wages and informality (Rauch 1991; Loayza 2016).

[5] A forthcoming IMF Working Paper, "Role of Individual Characteristics and Policies in Driving Labor Informality in Vietnam," by Dabla-Norris and others, reviews this issue for Vietnam.

17. Informality is an important source of employment for women who may not be able to access formal employment. The ILO estimates that in developing economies, more women than men are informally employed (Table 2). The informal economy therefore provides opportunities to increase the participation of women in the economy and provides a source of income. However, women tend to be in the type of employment relationships that have lower earnings and a higher risk of poverty (Women in Informal Employment: Globalizing and Organizing (WIEGO, 2012)).[6]

Table 2. Share of Informal Employment by Age and Sex, 2016
(percent)

	Total				Men				Women			
Age	**World**	Developed	Emerging	Developing	**World**	Developed	Emerging	Developing	**World**	Developed	Emerging	Developing
Total	**61**	18	67	90	**63**	19	69	87	**58**	18	64	92
15–24	**77**	19	83	97	**79**	19	85	97	**73**	19	79	97
25–64	**58**	17	66	90	**60**	17	67	87	**54**	16	62	93
65 and over	**77**	38	88	96	**78**	39	88	95	**75**	37	88	98

Source: *Women and Men in the Informal Economy—A Statistical Brief (2019)*; ILO calculations based on national labor force data.

B. Impact of the COVID-19 Pandemic on Informality

18. Informal workers are more vulnerable to negative shocks such as the COVID-19 pandemic. Measures taken by governments to curtail the spread of COVID-19 have included lockdowns and other measures that severely impacted sectors where the concentration of informal workers is high. These include domestic workers and workers in accommodation and food services, manufacturing, and retail, and more than 500 million farmers producing for the urban market (ILO, 2020).[7] Informality is prevalent in activities where the employees or units are required to engage in direct interaction with consumers or other producers. Social distancing policies and work from home arrangements may therefore limit the ability to work and generate income for a large proportion of the workers engaged in services.

19. Because of the impact on workers' income, many countries applied a very light lockdown or no systemic lockdown. Workers affected by lockdowns are likely to face greater job losses—without the benefit of social protections—leading to an increase in income inequality. The

[6] As part of the Sustainable Development Goals (SDGs), 193 countries have committed to deliver full and productive employment and decent work by 2030.[6] Target 8.3 aims to promote development-oriented policies that support productive activities and decent job creation, and to encourage the formalization and growth of micro-, small and medium-sized enterprises, including through access to financial services. Indicator 8.3.1 ("share of informal employment in non-agriculture employment, by sex") is to be used to monitor progress.

[7] According to ILO estimates, more than 75 percent of total informal employment takes place in businesses of fewer than ten workers, including 45 percent of independent workers without employees. https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_744005/lang--en/index.htm.

effect of social distancing policies may not be as pronounced in agriculture in developing economies as much of it is related to subsistence production undertaken on small farms. Nevertheless, income from the sale of excess production—which could be used to maintain assets for production—may be affected by curtailments on movement and the decline in demand. Agricultural supply chains may still be disrupted due to the lockdowns and restrictions in movement and market disruptions may lead to a dampening of demand for fresh agricultural produce.

20. The ability of informal workers to take advantage of government interventions to address the loss of income may be hindered by the factors that give rise to informality. Since informal workers have no insurance against income loss and often are unregistered, it is challenging for governments to deliver the direct income support necessary to sustain these workers during the crisis. Gathering information on informal workers and establishing a framework to deliver relief to the targeted beneficiaries remains a key challenge. Government support based on income or employment status may not be efficient at targeting the informal workers who are not included in employment or tax databases. Thus, programs may have to apply non-income methods with eligibility determined by various proxies of income including demographic characteristics, place of residence, or ownership of assets (Prady 2020).[8] According to Diez and others (2020) only a fraction—typically the poorest—receive anti-poverty cash transfers, as social assistance programs cover 20 percent of the population in Africa and 40 percent in Latin America. Furthermore, in-kind transfers and school feeding programs play an important role, notably in Africa, which may be hard for governments to provide in light of COVID-19 containment measures (Diez and others (2020).[9]

21. Efforts to mitigate the economic effects of the spread of the virus may be hampered if governments programs are not able to reach informal workers. Faced with a loss of income, informal workers may continue to work without adequate protection and therefore expose themselves to further health risks. Migrant and undocumented workers, as well as workers in rural areas without adequate access to information and medical treatment remain vulnerable (FAO, 2020).

C. Digitalization and Informality

22. Interest in monitoring and measuring the informal economy has increased with global integration and the rise of the digital economy. Increasing digitalization has created more opportunities for individuals to engage in informal jobs (gig economy) either as their main job or to supplement their income. Some of these represent new services, such as ride-hailing, but digitalization has also expanded existing opportunities. For instance, through service hosting platforms, individuals—such as domestic workers, skilled workers, producers of artisanal products—have been able to expand their market reach.

[8] Prady discusses the importance of citizen ID systems, integrated socioeconomic databases, and digital delivery systems in extending coverage of social protection in emerging and low-income countries with high informality and therefore limited sources of information on employment and income.

[9] https://www.imf.org/en/Publications/SPROLLs/covid19-special-notes#MSI.

23. The adoption of digitalization also provides opportunities to increase financial inclusion. Mobile money and other forms of digital payment have been increasing in developing countries with high levels of informality and where there is limited penetration of traditional financial services (Financial Access Survey, IMF).[10] These mobile money services may also expand into providing credit, savings, and insurance for informal workers, and therefore encourage entrepreneurship (Jacolin, Massil, and Noah, 2019). In response to the COVID-19 pandemic, some countries have taken measures to encourage the use of mobile money as a substitute for cash transactions. It minimizes physical interaction and provides a larger number of access points relative to traditional banking therefore allowing users to limit travel time and distance (IMF, 2020). Nevertheless, the opportunities from digitalization may be limited by the technological infrastructure for broadband and computerization may not be available. Further, the informal units and workers may lack the capital to invest in such technology.

24. Providing a link between formal enterprises and the informal economy, digital platforms can be a useful source of data on informality. These platforms serve as a channel through which individual contractors (household unincorporated enterprises) can provide goods and services mainly to other households. Since they facilitate this interaction, the platforms may collect information on the income and location (residence) of the service providers. For instance, ride-hailing services may be able to provide information on the value of transactions—and hence the income—and location of the service providers (drivers). Likewise, accommodation hosting services should have information on the revenue from the sale of accommodation services. However, compilers need to explore alternative sources to collect data on the expenses relating to these activities, which can then be used to derive benchmark input-output indicators. Data on expenses may be gathered from surveys of households to collect data on the income and related expenses of these service providers. Targeted surveys of these service providers may be feasible if the digital platforms are able to provide a listing of these providers. Data collection on digital platforms and digital products may be complicated by the fact that providers are based in a limited number of economic territories. Compilers may have to come up with ways to collect data from non-resident enterprises if they lack legal support to collect information from non-residents.

