JOBS DIAGNOSTICS
GUIDED ENQUIRY
IDENTIFYING SYMPTOMS IN THE DATA

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DIAGNOSIS STARTS WITH THE COLLECTION OF *SYMPTOMS OVER TIME* THROUGH *STANDARDIZED* DATA GATHERING AND *BENCHMARKING AGAINST OTHERS*

Test	Result	Units	Reference interval
Albumin	3.9	g/dL	3.5-5.0
ALT (SGPT)	19	IU/L	6-31
AST (SGOT)	21	IU/L	11-36
Alkaline phosphatase	57	mg/dL	38-126
Total bilirubin	0.8	mg/dL	0.2-1.3
BUN	11	mg/dL	7-17
Calcium	9.2	mg/dL	8.4-10.2
Chloride	101	mmol/L	96-107
Creatinine	0.8	mg/dL	0.7-1.2
Glucose	98	mg/dL	65-105
Lactate dehydrogenase (LDH)	149	IU/L	100-250
Magnesium	0.89	mmol/L	0.65-1.05
Potassium	4.0	mmol/L	3.6-5.0
Sodium	141	mmol/L	137-145

Birthweight (g)	Systolic (mm Hg)	Diastolic (mm Hg)
501-750	50-62	26-36
751-1000	48-59	23-36
1001-1250	49-61	26-35
1251-1500	46-56	23-33
1501-1750	46-58	23-33
1751-2000	48-61	24-35
2001-3000	59	35

BOYS HEIGHT & PERCENTILE

BMI	Classification	Range of pregnancy weight gain
Less than 18.5	Underweight	12.5–18kg
18.5–24.9	Normal	11.5–16kg
25–29.9	Overweight	6.8–11.3kg
More than 30	Obese	5–9.1kg

- We need to ask the right questions through a structured enquiry (a theory of change)
- We need to measure the answers the same way
- We need a range of normality to check observed results against
- *Normality* depends on the characteristics of the person and their condition

ASKING THE RIGHT QUESTIONS REQUIRES A STRUCTURED ENQUIRY AROUND A THEORY OF CHANGE

http://datatopics.worldbank.org/JobsDiagnostics/index.html

COLLECTING *COMPARABLE* SYMPTOMS REQUIRES STANDARD DATA TOOLS AND METRICS
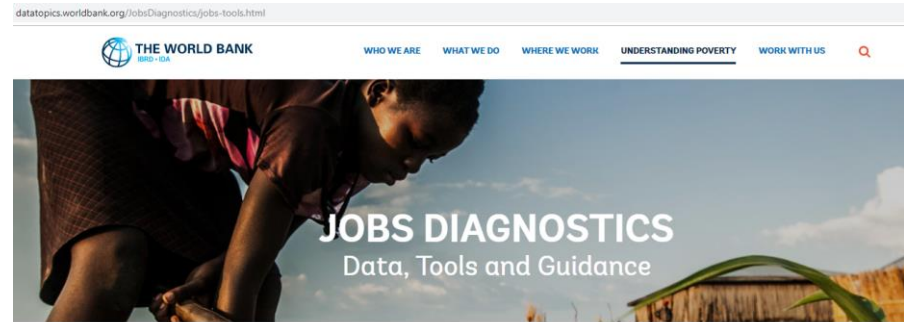
$$180\,cm = 70.2\,in$$
$$= 5ft + 10.2\,in$$
$$= 5'\ 10.2''$$

Macro tools will be discussed in Day 1 Session 5, and outputs of supply and firm dynamics tools will be discussed Day 2 sessions 2 and 3.

STANDARDIZED DATA

STANDARD DATA

Global Jobs Indicators Database:

- 1200 surveys processed
- 150 countries covered
- 73 variables
- Each variable disaggregated by female/male, youth/adult, rural/urban, skilled/unskilled
- Uses standard techniques for data labelling and cleaning (I2D2 project)
- Applies new Q-check quality controls (adopted also by Poverty GP)
- Benchmarks variables for region and income group

https://datacatalog.worldbank.org/dataset/global-jobs-indicators-database

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Global Jobs Indicators Database

+ Add Resource   📝 Edit Draft

DATA ACCESS AND LICENSING

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The Global Jobs Indicators Database (JoIn) presents - for 150 countries- more than 60 of the standardized labor supply indicators which are most commonly used in country Jobs Diagnostics. These cover socio-demographics, labor force status and employment type, employment composition by sector and occupation, education level completed, hours worked, and earnings. The database was compiled from national surveys and subnational microdata which was first harmonized for the Bank-wide I2D2 More...

Overview   Data & Resources   Visualization   Additional Information   Citations

Type: Time Series

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Global Jobs Indicators Data base Online