25. The services hosted by digital platforms may be provided by both formal and informal units. E-commerce trading platforms are likely to host a range of large registered enterprises as well as multiple unregistered small producers. Digital platform data may need to be supplemented by or reconciled with data from other sources such as a survey of registered enterprises. The National Bureau of Statistics of China has established an Internet Economic Statistics System of quarterly and annual surveys on major e-commerce trading platforms. As collected data are from the perspective of e-commerce platforms, for some activities it is difficult to distinguish the transactions undertaken

[10] In several upper-middle and high-income countries where mobile money either does not exist or has limited uptake, a different type of digital financial services—mobile and internet banking—has gained greater traction. Mobile banking is the use of an application on a mobile device to access and execute banking services, such as check deposits, balance inquiry, and payment transfers. The distinction between mobile money and mobile banking is important. While the latter is linked to a traditional bank account, mobile money is not (IMF, 2019).

by formal registered units and individuals from those reflecting unregistered informal transactions. Therefore, to estimate the activities of informal units, additional data on formal units is necessary.

DEFINITION AND SCOPE: CONCEPTUAL FRAGMENTATION AND NEED FOR TAXONOMY AND CONSOLIDATION

A. A Persistent Issue

26. The debate over the definition and scope of informality is not new. The literature on the informal economy is broad, with much debate in both the academic literature and macroeconomic statistics as to what constitutes the informal economy and how it should be measured. For instance, Smith (1987) in a study of the informal economy in the US defines it as all activities that elude the national accounts because the counting mechanisms do not detect them. This definition is quite similar to that used by Giles (1999) to measure the "hidden economy." There may also be variation in this definition, depending on the parameters considered. Tanzi (1983) excludes illegal activities in estimating the "underground" economy. However, in developing a taxonomy of the underground economy Feige (1990, 2015) notes that non-compliance and non-observability are common features. He distinguishes four underground economies: the illegal economy (based on the contravention of rules governing the production and distribution of prohibited goods and services); the unreported economy (circumvention of the fiscal code by tax evasion); the unrecorded economy (based on the violations of the rules and conventions of national income accounting); and the informal economy (circumvention of labor market regulations specifying minimum wages, working conditions, social security, unemployment and disability benefits).[11]

27. The parameters for the definition of informality are influenced by policy motivations and research objectives. Definitions that are based on tax evasion and avoidance attempt to assess the cost and benefit of informality (Heintz 2012) and the reasons why a person or enterprise may not pay tax (Kanbur and Keen 2015).[12] However, definitions may consider a range of parameters and factors if the motivation is to identify units outside the regulated, formal economy.[13] This approach is in line with deriving exhaustive estimates of economic activity. The unrecorded activity of households and firms reflects the efforts of these units to supplement income while facing a range

[11] *Measuring the Non-observed Economy: A Handbook* (OECD, CIS STAT, IMF, ILO 2002) notes that there are about 30 different terms that are synonyms for or are closely related to the definition of the underground economy.

[12] In order to undertake detailed analysis, Kanbur and Keen segment taxpayers into evaders, avoiders, and outsiders depending on the regulations' applicability and taxpayer compliance. They note that why a person or enterprise pays no taxes matters for policymaking, especially since how a tax system is structured may affect not only how much tax is paid, but the different ways in which it is not paid.

[13] The 2017 IMF Regional Economic Outlook for Sub-Saharan Africa adopted this approach by defining the informal economy to include: (1) household enterprises that have some production at market value but are not registered; and (2) underground production, where productive activities are performed by registered firms but may be concealed from the authorities to avoid compliance with regulations or the payment of taxes, or are simply illegal.

of regulatory and other hindrances. Chen (2012) has classified the debate over the informal economy into four broad groups—the dualist school, the structuralist school, the legalist school, and the voluntarist school—based on the causes, composition, and how the issues should be addressed. However, it is acknowledged that the informal economy is much more heterogenous and complex than the proposed classifications suggest.

28. International statistical standards do not provide definitions of the formal and informal economy, although there is recognition of the formal and informal procedures that underpin the actions of economic units. Formal procedures are established by the government to regulate and protect the actions and functions of economic units. These include banking and financial laws that regulate the operations of financial institutions, property regulations such as laws protecting intellectual property rights, and fiscal obligations that regulate the payment of taxes and contributions to social security funds. Labor codes and laws establish guidelines and regulations for the payment of wages (such as establishing minimum wages and overtime conditions), working hours, and leave benefits.

29. The concept of informality has three key statistical components: (i) informal employment: employment and jobs; (ii) informal units; and (iii) informal activity: the production of goods and services Informal production can further be identified based on the characteristics of the unit (e.g., whether the unit is formally registered for tax purposes) or based on the characteristics of the activity (e.g., household production for own final use or services of domestic staff). These statistical components are intrinsically linked and should form the basis of the overarching framework of the informal economy.

B. The ILO Framework: The Informal Sector

30. The statistical definition of informality is in the Resolution concerning statistics of employment in the informal sector adopted at the 15th International Conference of Labour Statisticians (ICLS) in 1993.[14] The informal sector is defined as comprising units engaged in the production of goods or services with the primary objective of generating employment and incomes to the persons concerned. These units possess some key characteristics as follows:

- **Low level of organization**: production is usually on a small scale and there is little or no separation between labor and capital as factors of production. Labor relations are based mostly on casual employment, kinship or personal and social relations rather than contractual arrangements with formal guarantees.
- **Constitute part of household entity (not separate legal entities):** The units are household unincorporated enterprises. That is, (i) they cannot engage in transactions or enter into contracts

[14] The International Conference of Labor Statisticians is hosted by the ILO every five years and is the international body responsible for setting standards on labor statistics.

with other units, nor incur liabilities, on their own behalf; and (ii) the assets used in production do not belong to the production units but to their owners of the production units.

- **Undertake market production:** The units are engaged in the production of goods or services with the primary objective of generating employment and incomes for the persons concerned.[15]

Table 3. Criteria for Defining Informal Sector Enterprises (15th ICLS)

1. Legal organization: enterprise not constituted as a legal entity separate from its owner(s).	Identification of unincorporated enterprises.
2. Ownership: enterprise owned and controlled by member(s) of household(s).	Identification of household unincorporated enterprises.
3. Type of accounts: no complete set of accounts, including balance sheets.	Exclusion of quasi-corporations from household unincorporated enterprises.
4. Product destination: at least some market output.	Identification of household unincorporated enterprises with at least some market production; exclusion of household unincorporated enterprises producing goods exclusively for own final use by the household.
5. Kind of economic activity.	Exclusion of households employing paid domestic workers; possible exclusion of enterprises engaged in agricultural and related activities.
6.1 Number of persons engaged/employees/employees employed on a continuous basis: fewer than 'n'. and/or 6.2 Non-registration of the enterprise, and/or 6.3 Non-registration of the employees of the enterprise.	Identification of informal sector enterprises as a subset of household unincorporated enterprises with at least some market production.

Source: Measuring Informality: A Statistical Manual on the Informal Sector and Informal Employment (ILO, 2013).

31. The ICLS guidelines define the informal sector in terms of the production unit—the building block of national accounts statistics—rather than the characteristics of persons undertaking the production. The ICLS definition is designed to be consistent with the national accounts since it is based on the production unit (enterprise and establishment). On the other hand, the focus is primarily on jobs which is consistent with a labor approach. Persons are considered to be informally employed, if they are employed in a unit in the informal sector. However, persons not employed in production units in the informal sector (even if they may not have formal jobs as described below) are not considered to be employed in the informal sector.

32. The definition of the informal sector does not segment the economy or employment into two exhaustive formal and informal groups. Thus, some of the activities and employment categories excluded from the informal sector are not necessarily in the formal sector. These include

[15] The *2008 SNA* distinguishes between: (i) market production (production of goods and services for sale with the intention of covering the cost of production); and (ii) non-market production (production of goods and services to be distributed for free or at prices that are not economically significant).

the household production of goods exclusively for own final use, small-scale agriculture, and paid domestic services.

C. Informal Employment and Informal Jobs

33. Informal employment is defined according to the guidelines of the 17th ICLS with the definition capturing all informal jobs both within and outside the informal sector, including in households.[16] E*mployees are considered to have informal jobs if their employment relationship is, in law or in practice, not subject to national labor legislation, income taxation, social protection or entitlement to certain employment benefits such as advance notice of dismissal, severance pay, paid annual or sick leave* (17th ICLS para. 3.5). The definition highlights a necessary relationship between employment and jobs—it is possible for one person to have multiple jobs. Therefore, it is possible for one person to have jobs both in the formal sector and in the informal sector, such as the case of a government employee with a second job as a driver with a ride-hailing company or working in a restaurant on weekends.

34. The ILO recognizes the following broad groups of jobs (see also Table 4):

- own-account workers;
- employers;
- unpaid family workers;
- employees; and
- members of producers' cooperatives.

35. A related concept is employment in the informal sector, a subset of informal employment. It is a job-based concept that relies on the type of enterprise, capturing the labor supply in the informal sector. Table 4 shows the production units and nature of employment.

Table 4. Conceptual Framework of Informal Employment[1]

Production Unit	Job Status by Employment									
	Own-account workers		Employers		Contributing Family Members		Employees		Members of producer cooperatives	
	Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal	Formal
Formal Sector	■		■						■	
Informal Sector		■		■				■		■
Households		■	■	■	■	■		■	■	■

Source: Measuring Informality: A Statistical Manual on the Informal Sector and Informal Employment (ILO, 2013).

[1] The ILO definitions of the informal sector and informal employment allow for the existence and recording of formal employment in the informal sector. However, this is counterintuitive. If a unit operates outside the legal and regulatory framework, it may not be feasible to provide the requisite social safety net for its employees.

[16] "Guidelines Concerning a Statistical Definition of Informal Employment," 17th International Conference of Labor Statisticians, 2003.

INFORMAL ECONOMY: A PROPOSED FRAMEWORK

36. There is a need for an analytical approach to measure that part of the economy where individuals without formal employment engage in some form of economic activity. These individuals engage in economic activity to generate income for household consumption or to acquire household assets. Although the coverage and scope of the statistics may be similar, necessary compilation efforts should be aimed at deriving comprehensive estimates of economic activity deliberately hidden from the authorities.

37. As noted above, the ILO identified the need for this analytical framework and proposed a definition of the informal economy to cover all economic activities by workers and economic units that are—in law and in practice—not covered or insufficiently covered by formal arrangements (ILO, 2002). The ILO definition explicitly excludes illicit activities, in particular the provision of services or the production, sale, possession or use of goods forbidden by law, including the illicit production and trafficking of drugs, the illicit manufacturing of and trafficking in firearms, trafficking in persons, and money laundering, as defined in international treaties.

38. This definition of the informal economy contains two components: either the production must take place in the informal sector or the production is undertaken using informal employment/jobs (Table 3). A person can simultaneously have two or more formal and/or informal jobs. Given the existence of such multiple jobholding, jobs rather than employed persons are taken as the observation unit for employment. Employed persons hold jobs that can be described by various job-related characteristics, and these jobs are undertaken in production units (enterprises) that can be described by various enterprise-related characteristics. These jobs would be covered in the informal economy, if it satisfies the criteria of informal employment.

39. Some illicit activities fall within the scope of production—in that they satisfy the characteristic that there is mutual agreement between the parties. They are therefore treated no differently from legal activities in macroeconomic statistics (Box 1). Thus, exclusion of all illicit activities in the 17th ICLS definition is not consistent with the broader concept of production and the policy purpose for measuring the informal economy. If the purpose is to generate income, then the illicit nature of the activity may not be a precluding factor. Whereas the informal economy includes illegal activities, not all illegal activities are informal. Thus, the only illegal activities that should be included in the informal economy are those undertaken in the informal sector or generated through informal employment. To distinguish between the two, consider the following examples:

40. Example A: An individual produces illegal drugs in the home for sale. The production and sale of illegal drugs is prohibited by law; however, it satisfies the criteria for being production. The production is by a household for sale to other households (and therefore not by a registered entity) and is therefore informal.

41. Example B: A registered corporation inflates its business expenses and files incorrect corporate tax returns to reduce its tax liability and evade taxes. The action is illegal but the entity—being a registered corporation—is not considered an informal entity.

Box 1. Illegal Actions and Illicit Financial Flows

***The System of National Accounts, 2008* (*2008 SNA*) states, "...illegal actions that fit the characteristics of transactions are treated the same way as legal actions."** *The production or consumption of certain goods or services, such as narcotics, may be illegal but market transactions in such goods and services have to be recorded in the accounts. If expenditures on illegal goods or services by households were to be ignored on grounds of principle, household saving would be over-estimated, and households presumed to obtain assets that they do not in fact acquire. Clearly, the accounts as a whole are liable to be seriously distorted if monetary transactions that in fact take place are excluded. It may be difficult, or even impossible, to obtain data about illegal transactions, but in principle they should be included in the accounts if only to reduce error in other items, including balancing items (2008 SNA para. 3.96).*

There are two kinds of illegal production as follows (*2008 SNA* para. 6.43):

- The production of goods or services whose sale, distribution or possession is forbidden by law;
- Production that is usually legal but becomes illegal when carried out by unauthorized producers.

Illicit financial flows should be distinguished from illegal actions as defined in the macroeconomic statistics frameworks. Illicit financial flows are broad and may include illegal actions at some point along their cycle. They cover the movement of money across borders that is illegal in its source (e.g., corruption, smuggling), its transfer (e.g., tax evasion), or its use (e.g., terrorist financing). However, not all illicit flows meet the criteria of being transactions and fall within the SNA production boundary.