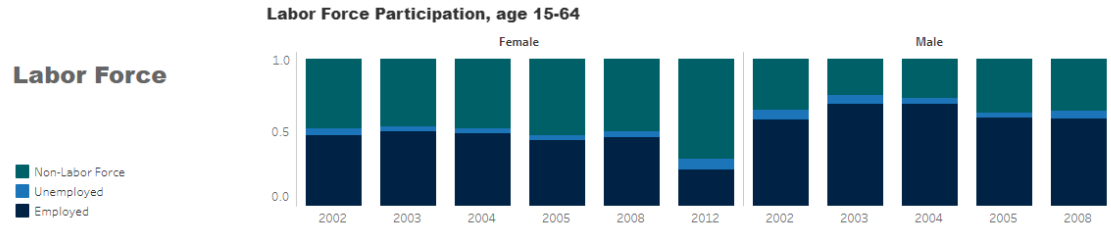| Country name	Country name	Year of survey	Survey Data Source	Data Type	Total population	Children, aged 0-14	Youth, aged 15-24	Adult, aged 25-64	Elderly, aged 65+	Urban Population (% of total Population)	Working Age Population, aged 15-64 (% of total Pop.)	Dependency Rate, all aged to 15-64	Youth Dependency Rate, younger than 15 compared to 15-64	Old Age Dependency Rate, older than 64 compared to 15-64	Labor Force, aged 15-64	Labor Force Participation Rate, aged 15-64	Female Labor Force Participation Rate, aged 15-64	Not in labor force or education rate among youth, aged 15-24	Employment to Population Ratio, aged 15-64	Employment Rate, aged 15-64	Unemployment Rate, aged 15-64	Youth Employment Rate, aged 15-24	Youth Unemployment Rate, aged 15-24	Wage employees, aged 15-64	Self-employed, aged 15-64	Unpaid, aged 15-64	Employers, aged 15-64	Informal jobs, aged 15-64	Formal jobs, aged 15-64	Employed with missing formality information, aged 15-64
Russian	Russian	2004	1055 rlms	8296.06	0.15078	0.15355	0.52016	0.17552	0.71694	0.6737	0.46026	0.25061	0.20964	3996.64	0.71695	0.68092	0.55632	0.60825	0.84839	0.15161	0.72135	0.27865	0.85352	0	0.08934	0.05714	0	0	1
Russian	Russian	2005	1056 hbs_v01_	1.4E+08	0.14822	0.17817	0.57689	0.09672	0.73228	0.75506	0.37852	0.21054	0.16798	7.9E+07	0.74787	0.72304	0.0888	0.7343	0.98186	0.01814	0.94479	0.05521	0.85989	0.12332		0.01556	0	0	1
Russian	Russian	2005	1057 rlms	7987.83	0.14266	0.15915	0.5259	0.17229	0.71335	0.68504	0.45203	0.23802	0.21401	3924.7	0.72496	0.6871	0.58889	0.6187	0.85343	0.14657	0.69553	0.30447	0.86248	0	0.09175	0.04577	0	0	1
Russian	Russian	2006	1059 rlms	9965.72	0.14441	0.16178	0.53117	0.16264	0.72245	0.69294	0.43894	0.23251	0.20643	4979.14	0.72623	0.69	0.38329	0.63822	0.87881	0.12119	0.76388	0.23612	0.88802	0	0.07864	0.03334	0	0	1
Russian	Russian	2007	1060 hbs_v01_	1.4E+08	0.14921	0.17483	0.58406	0.0919	0.73211	0.75506	0.36712	0.20209	0.16503	8.1E+07	0.76681	0.79444	0.61191	0.75329	0.98236	0.01764	0.94922	0.05078	0.84109	0.14159		0.01559	0	0	1
Russian	Russian	2007	1061 rlms	9950.39	0.14062	0.1601	0.53519	0.16409	0.7242	0.69529	0.43363	0.23006	0.20357	4985.99	0.72566	0.68538	0.37562	0.65037	0.89625	0.10376	0.81434	0.18566	0.90427	0	0.06825	0.02748	0	0	1
Russian	Russian	2008	1062 hbs_v01_	1.4E+08	0.15486	0.16749	0.59474	0.08291	0.73285	0.76223	0.35805	0.20263	0.15541	8.3E+07	0.77967	0.761	0.60012	0.76661	0.98325	0.01675	0.94717	0.05283							
Russian	Russian	2008	1063 rlms	10042.3	0.14449	0.15494	0.53963	0.16093	0.73354	0.69458	0.4363	0.23771	0.19859	5022.71	0.72049	0.68022	0.3998	0.65217	0.90568	0.09432	0.82935	0.17065	0.91795	0	0.0569	0.02515	0	0	1
Russian	Russian	2009	1064 hbs_v01_	1.4E+08	0.16029	0.15756	0.60361	0.07854	0.733	0.76117	0.35255	0.20691	0.14565	8.2E+07	0.77816	0.7583	0.20891	0.75991	0.97655	0.02345	0.92309	0.07691	0.83326	0.14554		0.01996	0	0	1
Russian	Russian	2009	1065 rlms	9268.44	0.14061	0.14813	0.55064	0.16063	0.85905	0.69877	0.42754	0.23289	0.19465	4487.97	0.69321	0.66867	0.40994	0.63906	0.92189	0.07811	0.8262	0.1738	0.91949	0	0.05757	0.02294	0	0	1
Rwanda	Rwanda	2000	1066 eicv	7979930	0.45302	0.22927	0.28946	0.02825	0.10467	0.51873	0.91706	0.86221	0.05485	3158371	0.763	0.77016	0.14259	0.75618	0.99106	0.00894	0.98608	0.01392	0.11437	0.49622	0.3852	0.00422			
Rwanda	Rwanda	2005	1067 eicv	9491397	0.43451	0.23224	0.30247	0.03079	0.16553	0.53471	0.84948	0.79434	0.05514	4182420	0.8241	0.83633	0.05012	0.79286	0.96209	0.03791	0.96125	0.03875	0.20928	0.26208	0.45589	0.07275	0	0	1
Rwanda	Rwanda	2010	1068 eicv	1.1E+07	0.42794	0.20736	0.33114	0.03355	0.14817	0.5385	0.85471	0.79183	0.06288	4733087	0.93946	0.94796	0.00923	0.88737	0.94456	0.05544	0.92252	0.07748	0.2952	0.10526	0.59954	0	0	0	1
Rwanda	Rwanda	2013	1069 eicv	1.1E+07	0.41904	0.19951	0.34787	0.03357	0.17256	0.54738	0.83075	0.76725	0.0635	5374215	0.86863	0.87283	0.02591	0.85043	0.97904	0.02096	0.96975	0.03025	0.28077	0.3713	0.3421	0	0.08222	0.0438	0.87398
Sudan	Sudan	2009	1070 nbhs	2.9E+07	0.42332	0.19482	0.33998	0.04189	0.35601	0.53479	0.88117	0.80036	0.08081	7557815	0.48407	0.23911	0.27451	0.42238	0.87256	0.12744	0.79243	0.20757	0.45997	0.35041	0.10421	0.05701	0		
Senegal	Senegal	1995	1071 edmc	8546	0.38076	0.23461	0.35373	0.03089	1	0.58835	0.69968	0.64718	0.05251	2733	0.59426	0.43416	0.29595	0.54251	0.91292	0.08708	0.89774	0.10226	0.40096	0.39534	0.19325	0.01045			
Senegal	Senegal	2001	1072 esam	9569469	0.43529	0.20862	0.31733	0.03877	0.41793	0.52594	0.87358	0.802	0.07158	3148099	0.63269	0.49998	0.32165	0.53635	0.84773	0.15227	0.79206	0.20794	0.17518	0.77549	0.02984	0.0195	0		
Senegal	Senegal	2005	1073 esps	1.2E+07	0.42285	0.21386	0.32571	0.03758	0.41423	0.53957	0.85293	0.78327	0.06965	3296827	0.51124	0.34699	0.38933	0.45878	0.89546	0.10454	0.85051	0.14949	0.24903	0.59596	0.15502	0			
Senegal	Senegal	2011	1074 esps	1.5E+07	0.43476	0.19376	0.3286	0.04288	0.41574	0.52236	0.93909	0.85579	0.0833	3850335	0.62308	0.49866	0.27202	0.60681	0.97389	0.02611	0.97831	0.02169	0.23421	0.4347	0.32778	0.00332	0.86914	0.06583	0.06504
Solomon	Solomon	2005	1076 hies	539459	0.39572	0.19775	0.38066	0.02587	0.15892	0.57841	0.69991	0.66201	0.0379	213355	0.68376	0.65963	0.3704	0.68376	1	0	1	0	0.17315	0.82685	0	0	0	0	1
Sierra Le	Sierra Le	2003	1077 slihs	4818910	0.42091	0.1863	0.35417	0.03863	0.61409	0.54046	0.91712	0.83907	0.07805	1740525	0.67326	0.68083	0.14945	0.65072	0.96653	0.03347	0.93754	0.06246	0.11159	0.49209	0.39632	0	0.0178	0.08783	0.89437
Sierra Le	Sierra Le	2011	1078 slihs	5832033	0.38615	0.19841	0.37588	0.03956	0.37606	0.57429	0.75145	0.67909	0.07236	1854177	0.81153	0.80474	0.16942	0.78921	0.97249	0.02751	0.96087	0.03913	0.07304	0.18342	0.70867	0.03486	0		
Sierra Le	Sierra Le	2014	1079 lfs	4994198	0.40465	0.20484	0.34946	0.04106	0.3264	0.5543	0.76236	0.6915	0.07087	1617742	0.58439	0.58933	0.42784	0.55406	0.9481	0.0519	0.8996	0.1004	0.11085	0.79661	0.06671	0.02584	0.0394	0.05446	0.90614
El Salvad	El Salvad	1991	1080 ehpm_v0	5161684	0.40917	0.19894	0.33972	0.05217	0.47688	0.53806	0.85387	0.75377	0.1001	1719845	0.61867	0.4249	0.25248	0.56618	0.91515	0.08445	0.85852	0.14148	0.59282	0.25629	0.08004	0.07085	0.2407	0.68518	0.07412
El Salvad	El Salvad	1995	1081 ehpm	5464185	0.3751	0.2113	0.35365	0.05995	0.54683	0.56495	0.79117	0.68196	0.10921	1940230	0.62851	0.44466	0.22035	0.5825	0.92678	0.07322	0.86711	0.13289	0.59004	0.27474	0.07751	0.05771	0.73471	0.26432	0.00098
El Salvad	El Salvad	1996	1082 ehpm	5696509	0.36739	0.2128	0.35859	0.06122	0.548	0.5714	0.77439	0.66452	0.10987	2002576	0.61524	0.43211	0.22397	0.5691	0.92501	0.07499	0.86854	0.13146	0.59382	0.2729	0.08387	0.04941	0.30491	0.24319	0.4519
El Salvad	El Salvad	1998	1083 ehpm_v0	6046257	0.37281	0.2051	0.36442	0.05767	0.57832	0.56952	0.78117	0.67618	0.10499	2205017	0.64035	0.47518	0.21012	0.59205	0.92457	0.07543	0.87123	0.12877	0.61408	0.268	0.08673	0.03118	0.64154	0.31096	0.0475
El Salvad	El Salvad	1999	1084 ehpm_v0	5872000	0.35729	0.20798	0.37001	0.06472	0.57871	0.57799	0.75195	0.64009	0.11185	2144311	0.63523	0.47714	0.21737	0.5903	0.92927	0.07073	0.87407	0.12593	0.62344	0.2588	0.07526	0.0425	0.62894	0.32089	0.05017
El Salvad	El Salvad	2000	1085 ehpm_v0	6272353	0.35486	0.20328	0.374	0.06785	0.5842	0.57728	0.75319	0.63733	0.11586	2249695	0.6213	0.46996	0.23497	0.58797	0.94634	0.05366	0.90552	0.09448	0.59783	0.28566	0.06538	0.05114	0.29893	0.2989	0.40217
El Salvad	El Salvad	2001	1086 ehpm_v0	6428672	0.34665	0.20405	0.37971	0.06959	0.58766	0.58875	0.73954	0.6184	0.12114	2350927	0.62645	0.47149	0.22644	0.59159	0.94435	0.05565	0.91544	0.08456	0.6052	0.26655	0.08401	0.04424	0.31126	0.29394	0.3948
El Salvad	El Salvad	2002	1087 ehpm_v0	6506824	0.34326	0.19943	0.38487	0.07244	0.58963	0.5843	0.73752	0.61269	0.12484	2317070	0.60945	0.46826	0.24141	0.5801	0.95185	0.04815	0.91805	0.08195	0.58858	0.29059	0.07638	0.04445	0.28784	0.30075	0.4112
El Salvad	El Salvad	2003	1088 ehpm_v0	6639010	0.34974	0.19968	0.3883	0.06229	0.59184	0.58798	0.73946	0.6307	0.10876	2515099	0.64431	0.49204	0.21719	0.59958	0.93058	0.06942	0.88613	0.11387	0.60889	0.27243	0.07273	0.04595	0.64291	0.30722	0.04988
El Salvad	El Salvad	2004	1089 ehpm_v0	6756786	0.34043	0.19731	0.3932	0.06906	0.59672	0.59051	0.7297	0.61725	0.11245	2458387	0.61614	0.47102	0.23853	0.58891	0.95581	0.04419	0.92328	0.07672	0.622	0.26948	0.06602	0.0425	0.33076	0.29111	0.37813
El Salvad	El Salvad	2005	1090 ehpm_v0	6864080	0.34165	0.19328	0.39401	0.07107	0.59847	0.5728	0.72977	0.6125	0.11727	2558541	0.6349	0.48173	0.21231	0.58746	0.92559	0.07441	0.85749	0.14251	0.5956	0.25867	0.08118	0.04255	0.65188	0.30135	0.04677
El Salvad	El Salvad	2006	1091 ehpm_v0	6980279	0.3394	0.1928	0.3988	0.06901	0.59906	0.59159	0.7163	0.60032	0.11597	2564789	0.62109	0.48572	0.23687	0.59759	0.96216	0.03784	0.9264	0.0736	0.63267	0.25362	0.07098	0.04273	0.33429	0.29837	0.36733
El Salvad	El Salvad	2007	1092 ehpm_v0	5744575	0.32692	0.18946	0.40919	0.07443	0.62651	0.59866	0.69922	0.57634	0.12289	2168783	0.63064	0.49171	0.22293	0.60615	0.96116	0.03884	0.93128	0.06872	0.62072	0.26293	0.0742	0.04215	0.32002	0.30071	0.37928
El Salvad	El Salvad	2008	1093 ehpm_v0	6122413	0.32588	0.19623	0.40441	0.07347	0.64843	0.60065	0.69772	0.57659	0.12112	2338591	0.63593	0.49185	0.20896	0.61132	0.96129	0.03871	0.9244	0.0756	0.61246	0.27289	0.07442	0.04023	0.30302	0.3094	0.38758
El Salvad	El Salvad	2009	1094 ehpm_v0	6150953	0.31454	0.20006	0.41096	0.07445	0.63152	0.61102	0.67923	0.55889	0.12034	2373070	0.63142	0.49322	0.21517	0.59959	0.9496	0.0504	0.90449	0.09551	0.5909	0.28979	0.08031	0.039	0.30685	0.28405	0.4091
El Salvad	El Salvad	2012	1095 ehpm_v0	6249262	0.28501	0.2099	0.42584	0.07925	0.62574	0.63575	0.60731	0.48184	0.12547	2547956	0.64133	0.50074	0.20473	0.61432	0.95789	0.04211	0.91446	0.08554	0.59905	0.27498	0.08788	0.03809	0.32045	0.2786	0.40095