Indicator 16.4 of the SDGs states as a goal, *"by 2030, significantly reduce illicit financial flows and arms flow, strengthen the recovery and return of stolen assets and combat all forms of organized crime."* However, there is no internationally agreed statistical framework for measuring illicit financial flows. The UN Office on Drugs and Crime and the UN Conference on Trade and Development (UNCTAD) are the custodians for this indicator and have established the Task Force on Statistical Methodologies for Measuring Illicit Financial Flows to develop statistical methodology to measure illicit financial flows (the reports of the Task Force are posted on the UNCTAD website).

42. Based on the analytical needs, and building as much as possible on the ILO definition of the informal economy, this paper advocates for consolidating a statistical definition of the informal economy comprising the following:[17]

- Production of informal sector units, as proposed by the ILO;
- Production of goods by households for own final use;
- Production of services by paid domestic staff; and
- Production generated by informal employment in formal enterprises.

43. These elements of production fall within the production boundary of the *2008 SNA*. They are therefore consistent with the concept of production used to define GDP and should be

[17] The National Institute of Statistics and Geography (INEGI) of Mexico uses similar criteria to derive estimates of the informal economy. However, the estimates do not include illegal activity.

covered in the estimates of overall GDP.[18] In this regard, the production of the informal economy is a component of aggregate production (GDP). The production of services for own consumption within the same household falls outside the production boundary of the SNA, except for housing services produced by owner-occupiers and services produced by employing paid domestic staff (*2008 SNA* para. 9.54). However, housing services produced by owner-occupier are also excluded from the informal economy.

44. As noted, the informal sector as defined by the 15th ICLS excludes household production for own final use and domestic services. However, we include both activities in the broader coverage of the informal economy as they fit the analytical criteria discussed previously.

45. Household production of goods for own final use. The production of a household unincorporated enterprise may also include the production of goods for own final use (*2008 SNA, para. 6.82*). All goods produced by households are within the production boundary and those that are not delivered to other units should be treated as either being consumed immediately or stored in inventories for later use. On a practical level, it is difficult to separate the production of households for own final use from the production that is sold on the market. Further, the production of household unincorporated enterprises that is sold may represent surplus production beyond what is available for consumption. Household production for own final use does not explicitly qualify as a mechanism for a household to earn income; however, it is a source of consumption and is usually a substitute—especially in developing economies—for households that may not be able to receive income through employment and transfers.

46. Services of domestic staff. Paid domestic staff (babysitters, cooks, gardeners, chauffeurs, and so forth) are formally treated as employees of an unincorporated enterprise that is owned by the household (*2008 SNA*, para. 6.116). If the goal is to generate income, then an economic argument cannot be made for excluding the services of domestic staff (who work outside the home). In terms of its economic objective, this activity is no different from the other services that one household may provide to another for renumeration.

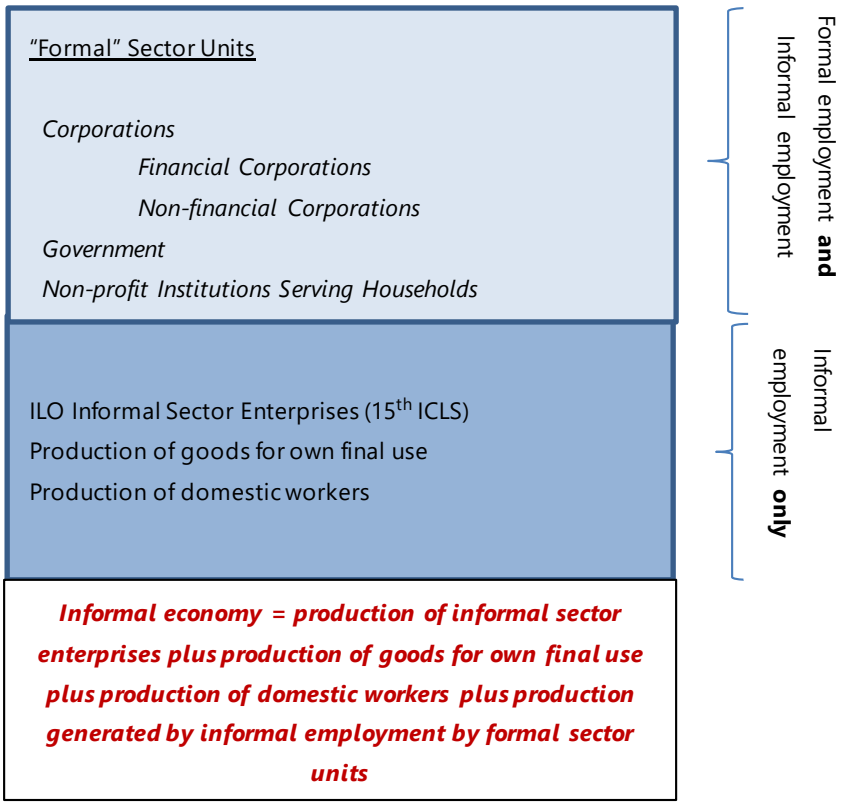
47. Informal employment production in formal enterprises. Estimating the value of informal employment in formal enterprises would require the allocation of the activities of these enterprises based on the nature of employment. This would allow for estimating informality based on the proportional contribution of informal employment.

48. Whereas a practical definition of the informal sector can be built on the enterprise approach, a practical definition of the broader informal economy can be based on the labor approach. Thus, the informal economy encompasses not only the enterprise units that are considered informal, but also the units not considered informal that generate output using informal employment. This is therefore similar to the approach undertaken by Mexico (Box 2). Applying the employment criterion to define the informal economy would require a granular estimation of

[18] As noted above, it may be difficult to estimate these elements. Therefore, for practical reasons they may not be estimated, leading to an undercoverage of GDP.

production of enterprises outside of the informal sector that derives a separate estimate of production of enterprises based on informal employment. This would require enterprise level data or industry estimates of the cost structure of production (including wages).

Figure 3. A Proposal for Informal Economy



Extending the Framework to Cross-Border Flows

49. It is possible to extend the framework to account for the relationship between domestic production in the informal economy and external transactions. The framework for the informal economy discussed thus far, is focused on the production of goods and services in the domestic economy. This production may be directly related to cross-border transactions, mainly to the exchange of goods and services. For instance, shuttle trade and smuggling represent cross-border activities generally undertaken by informal units. Likewise, households may produce a range of tourism services for non-residents, including vacation rental services (such as Airbnb) to non-residents, and operating small eating establishments that cater to non-residents. Remittances may also be transmitted through informal channels by workers who may not have financial access. For instance, the informal "hawala" system predominantly used in the Middle East and South Asia, represents one form of informal money transfer. These workers may also be engaged in informal employment because they may not have the appropriate employment permits.

50. We may also consider the relationship between the income arising from production in the informal economy and external transactions. Workers in informal employment may also

transmit the remittances through formal money transfer channels. Income derived from the informal economy may generate imports of consumer goods and imports of services, such as tourism.