	Employment composition by sector and occupation																					Labor Market Outcomes								Education			
	Sector					Sector, detail						Occupation										Working Hours			Earnings					Education attainment			
	Share of all employed by					Share of all employed by detailed sectors, excluding						Share of all employed by occupations										Share of all								Share of working age population			
Country name	Agriculture, aged 15-64	Industry, aged 15-64	Services, aged 15-64	Female in non-agricultural employment, aged 15-64	Youth in non-agricultural employment, aged 15-64	Mining and Public Utilities, aged 15-64	Manufacturing, aged 15-64	Construction, aged 15-64	Wholesale/retail, aged 15-64	Transport & Communication, aged 15-64	Other services, aged 15-64	Senior Officials, aged 15-64	Professionals, aged 15-64	Technicians, aged 15-64	Clerks, aged 15-64	Service and Market Sales, aged 15-64	Skilled Agriculture, aged 15-64	Craft Workers, aged 15-64	Machine Operators, aged 15-64	Elementary Occupations, aged 15-64	Armed Forces	Average weekly working hours	Underemployment, <35 hours per week	Excessive working hours,>48 hours per week	Earnings for wage workers per hour, local currency nominal	Earnings for wage workers per month, local currency nominal	Earnings for wage workers per month in agriculture, local currency	Earnings for wage workers per month in industry, local	Earnings for wage workers per month in service, local	No Education	Primary Education	Secondary Education	Post Secondary Education
Pakistan	0.3717	0.26428	0.36402	0.37302	0.62065	0.01084	0.15613	0.09731	0.15371	0.05563	0.15468	0.07186	0.04967	0.02669	0.02425	0.10588	0.27554	0.14577	0.06224	0.23499	0.00309				59.7234	10747.7	4996.89	9808.72	13992.9	0.48276	0.21886	0.26703	0.03135
Pakistan	0.40388	0.24402	0.3521	0.28341	0.57957	0.0101	0.15748	0.07643	0.14922	0.05271	0.15017	0.02269	0.04973	0.0327	0.01607	0.15981	0.35389	0.13928	0.06587	0.15995	1.2E-05				71.9466	14873.5	8219.55	13616.2	17935.4				
Panama	0.28314	0.1465	0.55704	0.95574	0.62622	0.01449	0.1001	0.1001	0.14477	0.05795	0.36764	0.0491	0.11952	0	0.10435	0.08178	0.26768	0.13216	0.04745	0.19796	0	41	0.16431	0.11976	2.07037	372.169	254.926	350.41	399.361	0.05033	0.38239	0.43345	0.13383
Panama	0.252	0.14875	0.59925	0.97417	0.6783	0.01377	0.09815	0.03683	0.20103	0.07104	0.32718											41	0.15933	0.12786	2.16652	387.449	242.712	340.116	420.004	0.05901	0.15001	0.57188	0.21909
Panama	0.19454	0.18456	0.62091	0.96894	0.76035	0.0125	0.10891	0.06314	0.20954	0.07446	0.3369	0.02779	0.10999	0.04558	0.13016	0.15557	0.18721	0.15618	0.06071	0.12652	0.00029	42	0.17435	0.15915	2.29449	411.431	220.193	347.92	457.801	0.04363	0.13429	0.57723	0.24485
Panama	0.17322	0.18613	0.64061	0.97786	0.78919	0.01068	0.10611	0.06739	0.22573	0.06955	0.34495	0.02958	0.11128	0.04743	0.13962	0.16313	0.1701	0.15212	0.06101	0.12536	0.00036	42	0.16365	0.16533	2.39137	380.569	483.644	380.456	460.204	0.04118	0.12575	0.57927	0.2538
Panama	0.16414	0.1835	0.65236	0.98369	0.80901	0.01093	0.09915	0.07342	0.22873	0.0691	0.35453	0.02757	0.1123	0.05327	0.13327	0.16999	0.16008	0.15115	0.06385	0.12853	0	42	0.1834	0.1735	2.32557	418.513	214.716	379.655	453.245	0.04178	0.11737	0.58929	0.25173
Panama	0.16194	0.18446	0.6536	0.98221	0.81682	0.00852	0.09854	0.0774	0.23377	0.07778	0.34205	0.03162	0.11038	0.04813	0.14107	0.16967	0.15629	0.15275	0.06962	0.12045	0	41	0.18111	0.16633	2.41095	433.97	225.886	388.347	471.932	0.03791	0.10962	0.59774	0.25473
Panama	0.15509	0.17665	0.66826	0.98432	0.8239	0.00785	0.09362	0.07518	0.2306	0.0777	0.35995	0.02748	0.12136	0.05	0.14823	0.16543	0.15211	0.14324	0.06944	0.12271	0	41	0.17164	0.15113	2.54104	457.236	239.291	412.046	490.829	0.03743	0.10738	0.60151	0.25366
Panama	0.20572	0.17091	0.62337	0.94145	0.71758	0.01119	0.09129	0.06843	0.21778	0.07709	0.32849	0.01067	0.10461	0.02689	0.01984	0.02762	0.05422	0.23094	0.26951	0.25525	0.00045	41	0.19783	0.15078	2.41456	423.84	211.016	373.083	463.446	0.06405	0.12127	0.57763	0.23705
Panama	0.1974	0.16625	0.63635	0.9449	0.73466	0.00943	0.09062	0.06619	0.22192	0.0761	0.33833	0.01119	0.10128	0.0294	0.01995	0.02588	0.05409	0.23814	0.26035	0.25888	0.00085	40	0.23162	0.16403	2.45505	436.213	216.97	385.375	477.546	0.0595	0.11734	0.58063	0.24253
Panama	0.19463	0.17309	0.63228	0.94091	0.73571	0.00891	0.09294	0.07124	0.2114	0.0771	0.3344	0.01178	0.10129	0.03064	0.02107	0.02885	0.04963	0.25189	0.24649	0.25721	0.00016	40	0.23054	0.16508	2.45861	440.484		382.76	482.317	0.05369	0.10971	0.59006	0.24653
Panama	0.17536	0.1789	0.64574	0.95104	0.77565	0.00783	0.09393	0.07715	0.22944	0.07654	0.33975	0.01062	0.09882	0.0314	0.01988	0.02975	0.05054	0.25247	0.24651	0.25959	0.00042	40	0.24535	0.167	2.46882	440.596	196.448	388.034	483.098	0.04751	0.10381	0.6013	0.24738
Panama	0.17701	0.17277	0.65022	0.93278	0.76664	0.00719	0.09167	0.07392	0.24002	0.07525	0.33494	0.01048	0.09556	0.0302	0.01868	0.03184	0.05009	0.25144	0.24655	0.26514	3.7E-05	39	0.27004	0.16575	2.42017	432.49	210.078	383.411	469.73	0.04579	0.10288	0.59431	0.25703
Panama	0.17971	0.18192	0.63838	0.93222	0.75715	0.00873	0.09213	0.08106	0.23087	0.07209	0.33542	0.01039	0.09522	0.03338	0.01641	0.02932	0.04876	0.26428	0.22913	0.27245	0.00065	39	0.25595	0.14771	2.49681	445.886	214.394	399.707	485.635	0.04632	0.09816	0.59275	0.26277
Panama	0.17241	0.1918	0.63578	0.9263	0.76587	0.00913	0.08842	0.09426	0.2327	0.07007	0.33301	0.01024	0.09733	0.0355	0.0187	0.02837	0.04898	0.26275	0.22346	0.27432	0.00034	39	0.24506	0.13462	2.53972	455.882	220.93	420.524	493.259	0.0471	0.09091	0.58363	0.27836
Panama	0.16418	0.19248	0.64334	0.92985	0.78441	0.00745	0.08546	0.09957	0.23706	0.07356	0.33272	0.01164	0.09833	0.03636	0.01949	0.02839	0.04844	0.25709	0.22707	0.27289	0.00031	39	0.24218	0.13828	2.57046	486.136	245.719	430.961	528.861	0.03963	0.08902	0.59209	0.27927
Panama	0.16422	0.19584	0.63994	0.92303	0.77883	0.00877	0.08759	0.09997	0.2288	0.07734	0.3338	0.01248	0.1004	0.03547	0.02194	0.03109	0.04788	0.26664	0.22826	0.25579	5.9E-05	39	0.24032	0.13292	2.89205	518.534	253.182	479.206	559.505	0.04025	0.0889	0.58368	0.28717
Panama	0.15936	0.18973	0.65091	0.92617	0.78559	0.00738	0.08219	0.10015	0.22837	0.07989	0.34265	0.01307	0.10793	0.03854	0.02086	0.02933	0.04698	0.26058	0.22905	0.25337	0.00029	39	0.23105	0.11827	3.16327	568.548	277.752	516.597	613.111	0.03897	0.08851	0.58506	0.28747
Panama	0.15023	0.18749	0.66228	0.93407	0.80138	0.00746	0.07142	0.1081	0.2344	0.07849	0.3494	0.0597	0.10127	0.04444	0.07302	0.17985	0.10046	0.12608	0.07684	0.19833	0	40	0.20391	0.13545	3.44476	616.123	301.891	564.099	659.216	0.04236	0.08956	0.56739	0.30069
Panama	0.15174	0.18184	0.66642	0.9188	0.78582	0.00663	0.06987	0.10534	0.23523	0.08068	0.3505	0.06678	0.10558	0.08125	0.07029	0.18516	0.10077	0.11943	0.07238	0.19835	0	38	0.23163	0.12587	3.88274	694.37	325.137	648.698	742.124	0.04104	0.08479	0.57831	0.29586
Peru	0.2981	0.16171	0.54018	0.75429	0.67609	0.01121	0.10336	0.04713	0.26157	0.05525	0.22336	0.00781	0.0743	0.05693	0.0493	0.13302	0.1359	0.09433	0.06938	0.37035	0.0087	41	0.34802	0.3317	3.74904	674.828	470.934	663.387	720.381	0.11056	0.18217	0.4205	0.28677
Peru	0.3149	0.14589	0.53921	0.7421	0.64259	0.01024	0.08938	0.04627	0.26412	0.05309	0.22199	0.00552	0.07261	0.06487	0.04135	0.14813	0.12775	0.08528	0.06962	0.37712	0.00775	37	0.40151	0.30308	4.01049	721.888	474.309	741.124	761.03	0.09275	0.19595	0.42122	0.29008
Peru	0.32517	0.13694	0.53789	0.70784	0.64363	0.0094	0.08617	0.04137	0.25544	0.05923	0.22322	0.00774	0.06599	0.06143	0.03579	0.15118	0.12946	0.08079	0.0684	0.39126	0.00796	37	0.42622	0.30036	4.12976	743.357	456.083	736.178	805	0.10228	0.18542	0.41936	0.29294
Peru	0.31753	0.13974	0.54274	0.71376	0.64176	0.0081	0.09196	0.03968	0.27951	0.05901	0.20422	0.00581	0.0641	0.06144	0.04135	0.14865	0.12441	0.08254	0.06978	0.39871	0.01106	39	0.38737	0.33171	3.66786	660.215	430.225	670.709	712.104	0.08402	0.17204	0.43281	0.31112
Peru	0.32391	0.14364	0.53245	0.71015	0.63323	0.00705	0.0996	0.03699	0.26325	0.05431	0.21467	0.00473	0.06932	0.05437	0.03383	0.1464	0.12864	0.08936	0.07083	0.39189	0.01063	39	0.39214	0.32833	3.70364	666.656	399.463	665.904	729.73	0.09363	0.18977	0.41217	0.30444
Peru	0.32357	0.1479	0.52854	0.7068	0.62874	0.01042	0.10055	0.03693	0.25112	0.05649	0.22092	0.00488	0.076	0.05621	0.03846	0.13816	0.13448	0.0867	0.06845	0.38779	0.00886	40	0.37051	0.33269	3.93088	707.559	390.683	720.851	762.534	0.0816	0.18866	0.41497	0.31477
Peru	0.34045	0.13867	0.52268	0.69071	0.6235	0.00947	0.08683	0.04057	0.25681	0.05835	0.20752	0.00368	0.06962	0.05516	0.03719	0.14078	0.13448	0.07654	0.06593	0.40757	0.00805	39	0.38589	0.32408	2.78103	500.586	295.482	600.069	602.598	0.11462	0.17176	0.40039	0.31323
Peru	0.3214	0.1488	0.5298	0.70215	0.64344	0.01167	0.09983	0.0373	0.25387	0.05796	0.21797	0.00434	0.06454	0.05458	0.03944	0.12618	0.1244	0.08288	0.06763	0.42797	0.00804	38	0.40145	0.31479	3.82552	688.593	392.082	762.595	733.757	0.06566	0.1726	0.41699	0.34475
Peru	0.32525	0.14548	0.52927	0.69788	0.62981	0.01199	0.09891	0.03459	0.25358	0.06072	0.21498	0.00509	0.06049	0.05319	0.03928	0.13307	0.12683	0.08802	0.0654	0.42015	0.00847	38	0.40768	0.31411	3.72537	670.566	361.737	688.001	740.388	0.08314	0.16317	0.40373	0.34996
Peru	0.30773	0.15358	0.5387	0.71525	0.65793	0.01237	0.10295	0.03825	0.25514	0.06525	0.21831	0.00368	0.06297	0.05964	0.04192	0.13577	0.11897	0.08651	0.0711	0.41167	0.00776	39	0.39504	0.3165	4.06322	731.379	396.884	810.523	778.734	0.06812	0.15754	0.41353	0.36081
Peru	0.27255	0.16849	0.55896	0.74849	0.70042	0.01331	0.11284	0.04234	0.25457	0.07024	0.23415	0.00396	0.0682	0.06892	0.04331	0.13768	0.13087	0.09279	0.07389	0.39146	0.00896	39	0.38977	0.3323	4.46525	803.745	416.615	799.293	875.708	0.05292	0.16683	0.41073	0.36952
Peru	0.29515	0.16839	0.53646	0.73994	0.70514	0.01481	0.10981	0.04471	0.23783	0.0729	0.22573	0.00543	0.06643	0.06271	0.04968	0.13099	0.13687	0.09305	0.08015	0.36732	0.00737	40	0.37335	0.33207	4.93946	845.363	483.592	862.007	928.999	0.09647	0.15812	0.39724	0.34817
Peru	0.2611	0.17046	0.56845	0.75698	0.72199	0.01323	0.1085	0.04873	0.25747	0.07332	0.23766	0.00614	0.07479	0.06493	0.05173	0.1563	0.10748	0.08706	0.08159	0.36228	0.0077	38	0.39902	0.31141	5.23743	942.737	549.202	981.457	994.336	0.06239	0.1544	0.40868	0.37453
Peru	0.2516	0.17529	0.57312	0.75986	0.73022	0.01425	0.1069	0.05413	0.26697	0.07232	0.23383	0.00575	0.0689	0.0678	0.05257	0.16576	0.10323	0.08591	0.08527	0.35739	0.00743	37	0.4092	0.30687	5.3706	966.708	588.798	994.901	1016.47	0.06208	0.14614	0.41	0.38179
Peru	0.25682	0.17779	0.57139	0.75857	0.72497	0.01457	0.1021	0.05521	0.26058	0.0748	0.23622	0.00547	0.07192	0.06601	0.05828	0.16183	0.10595	0.08636	0.09062	0.34536	0.00819	37	0.40389	0.30164	5.82847	1049.12	658.729	1096.52	1093.49	0.05945	0.14918	0.40448	0.38689
Peru	0.25011	0.17723	0.57265	0.76351	0.73094	0.01476	0.10557	0.05691	0.26521	0.07037	0.23708	0.00514	0.07591	0.06837	0.063	0.16596	0.10579	0.08608	0.08608	0.33461	0.00786	37	0.39678	0.29503	6.34744	1142.54	719.879	1186.34	1191.75	0.046	0.15012	0.40137	0.40013
Peru	0.24757	0.17725	0.57517	0.7628	0.73307	0.01478	0.10237	0.06011	0.26971	0.07108	0.23438	0.00496	0.07637	0.06672	0.06528	0.1701	0.10426	0.08433	0.08882	0.33241	0.00677	37	0.3881	0.28989	6.66936	1200.48	799.883	1256.69	1238.65	0.0534	0.14448	0.40199	0.40013
Peru	0.25361	0.17228	0.57411	0.75788	0.72267	0.01404	0.09655	0.06169	0.26884	0.07308	0.2322	0.00495	0.07577	0.06528	0.06465	0.16988	0.10609	0.08045	0.09051	0.33568	0.00674	37	0.39075	0.27701	7.11156	1280.08	834.199	1325.32	1335.19	0.04515	0.14991	0.39303	0.41191