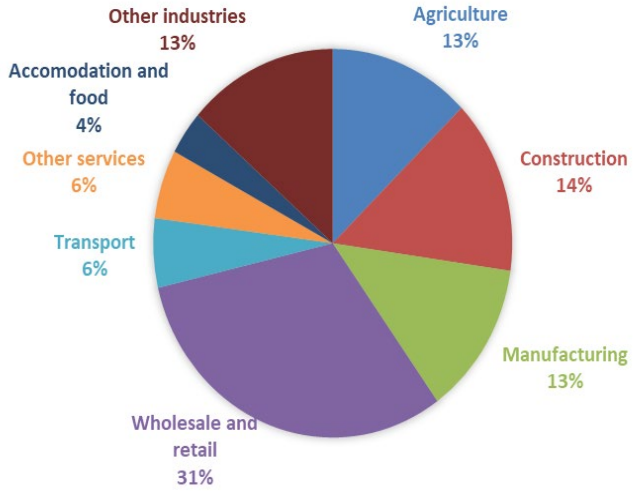
51. A leading cause of imperfections in international trade statistics is the omission of cross-border transactions that are outside the scope of the regular statistical inquiries and data collection systems. However, whereas some of this may be related to shuttle trade and smuggling by informal units, others may be related to activities of large corporations and government units. For instance, merchandise trade statistics based on customs records may need to be adjusted for international trade in petroleum products and in mobile assets (aircraft, ships).

Box 2. Mexico: Estimating the Informal Economy

The informal economy comprises (i) the ILO informal sector; and (ii) other modalities of informality. The **informal sector** includes all economic activities carried out by unincorporated production units owned by households that operate outside the legal and institutional framework (such as non-registration for taxes and social security, and without a regular set of complete accounts). They do not have basic registration and operate with a rudimentary system of organization and employment relationships. **Other modalities of informality** cover the value added generated by informal employees in formal enterprises, value added in agriculture including production for own-consumption, and paid domestic work in households.

The INEGI uses a range of data sources to estimate the informal economy including: (i) economic censuses that provide benchmark data on the cost structure and characteristics of the informal units; (ii) the National Occupation and Employment Survey provides data on employed persons by occupation and economic activity; (iii) National Household Income and Expenditure Survey determines the income level; (iv) the employment statistics from the Social Security Institute supports the coverage of other modalities of informality. (v) the supply and use tables to determine the final estimates of the informal sector in the benchmark year.

Box Figure: Mexico - Structure of the Informal Economy – 2017



Source: National Institute for Statistics and Geography, Mexico (Presented at the Seventh IMF Statistical Forum, Washington.

52. A Task Force under the IMF Committee on Balance of Payments Statistics was established in 2017 with a two-year mandate to take stock of country practices in measuring

informal transactions in external sector statistics. It identified a range of data collection techniques and compilation methods relevant for addressing the coverage of the informal economy in external sector statistics (see Appendix I).

A. Informality as a Continuum

53. The relationship between formality and informality range between two extremes of fully regulated and monitored (formal) and unregulated and non-monitored (informal). However, informality is generally viewed as being dichotomous rather than constituting a range of dimensions, with units satisfying some of the dimensions and to varying degrees. Thus, whereas some units meet all the criteria presented in Table 3 for qualifying as an informal sector unit, others may only meet some of the criteria. The formal–informal terminology can therefore be used to characterize a continuum of the reach of official intervention in different economic activities (Guha-Khasnobis, Kanbur, and Ostrom (2006), Chen 2007).

54. The continuum of formality in identifying informal units also can apply to the use of informal employment by these units. One may posit the example of a government unit or the central bank as having a pure formal relationship. However, a large trucking company may meet all the criteria of formality and provide all the requisite social protections for some employees (e.g., drivers) but may employ some informal workers as porters. Likewise, a major construction company may recruit casual day laborers to provide part-time services. In this case, it is possible to have a unit that utilizes informal employment exclusively—but is still identified as a unit in the formal sector since it is incorporated. In an assessment of the heterogeneity of informality in francophone Africa, Mbaye and Tall (2019) apply seven criteria of informality to firms in the region. They find that the characteristics of the firms vary considerably based on where they fall along the continuum. If informality is considered to be a continuum, then a consideration based solely on institutional units such as the enterprise, would distort the estimates of the informal economy.

55. The formal-informal dichotomy when applied to differentiate production units can complicate policies targeting informality where informality is defined using discrete criteria. Colombia's National Administrative Department of Statistics (DANE) is in the process of developing a multidimensional index of business formality that takes account of the main dimensions of informality. The index uses a sequential process to assess informality based on the four dimensions relating to the transition of the unit from its entry into the market to its maturity. Thus, the key informality metrics used to identify the transition are as follows: (i) entry (commercial registration; tax registration); (ii) inputs (formal contracting; affiliation to health, pensions, occupational risks and social benefits); (iii) output (compliance with health, technical and environmental regulations); (iv) taxation (tax declaration; payment of taxes; formal accounting).[19]

[19] A detailed description of the index was presented at the Seventh IMF Statistical Forum (Washington DC, 2019). The presentation is available at: https://www.imf.org/en/News/Seminars/Conferences/2019/03/25/7th-statistical-forum.

B. The Approach of the Non-observed Economy

56. The regular data collection programs for compiling macroeconomic statistics are predicated on the existence of a structured system where enterprises are either registered with an official entity and/or adhere to a given set of government regulations. This registration or adherence to official regulations makes these enterprises observable and facilitates the coverage of their activities in statistical enquiries. However, some activities may be omitted because they are illegal or may be hidden from the authorities because the enterprises would like to evade regulation. Other activities may also be omitted because they are undertaken by households—and not business units—that are not required to adhere to the regulations that may be applied to businesses. Activities may also be missed because of deficiencies in the data collection program. These activities collectively comprise the non-observed economy.

57. The informal economy is not synonymous with the non-observed economy. However, there is considerable overlap between the two because many of the factors that give rise to informality may also result in the units being non-observed. The *Handbook on Measuring the Non-Observed Economy (OECD 2002)* provides a conceptual framework and guidance on covering the activities that are not easily observed in constructing measures of economic activity. It identifies non-observed activities broadly as the range of activities that are most likely to be excluded from the basic data on production, income, and expenditure, as well as activities that may be missed because of deficiencies in the regular data collection programs.

58. Informal sector activities represent the production undertaken by unincorporated enterprises in the household sector. The goods and services produced may be perfectly legal as the goal may not necessarily be to evade taxes and social security contributions or to bypass government regulations. However, in the process, these activities may in fact bypass regulations and avoid taxes. They are characteristically small-scale in nature with few or no employees. Since the institutional units engaged in informal activities are part of the household sector, the assets associated with informal activities are not differentiated from household assets. In order to be in line with the ILO definition, the *2008 SNA* and the Handbook, both follow the international definition of the informal sector developed by the 15th ICLS. In sum, the household units engaged in informal activities constitute the informal sector—a subset of the household sector. It is important to note that this implies excluding the activities of households producing goods exclusively for its own final use and the activities of paid domestic workers. Both groups of activities are included in the SNA production boundary and arguably should be considered informal activities.