GLOBAL GROWTH AND JOBS EPISODES TOOL COMPLETED WILL BE ONLINE SOON

WORLD BANK GROUP Jobs

JobsStructure Tool
Global Database Generator

Version:
01-Nov-2019

Global analyses are done by using Excel's Filter function on the 'All' sheet together with Pivot tables on the Charts sheet.

Data

The tool uses sectoral value added and employment data from the WDI database.
World DataBank: http://databank.worldbank.org/data/home.aspx   Accessed 03 Oct 2019
Number of countries: 169
Number of growth periods: 52,686

Step-by-Step

Follow the Step-by-Step instructions:

		Last macro run:	Duration:
Step 1	**Run** macro to insert formulas cleared to make file smaller	Oct-28-2019 1:23 PM	02:52 (mm:ss)

Step 2	**Select** to always use 'GDP" or use 'GVA' or 'GDP' as per WDI	Always GDP	Help?
	Define Working Age Population (WAP) by age-group	15-64	Help?
	Select formula for productivity decomposition by sector	Canonical	Help?

Step 3   (Optional) **Copy-paste values** to make re-calculation go faster

Step 4   Step 4a   **EITHER - Export** the "Read Me", "All", "Charts" and "Documentation" sheets
Step 4b   **OR - Export** the "All" sheet only

		Last macro run:	Duration:
Step 6	**Clear** formulas before saving file (to make file smaller)	Oct-28-2019 2:23 PM	00:02 (mm:ss)

EXAMPLE: DEMOGRAPHICS AND URBANIZATION IN GROWTH EPISODES BY REGION OR INCOME GROUP

Growth in real GDP and labor market demographics by region

Legend: Real GDP, Employment, Labor Force, Working-age poulation

Urbanization by income group

Legend: Urban population share, Urban population share, outside largest city, Urban population share, in largest city
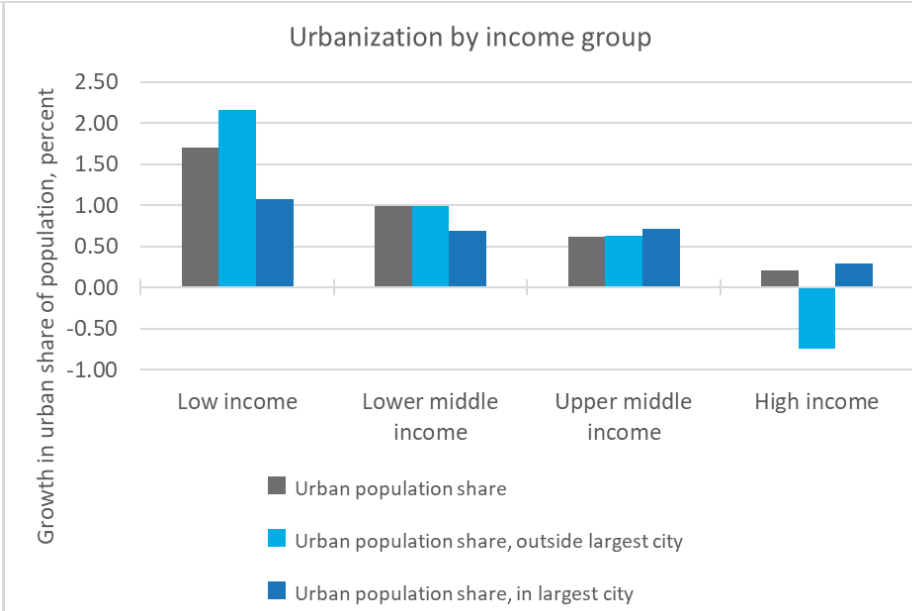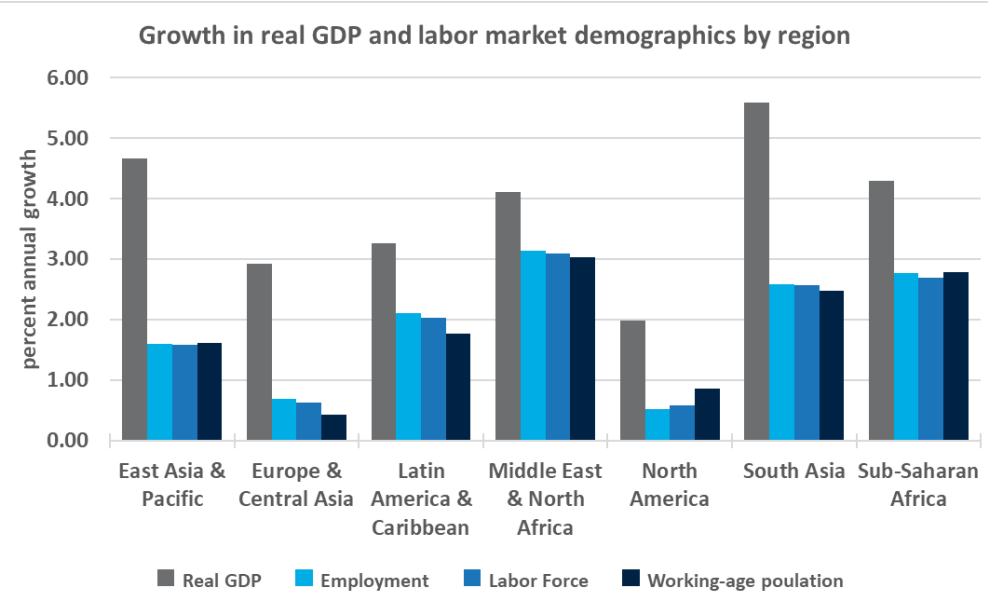
EXAMPLE: EMPLOYMENT ELASTICITIES FOR DIFFERENT GROWTH PERIODS

Employment growth and real GDP growth for 52,686 growth events, 1991-2018

- 1991-2018
- Indonesia, 378 growth events
- Linear (1991-2018)

Employment elasticities for growth episodes by country Income Group

Income Group	Elasticity to real GDP growth
High income	0.18
Upper middle income	0.52
Lower middle income	0.29
Low income	0.75
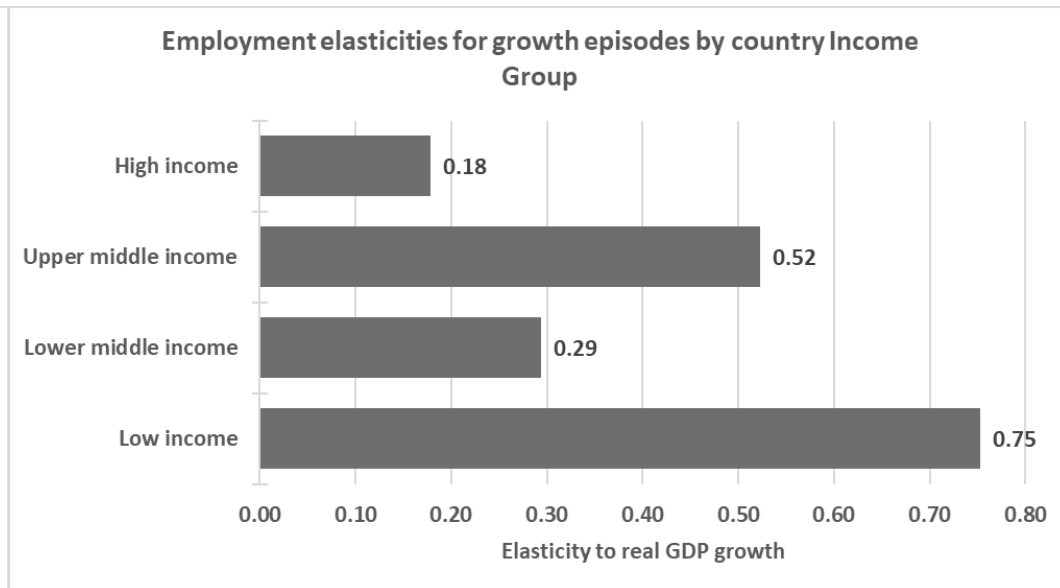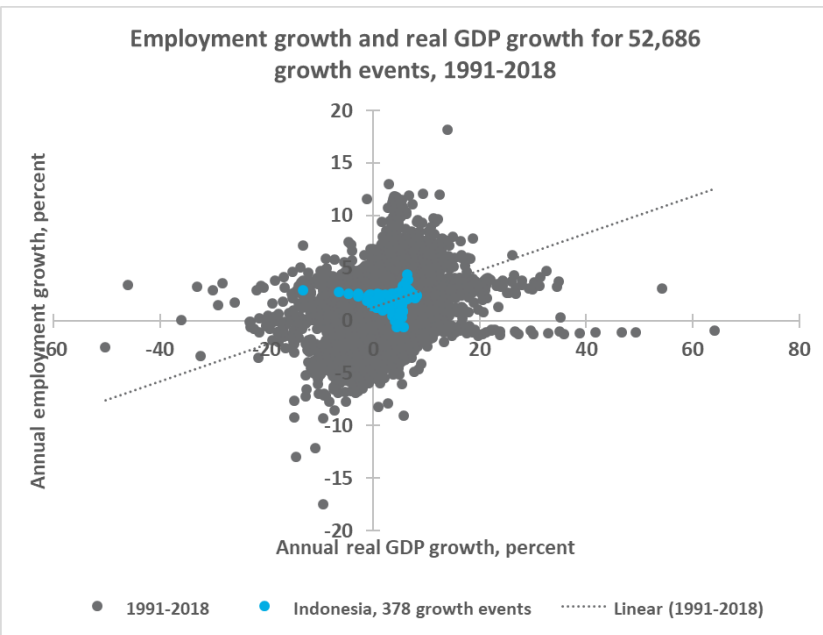
EXAMPLE: DRIVERS OF GROWTH IN PER CAPITA INCOME (DECOMPOSITION) FOR ALTERNATIVE GROWTH EPISODES, OR FOR ALTERNATIVE GROWTH PATHS