59. The Handbook identifies underground activities as those that are legal and productive in an economic sense but are concealed from the authorities. They may be concealed for the following reasons: (i) to avoid the payment of taxes and social security contributions; (ii) to avoid having to meet certain legal standards such as minimum wage, maximum hours, safety or health standards; or (iii) to avoid complying with certain administrative procedures. Underground activities may therefore include undeclared transactions (relating to production or income), overstated expenses for tax purposes, and non-reporting of employees or compensation paid.

Boundary Problems and Overlaps

60. There may be considerable overlap between informal sector activities and underground activities. These overlaps could introduce inconsistencies in estimation for a given economy over time and undermine cross-country comparability. For instance, informal activities also may be underground because households may attempt to evade government regulations. This may be the case for an unregistered taxi or an unlicensed electrician. Similarly, the production and sale of illegal drugs by households could also be classified as informal.

61. Informal sector activities are exclusively undertaken by households (or household enterprises) but these households may also undertake underground activities. Nevertheless, a significant proportion of underground activities are undertaken by business enterprises. These include unlicensed factories or food establishments that may employ staff and hold nonfinancial assets (e.g., factory machinery; vehicles) that are clearly distinguishable from household assets. Since they may be attempting to hide these activities from the authorities, business enterprises may also seek to exclude these activities from the regular data collection exercises.

DATA COLLECTION AND ESTIMATION TECHNIQUES

A. Overview

62. As noted, some of the non-official methods used to estimate the informal economy assume that it is not captured in the official GDP estimates. However, statistical agencies in most countries attempt to derive comprehensive GDP estimates using direct and indirect methods and, in the process, capture some of the production of the informal economy. However, agencies may refrain from publishing estimates of the informal economy, given the absence of a well-established statistical framework with specific guidance for compiling data on informal production. In some cases, the agencies may compile estimates of selected non-observed activities; however, that may be used as a proxy for the informal economy.

63. In cases where countries develop estimates of the informal economy, there are two broad approaches to derive these estimates. These are (i) direct approaches based on surveys; and (ii) indirect approaches (alternatively called "indicator" approaches) based on statistics from related sources and macro-economic estimation techniques. Barring a major and sudden transformation of the structure of the economy, the share of the informal economy to total economic activity is not likely to change substantially from one year to another. Therefore, the detailed estimates of the informal economy could be compiled for a benchmark year and indicators used to adjust the levels for subsequent years, until a new benchmark is developed. Countries would need to update the benchmarks on a regular basis so that indicators reflect the relative size of the informal economy.

B. Official Statistics

Data Sources

64. Statistical agencies undertake a range of data collection and compilation exercises to derive estimates of components of the economy that are not covered by regular data collection. Data collection methods comprise mainly surveys of individuals and/or households such as the household budget (income and expenditure) surveys. However, the source data are generally inadequate in terms of coverage, scope, and timeliness. While aiming at conducting these surveys at regular five or ten-year intervals, some countries may not stick to the recommended frequency because of resource constraints. Similarly, timeliness and coverage gaps may affect the usefulness of living standards measurement surveys—which seek to derive qualitative and quantitative measures of poverty—that may also yield data on household involvement in the informal activity.

65. The enterprise surveys conducted for the compilation of the national accounts are not always useful for collecting statistics on the informal economy. These surveys are normally based on business registers that list units with a physical business address. The register listing may in turn be derived from official enterprise registration records—enterprises registered with government agencies and required to maintain a set of accounts. It is therefore very difficult to maintain a listing of informal units as some of these units may not have separate physical addresses. One additional limitation of enterprise surveys in covering informality is that they are not designed to capture sufficiently detailed data on the labor market thus inhibiting the ability to identify informal employment in formal enterprises. Therefore, data collection on the informal economy requires dedicated surveys on informal enterprises that seek to capture basic information on production (income and expenditure), economic activity, and employment.

66. A few countries have developed mixed surveys (1-2-3 surveys) that focus specifically on informal or other non-observed activities. These surveys comprise two or three modular components that cover individuals and/or households, and enterprises. Thus, the survey may attempt to identify the households engaged in informal activity as a first step (the household enterprise), and then measure the transactions of the enterprise. One example of a consistent and successful use of mixed surveys is Vietnam where, since 2007 the General Statistics Office and the French Research Institute for Sustainable Development have collaborated on a research program to design a methodology to account for the informal economy in the national accounts and labor force statistics. Results thus far suggest significant underestimation of GDP estimates. It should be noted, however, that while the General Statistics Office has been actively involved in the program, the survey system has not yet been institutionalized and incorporated into the official statistics system.[20]

67. Labor force surveys may require some modification to capture data on informal employment. Most conventional labor force surveys only request information on primary employment, whereas the informal employment may be a secondary job. Further, considering the

[20] For a description of methods and data sources, see *Measuring the Non-Observed Economy in Vietnam: A Focus on Informal Economy* (Francois Roubaud and Nghiêm Thị Vân), presented at the Seventh IMF Statistical Forum, 2019.

sporadic nature of some informal jobs—especially when they are secondary jobs—the conventional labor force surveys may miss employment outside of the reference period. As with many data collection initiatives, the frequency of these surveys may be affected by resource constraints.

68. Compilation methods are largely driven by what source data are available. The main general indirect approaches comprise supply-based methods, demand-based methods, or commodity flow methods. Summary descriptions of the estimation methods are described below.[21]

Official Statistics Estimation Methods

69. No single approach can be recommended as the most appropriate for all countries. Furthermore, some approaches will provide only estimates of total economic activity (both formal and informal) whereas other approaches provide the opportunity to construct separate estimates. Although there are substantive and technical requirements that point to particular methods, suitability depends on a cost-benefit analysis that takes into consideration the main measurement objectives, the capability and organization of the national statistical system, the existing survey programs and sampling frames, and available financial, technical, and human resources.

70. Supply and use tables are a useful tool to identify gaps in the basic statistics. These tables reconcile the amount used of a given product with the supply.[22] For example, the output of hairdresser services, unregulated taxi services, and small-scale agriculture can be estimated based on the consumption of these goods and services by households. As compilation is costly and time consuming, developing countries are unable to produce these tables at regular intervals. Many countries attempt to produce supply and use tables at regular five-year intervals—to coincide with the rebasing and benchmarking process—but in practice, the time span may be longer. In addition, because of the technical requirements to complete the intricate balancing process, there is usually a lag of over one year between the reference period and when the data become available.

71. Supply-based methods rely on the supply of inputs used in producing goods and services. Inputs may include the primary raw materials, labor, fixed capital stock. For example, instead of relying on reports by small construction firms, output is calculated from data on sales of construction materials together with estimated labor inputs, fixed capital stock, and profit margins.

72. The labor input method is a specific application of the supply-based method. Labor input estimates derived from a household labor force survey and/or other demographic sources provide "weighting factors" to "gross-up" enterprise survey-based estimates for selected economic activities. Then, from a regular or special purpose enterprise survey, estimates of output and value-added per unit of labor input for the same activity can be combined with the labor data to obtain an estimate of economic activity. This method depends on reliable estimates of labor input and per unit ratios at a detailed level of economic activity. Furthermore, it can be used to estimate total

[21] For more detailed information on estimation techniques please see, *Measuring the Non-Observed Economy: A Handbook (OECD, CIS-STAT, ILO, IMF, 2002)*.