Decomposition of per capita value added
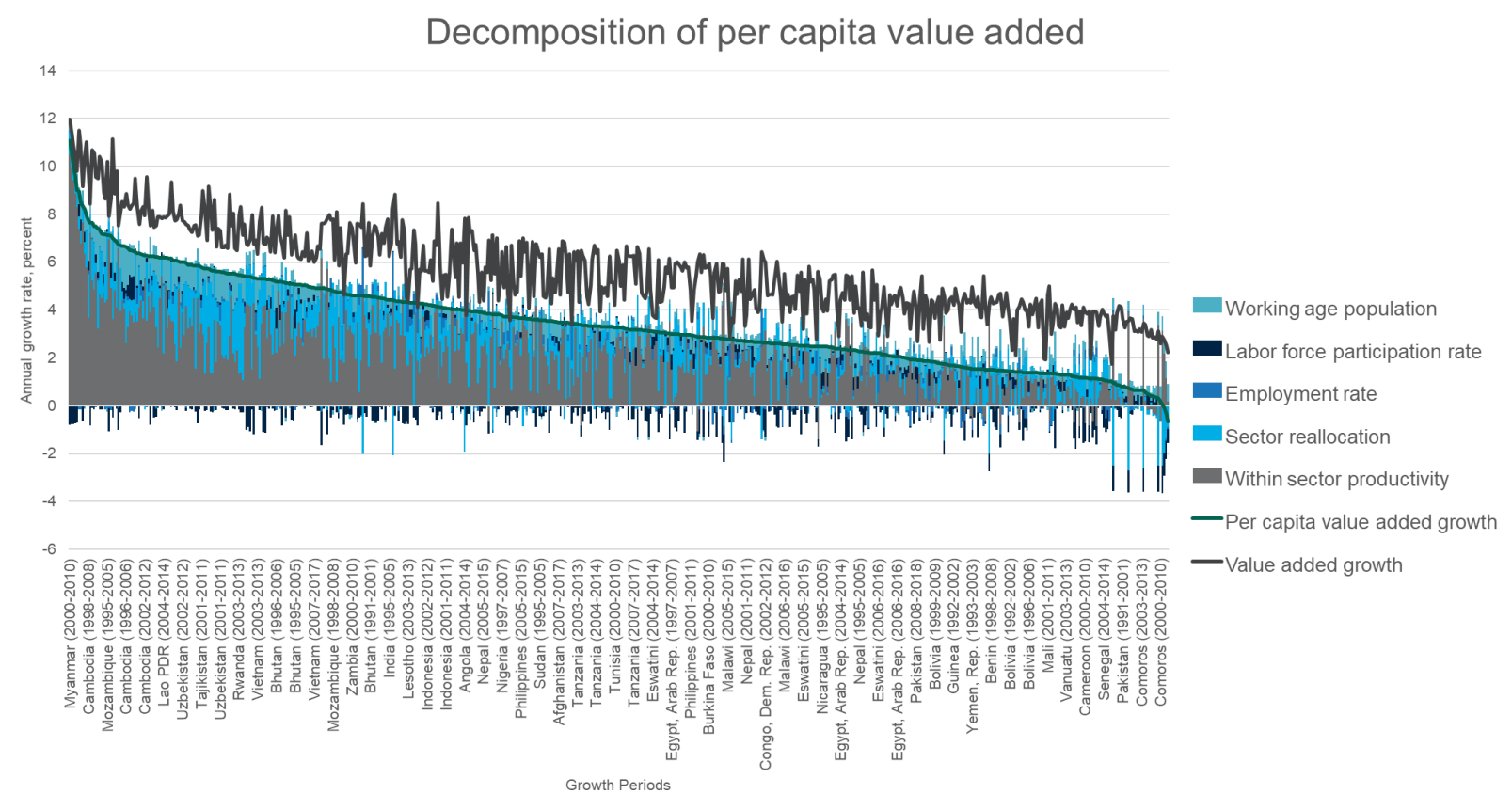
EXAMPLE: GLOBAL GROWTH EPISODES WITH DIFFERENTIAL AGRICULTURAL PRODUCTIVITY BY INCOME STATUS

Productivity decompositions
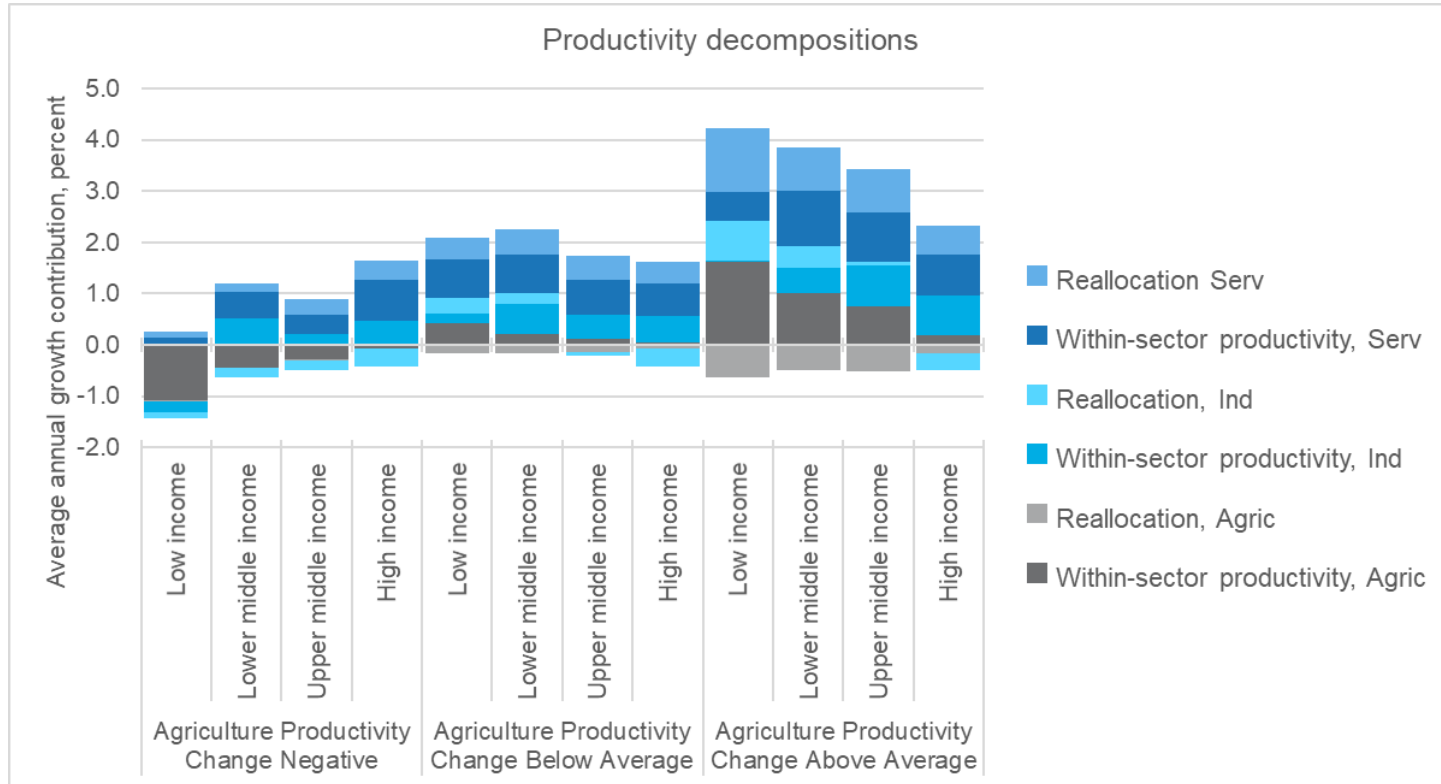
STANDARDIZED TOOLS

http://datatopics.worldbank.org/jobsdiagnostics/jobs-tools.html

<u>Tools</u> & Methods – to generate country data "symptoms"

1. **JobsStructure Tool** - country comparisons of structural change with projections
2. **Jobs Group Demography Tool** - country comparisons of working age population, LFP, Employment by gender, with projections
3. **Jobs Group Context Tool** - Macro, Labor Regulations, Governance, Doing Business Indicators – allows comparison with other countries' performance at-a-glance.
4. **Jobs Diagnostic Labor Supply Tool** – Stata code - generates country level indicators, hundreds of charts, and wage and employment probability regressions using LFS & LSMS data
5. **Jobs Diagnostic Labor Demand Tool** – Stata code - generates charts and tables from business census and national accounts surveys
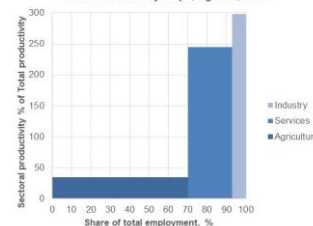
JOBS GROUP DEMOGRAPHY TOOL MACRO EXCEL-BASED TOOL TO ANALYZE TRENDS IN DEMOGRAPHY AND LABOR AND GDP PROJECTIONS