[22] Supply (output + imports) = Use (intermediate consumption + final consumption + capital formation + exports).

production within an economic activity or that part of production that is non-observed through enterprise surveys. In India this method is utilized to estimate an "unorganized sector" and an "organized" sector (Box 3).

Box 3. India: Estimating the Unorganized Sector

The terms unorganized sector and informal sector are used interchangeably in the official statistics for India. The unorganized sector covers units that may not maintain regular, comprehensive accounts and whose activities are not regulated under any Statutory Act. It therefore comprises enterprises operated by own-account workers and unregistered enterprises. Unincorporated enterprises that maintain accounts are considered quasi corporations and are included in the organized (formal) sector.

The benchmark estimates of gross value added for a given activity are derived using the estimated labor input and the value added per worker for the respective economic activity (the labor input method is based on the number of jobs and not the number of persons). For subsequent years, the gross value added is estimated by extrapolation using indicators relevant to the economic activity. The data for the benchmark estimates are derived from various sources: surveys of small operating units collect core data on the value of output, intermediate inputs, and changes to capital stock. Unorganized agriculture is calculated using data on land use estimates, area under cultivation for main crops, and estimates of inputs used in agriculture.

Box Table: India – Organized and Unorganized Sector by Economic Activity (as a share of gross value added)

Industry	2011/12			2017/18		
	Organized	Unorganized /informal	of which: Households	Organized	Unorganized	of which: Households
Agriculture, forestry and fishing	3.2	96.8	94.8	2.9	97.1	95.2
Mining and quarrying	77.4	22.6	22.6	77.5	22.5	22.5
Manufacturing	74.5	25.5	12.7	77.3	22.7	12
Electricity, gas, water	95.7	4.3	3.2	94.7	5.3	5.3
Construction	23.6	76.4	76.4	25.5	74.5	74.5
Accommodation; food services; trade	13.4	86.6	56	13.4	86.6	55.8
Transport, storage, communication	53	47	39.6	52.3	47.7	39.6
Financial services	90.7	9.3	0	88.1	11.9	0
Real estate, ownership of dwellings	36.9	63.1	57.2	47.2	52.8	46
Public administration and defense	100	0	0	100	0	0
Other services	58.8	41.2	22.6	52.1	47.9	24.3
TOTAL GVA at basic prices	46.1	53.9	45.5	47.6	52.4	43.1

It should be noted that there are some key differences between the ILO's basic coverage of the informal sector and India's coverage of unorganized sector. India's estimates include the following:

(i) own account production of goods;
(ii) imputed services of owner-occupied dwellings;
(iii) services of domestic servants; and
(iv) activities of unrecorded enterprises.

Source: Ministry of Statistics and Programme Implementation, India. Presented at the Seventh IMF Statistical Forum (Washington DC, 2019). The presentation is available at: https://www.imf.org/en/News/Seminars/Conferences/2019/03/25/7th-statistical-forum.

73. Demand-based methods try to determine the level of production of specific goods and services by using data about uses. These methods are applicable where the use of goods and services sufficiently describe their production. For example, household final consumption expenditures of personal services, or administrative data indicating demand for a product such as building permits. In most cases, only data on one or a limited number of major uses are available. These methods are best applied when a product has one major use.

74. Commodity-flow methods attempt to estimate economic activity by indirectly estimating the value of the total supply of goods and services. These methods are generally used for goods producing activities, or for activities associated with the supply of goods such as agriculture, distribution, and small-scale manufacturing.

75. As informal units may utilize informal financial services, surveys likely are needed. Such services include the Tanda (informal loan club) and Iqub in Ethiopia (rotating savings and credit type association). Surveys of these informal financial services would be useful to estimate credit and savings of informal units. Ascertaining the amount of credit and savings mobilized through these arrangements would be key to estimate the size of the informal economy in some countries.

Statistical Capacity and Resource Availability

76. Weak statistical capacity—mainly due to the unavailability of sufficient resources for collecting source data—remains a key impediment to developing reliable estimates of the informal economy. As noted above, coverage of the informal economy requires source data that are collected through surveys and censuses. Many developing countries attempt to undertake household income and expenditure surveys at regular five to ten years, but in practice, the frequency may be irregular and there may be significant gaps. Further, the surveys may be designed for a range of purposes, such as to derive household expenditure patterns, and may therefore lack the income/revenue detail required to derive comprehensive estimates of the informal economy.

77. Many countries therefore rely on donor funding to undertake the benchmark data collection exercises used to estimate informal activity. However, funding may not be available on a regular basis but rather provided to meet an immediate need. This is reflected in the irregular frequency of the benchmark estimates of informal activity for many developing countries.

C. Non-official Estimates

78. The non-official estimates can be classified into three broad groups:[23]

- Monetary methods assume that estimates can be modeled using monetary aggregates. These methods include the transactions method, the cash deposit/ratio, and the cash demand method.
- Global indicator methods, such as the electricity consumption approach.

[23] The Handbook on Measuring the Non-Observed Economy, to which the IMF contributed, provides a comprehensive summary of these methods.

- Multiple indicators multiple causes (MIMIC) models.

79. Non-official estimates are based on indirect approaches that assume that the unmeasured activity—the difference between the official estimates of GDP and the non-official estimates—is informal or underground. The Handbook on Measuring the Non-Observed Economy (2002) cautions that these models might draw attention "*…not because they are considered useful in obtaining exhaustive estimates of GDP or in estimating underground production, but because they tend to produce spectacularly high measures, which attract much attention from politicians and newspapers.*" Of the groups of methods listed, the MIMIC model has been used in a large number of papers to develop cross-country estimates. However, such research has faced criticism over model specification, broad assumptions underlying the estimates, and the reliability of results (see for example, Breusch 2005; Feige 2016).[24]

80. While big data is increasingly used to support the compilation of GDP, the new data sources have limited use for deriving separate estimates of the informal economy. One of these new data sources is satellite means to identify nighttime lights. Leon and Lima (2019) combine such satellite data with traditional data sources (e.g., energy consumption, agricultural production, external trade) to estimate GDP levels and growth rates for Zimbabwe.[25] Like the other macro-models, this approach assumes that the difference between the official estimates and the model estimates are due to informal and illegal activity.

CONCLUSION AND RECOMMENDATIONS

81. Compiling estimates of the informal economy is a challenging task, especially in developing economies with less advanced statistical capacity and stretched resources. However, the policy implications of the informal economy make it imperative that reliable estimates are available on a regular basis and in a timely manner. In this regard, the estimates of the informal economy should be considered part of the core economic statistics compiled by statistical agencies. It is recognized that statistical agencies, especially in developing economies, face a range of challenges relating to data availability and resources that that may hamper the compilation of these statistics on a regular basis. The following are some key recommendations in two groups: (i) recommendations for the IMF and other international organizations that could provide support to national statistical agencies; and (ii) recommendations for national statistical agencies that provide broad guidance on how they may approach the compilation process.

International Organizations

- Promote a consistent methodological framework and clarify the concepts and definitions relating to the informal economy. The framework should be consistent across all statistical datasets (in

[24] See also IMF Staff Report, April 2015, "Current Challenges in Revenue Mobilization: Improving Tax Compliance", Appendix II: MIMIC—and its Critics.

[25] See "Estimating Economic Activity in Zimbabwe Using Big Data" (Gene Leon and Frederico Lima), presented at the Seventh IMF Statistical Forum, 2019.

particular, national accounts, external sector statistics, labor statistics) and be acceptable to labor statisticians and macroeconomic statisticians.[26] The conceptual and methodological guidance should be integrated into the next version of the international statistical standards.

- Identify country best practices in data collection and develop practical guidance for measuring the informal economy. The practical guidance should take account of the technical and resource availability in the countries that have the greatest need for estimating the informal economy.
- Improve coordination among donor agencies that provide support for statistical activities and for measuring the informal economy. Donor support for compiling estimates of the informal economy may reflect the immediate policy needs of the funding agency. There is a need for better coordination among donor agencies aimed at adequate funding with regular frequency.
- Develop dedicated training and technical assistance focused on measuring the informal economy—along with improving annual and quarterly GDP estimates.
- Consider mechanisms to support national statistical agencies in collecting data from multinational corporations and digital platforms.

National Statistical Agencies

- Develop estimates of the informal economy as core aggregates—alongside GDP, GNI—for dissemination at regular frequency. Quarterly frequency is preferable, although it is recognized that this is likely to be resource intensive.
- Amend the labor statistics collection programs to capture information on employment status, economic activity of employment, and full-time equivalents. The data will be useful in deriving estimates of labor output.
- Compile supply and use tables at a regular frequency. Considering the cost implications, supply and use tables should be compiled with a minimum frequency of five years.
- Promote the use of administrative data, in particular from the tax authorities, to provide estimates of informality in the digital economy.

[26] The ILO established the *Working Group for the Revision of the Statistical Standards of Informality* in 2019 and comprises labor statisticians, economic statisticians, representatives of workers' and employers' organizations, and representatives of international organizations. The joint BOPCOM/ISWGNA Task Team on the Informal Economy was established in 2020 and will contribute to the work relating to the updates of the *2008 SNA* and the IMF's *Balance of Payments and International Investment Position Manual, sixth edition (BPM6).*

Appendix I. IMF Committee on Balance of Payments Statistics—Task Force on Informal Economy

At its 2017 meeting, the International Monetary Fund's Committee on Balance of Payments Statistics (the Committee) endorsed the creation of a Task Force on the Informal Economy (TFIE) with a two-year mandate. The primary objective of the TFIE was to take stock of country practices with the aim of identifying data collection techniques and compilation methods relevant for covering the informal economy in external sector statistics.

Countries use a range of statistical practices to cover the informal economy. These practices are determined by the availability of source data, resources, and statistical capacity. User interest and policy needs also play a role in determining which components are addressed. In general, informal economy coverage, in both the national and international accounts, requires additional source data, including through surveys. However, the unavailability of resources and statistical capacity, especially in developing countries, remain key impediments.

Following the TFIE's Phase I work on producing an inventory of economies' experiences in collecting, compiling, and disseminating informal economy data, work in Phase II culminated with the launch of a web platform aimed at enabling peer learning. The platform disseminates metadata for 24 economies, including the country members of the TFIE, covering almost 57 compilation practices on the informal economy in the international accounts and/or national accounts.

For the international accounts, the key compilation practices and issues are as follows:

- Balance of payments compilation practices for informal economy activities center on the current account, especially on goods. This is followed by personal transfers and workers' remittances in the secondary income account; and travel, transport, prostitution, gambling and smuggling of migrants' services in the services account.
- In general, economies use a combination of direct and indirect sources to estimate the size of IE activities. Some economies have developed direct (data-specific) surveys for some components or draw on micro studies or surveys designed for other purposes as inputs for estimation.
- Economies use indirect estimation methods generally aligned to either national accounts compilation, or to economic modelling.
- Availability of separately identifiable data on informal economy activities remains limited.
- Data sources, enterprise registration, and methodology are the major challenges reported by compilers.

Final Recommendations

The TFIE recommendations to improve the collection and compilation of informal economy data are:

- The dissemination of encouraged collection, compilation, and dissemination practices should continue through the dedicated web platform, which serves as a resource to assist other compilers in improving the coverage of the international accounts.

- Collection techniques and compilation methods should be tailored to take account of available data sources, statistical capacity, resources, and an adequate assessment of costs/benefits for including a specific informal economy activity in data compilation. Due to the broad range of activities in the informal economy and the limited resources available for its compilation, delineation of the "typologies" (informal, underground, or illegal breakdowns) should assume secondary importance, with as accurate an estimation of the totals remaining the priority.

- Coordination between external sector statistics and national accounts compilers should be stepped up with a view to moving towards a more integrated approach in addressing coverage of the informal economy in the balance of payments and rest of world accounts. The exchange of experiences and knowledge between national accounts and balance of payments compilers, and, also, between regulatory/policy agencies (such as Customs) and statistics-producing agencies could serve to develop, for example, statistical models to estimate the informal economy. National compilers are encouraged to use innovative data sources, such as those provided by Intelligence Financial Units and law enforcement agencies.

- Greater emphasis on informal economy data issues specific to the financial account and the IIP is needed, and national compilers are encouraged to extend initiatives beyond the current account, where applicable. At a minimum, national compilers should, where necessary, use international databases in mirror statistics exercises—such as the BIS' International Banking Statistics (particularly deposits)—to detect and address data gaps.

- The identification of regional trends—and corresponding regional approaches that take account of statistical capacity—provides an informed basis for tackling the issue of informal economy data coverage. Estimation methods may be specific to the most important buckets of informal, underground and illegal activities in countries or regions. For instance, some Latin-American countries may focus on drug trafficking or illegal mining data; some European countries on arms trafficking and smuggling of migrants; and some African countries on cross border informal trade and other illicit flows.

- Where possible, adequate legal and institutional frameworks to encourage the collection and compilation of informal economy data is recommended. Furthermore, the legal framework (including confidentiality), organizational structure, and coordination among various compilation agencies are critical to efforts to improve measurement. A concrete example is the statistical regulations in place in European Union countries to compile some illegal economic activities: illegal drugs, trafficking of alcohol and tobacco, and prostitution.

- A reassessment of the concept of the informal economy with a view to greater harmonization is needed. This would also strengthen cross-country data comparability.

- The use of big data could complement traditional data sources for informal economy compilation. Examples include drug trafficking and remittances.
- The IMF and other international organizations should strengthen technical assistance and training to assist economies in identifying data gaps and in compiling data on relevant informal economy activities. This will require an assessment of areas where the informal economy is of statistical relevance.

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