Population by five-year age groups, Historical, Nepal, 2015
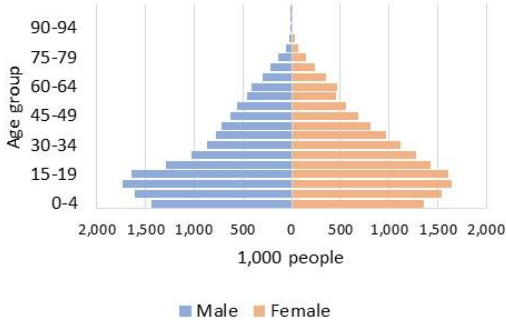
Population by five-year age groups, Projection, Medium Fertility, Nepal, 2030
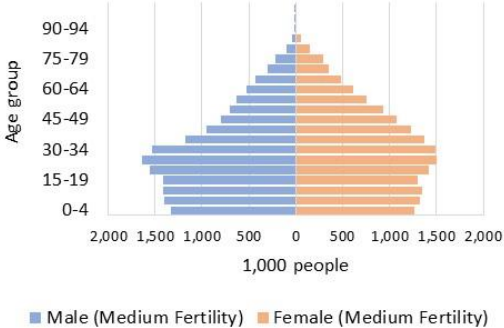
Rural and Urban Population, Nepal from 1998 to 2017
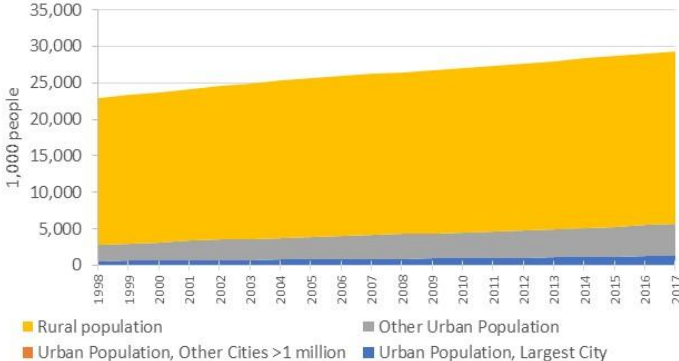
Dependency Ratios (WAP = ages 15-64)
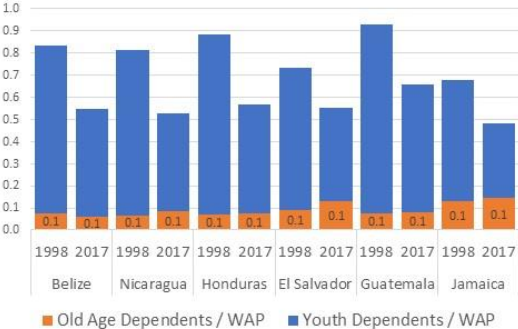
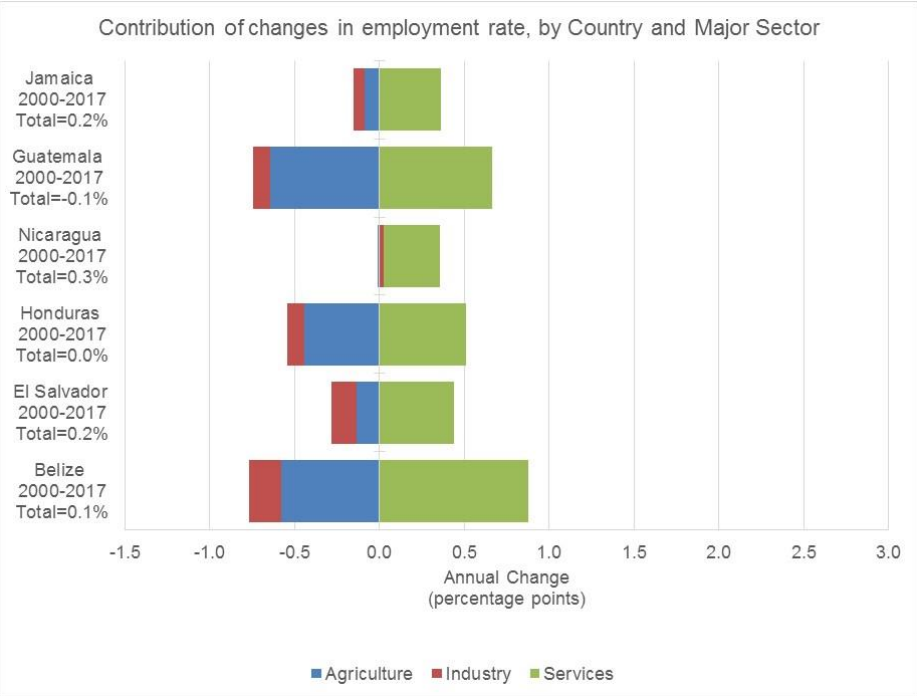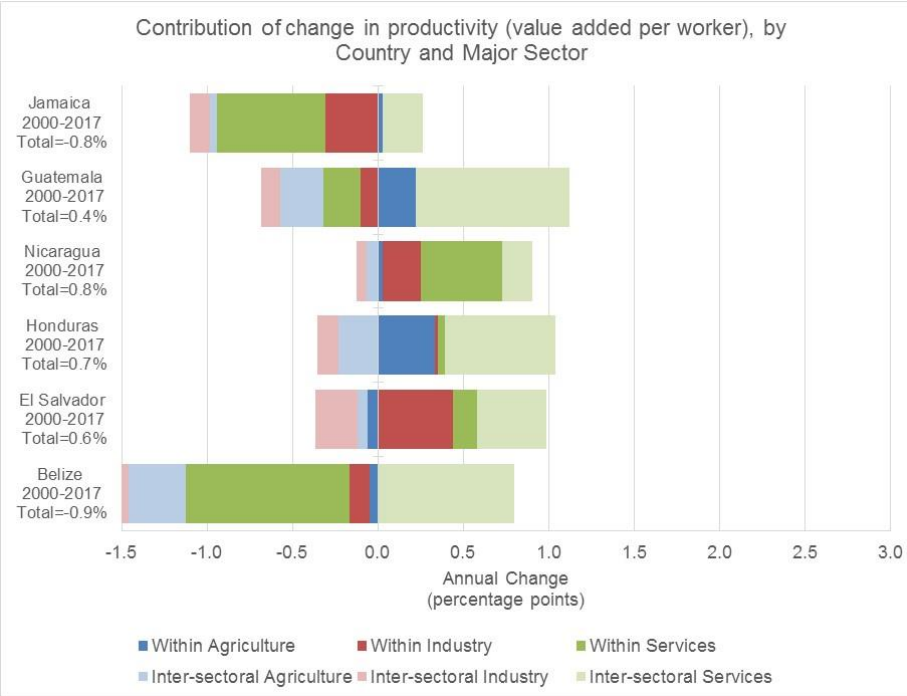Paid Employees and Self-employed, by Country and Year
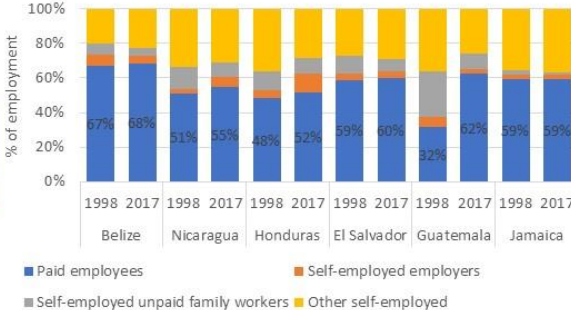
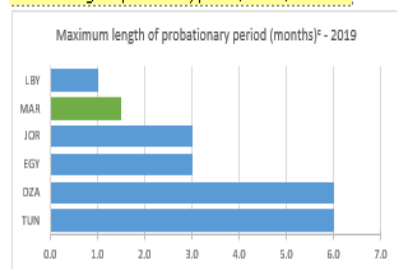Value Added per Worker, by Country and Year
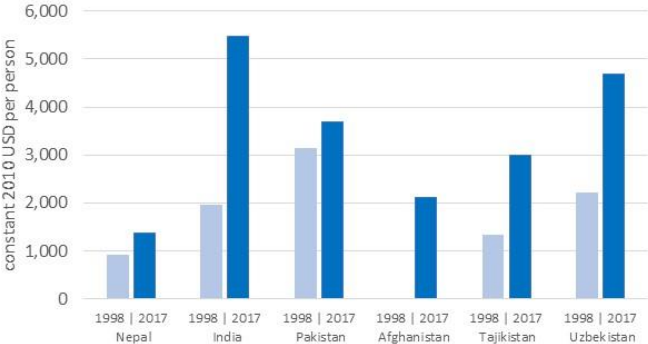
JOB STRUCTURES TOOL TO BENCHMARK GROWTH AND STRUCTURAL CHANGE

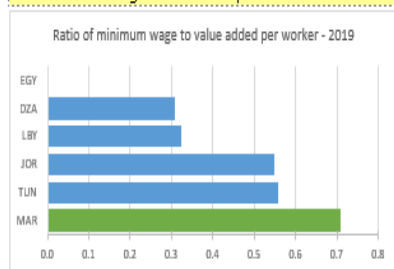## Macro Excel Based Tools – Sectoral Decompositions Structural Change

Contribution of change in productivity (value added per worker), by Country and Major Sector

Contribution of changes in employment rate, by Country and Major Sector

JOB GROUP CONTEXT TOOL – TO BENCHMARK POLICY
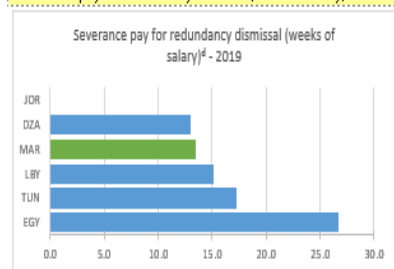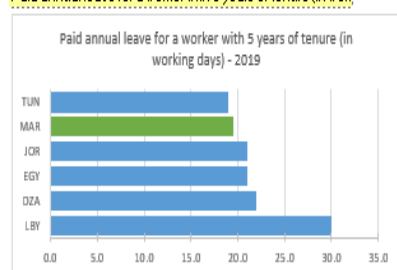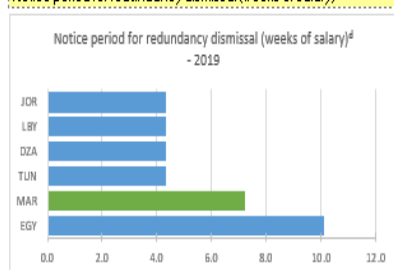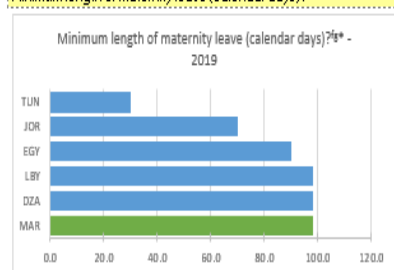
Source: Data from Doing Business database (WBG); Labor Market Regulation 2016. Accessed: 18-Feb-2019.
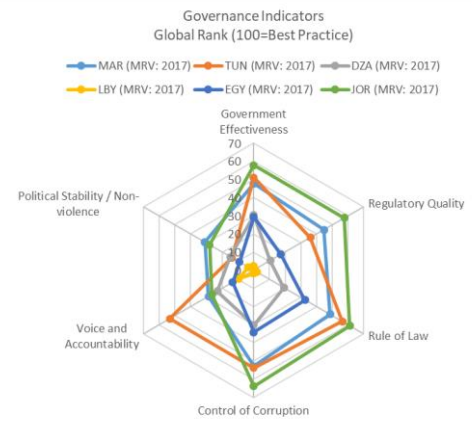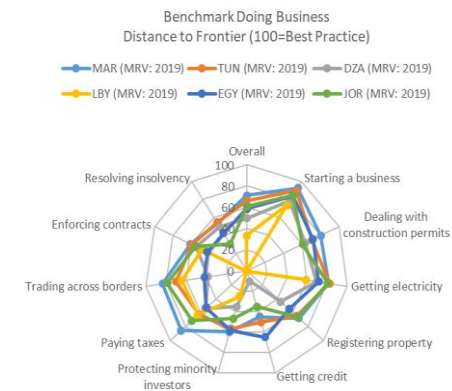
Benchmarking

INTERPRETING SYMPTOMS REQUIRES BENCHMARKING AGAINST NORMALITY IN OTHERS WITH SIMILAR (AND DIFFERENT) CHARACTERISTICS:

Q. Who is tall?

"*Tall*" is a relative concept
The Dinka people are the tallest tribe in Africa

Manute Bol was a tall Dinka man

...*and* a tall basketball player

Washington "Bullets" 1985-95
7ft 7 inches

PATHWAYS REPORT CREATED BENCHMARKING TOOLS FOR GROWTH EPISODES, LABOR INDICATORS BY INCOME GROUPS AND REGION, AND PROFILE OF FIRMS AND JOBS

PROFILE OF FIRMS AND JOBS
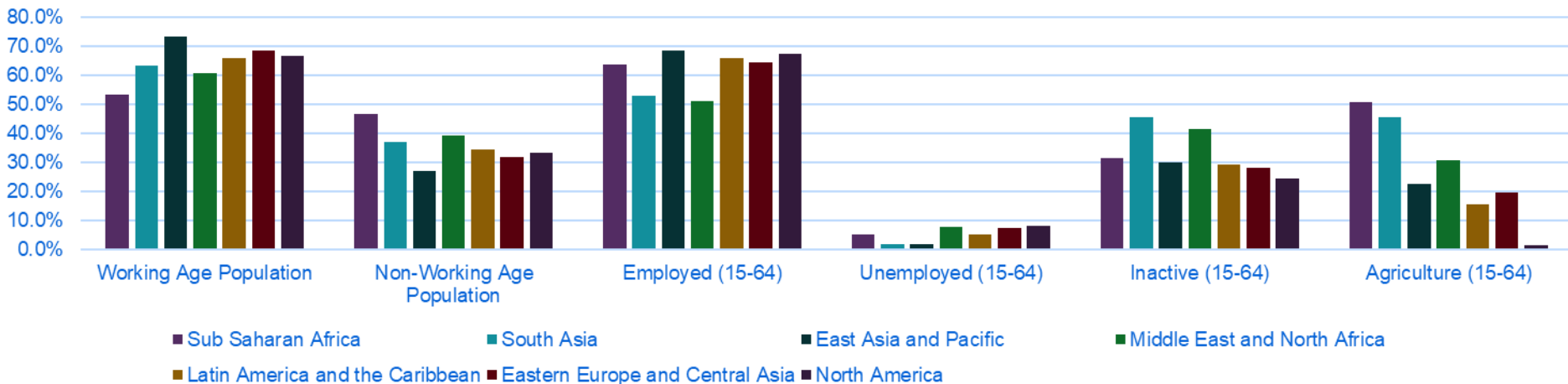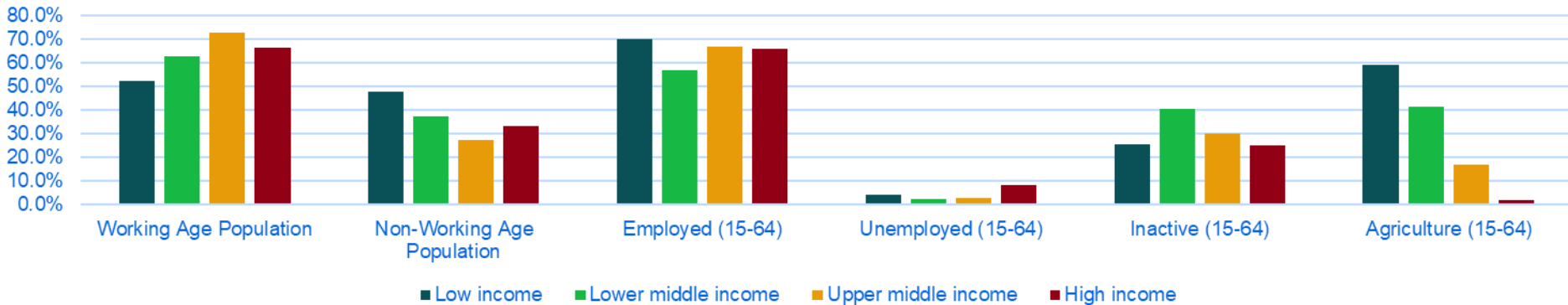
Firms Distribution — Micro vs. Large
Micro Firms: size 1 to 9
Large Firms: size 100+

Employment Distribution — Micro vs. Large
Micro Firms: size 1 to 9
Large Firms: size 100+

Micro Firms may not Grow or Exit

SYMPTOMS MUST BE TRACKED *OVER TIME* AND COGNIZANT OF THE PREVAILING *CONDITION* AS WELL AS *CHARACTERISTICS*

Healthy vs Unhealthy weight gain over time?

STAGES OF PREGNANCY

BMI - BODY MASS INDEX

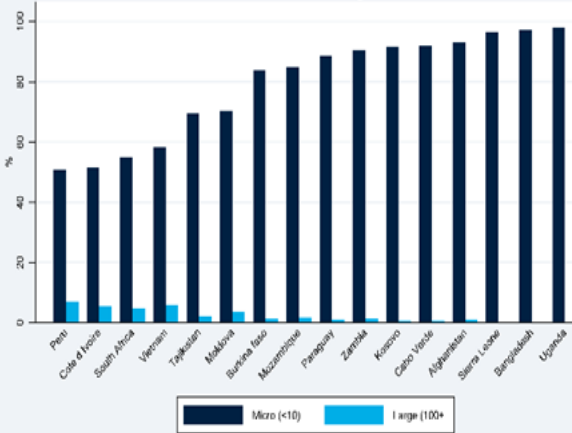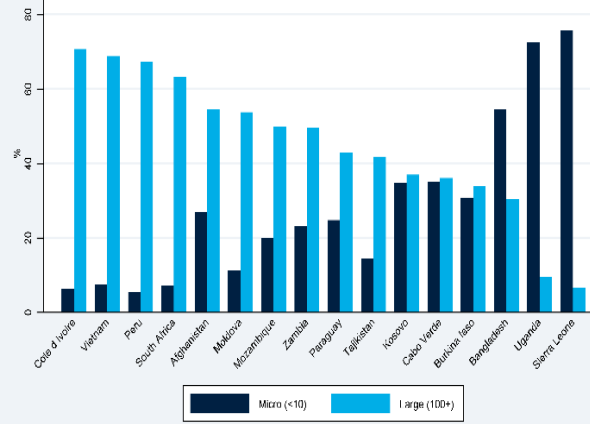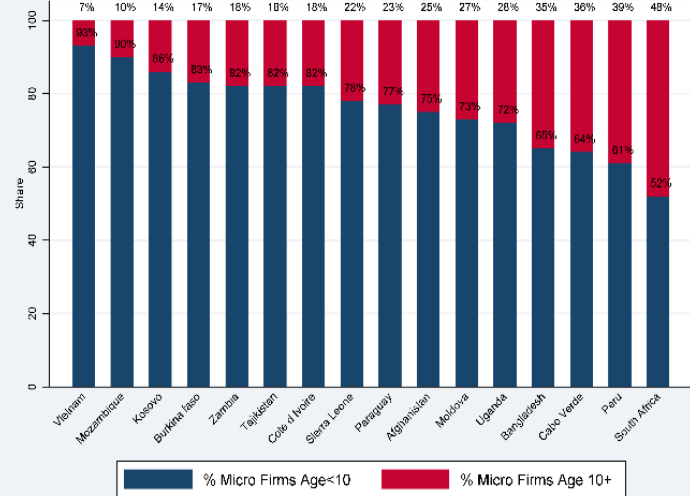| WEIGHT lbs	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215
kgs	45.5	47.7	50.0	52.3	54.5	56.8	59.1	61.4	63.6	65.9	68.2	70.5	72.7	75.0	77.3	79.5	81.8	84.1	86.4	88.6	90.9	93.2	95.5	97.7

HEIGHT in/cm — Underweight | Healthy | Overweight | Obese | Extremely obese

HEIGHT in/cm																								
5'0" - 152.4	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
5'1" - 154.9	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	36	37	38	39	40
5'2" - 157.4	18	19	20	21	22	22	23	24	25	26	27	28	29	30	31	32	33	33	34	35	36	37	38	39
5'3" - 160.0	17	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	32	32	33	34	35	36	37	38
5'4" - 162.5	17	18	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	31	32	33	34	35	36	37
5'5" - 165.1	16	17	18	19	20	20	21	22	23	24	25	25	26	27	28	29	30	30	31	32	33	34	35	35
5'6" - 167.6	16	17	17	18	19	20	21	21	22	23	24	25	25	26	27	28	29	29	30	31	32	33	34	34
5'7" - 170.1	15	16	17	18	18	19	20	21	22	22	23	24	25	25	26	27	28	29	29	30	31	32	33	33
5'8" - 172.7	15	16	17	17	18	19	20	21	21	22	23	24	25	25	26	27	28	28	29	30	31	32	32
5'9" - 175.2	14	15	16	17	17	18	19	20	20	21	22	23	24	25	25	26	27	28	28	29	30	31	31
5'10" - 177.8	14	15	15	16	17	18	18	19	20	21	22	23	23	24	25	25	26	27	28	28	29	30	30
5'11" - 180.3	14	14	15	16	16	17	18	18	19	20	21	21	22	23	23	24	25	25	26	27	28	28	29	30
6'0" - 182.8	13	14	14	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28	29
6'1" - 185.4	13	13	14	15	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28
6'2" - 187.9	12	13	14	14	15	16	16	17	18	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27
6'3" - 190.5	12	13	13	14	15	15	16	16	17	18	18	19	20	20	21	21	22	23	23	24	25	25	26	26
6'4" - 193.0	12	12	13	14	14	15	15	16	17	17	18	18	19	20	20	21	22	22	23	23	24	25	25	26

GUIDED ENQUIRY HELPS ORGANIZE SYMPTOMS

ASK THE RIGHT QUESTIONS WITH A STRUCTURED ENQUIRY AROUND A THEORY OF CHANGE

HOW?: A GUIDED ENQUIRY FOR THE JOBS DIAGNOSTIC – MACRO

Uses data on population, labor force, real GDP and employment by sector

Analyzes trends in economic growth, structural change, urbanization, waged employment
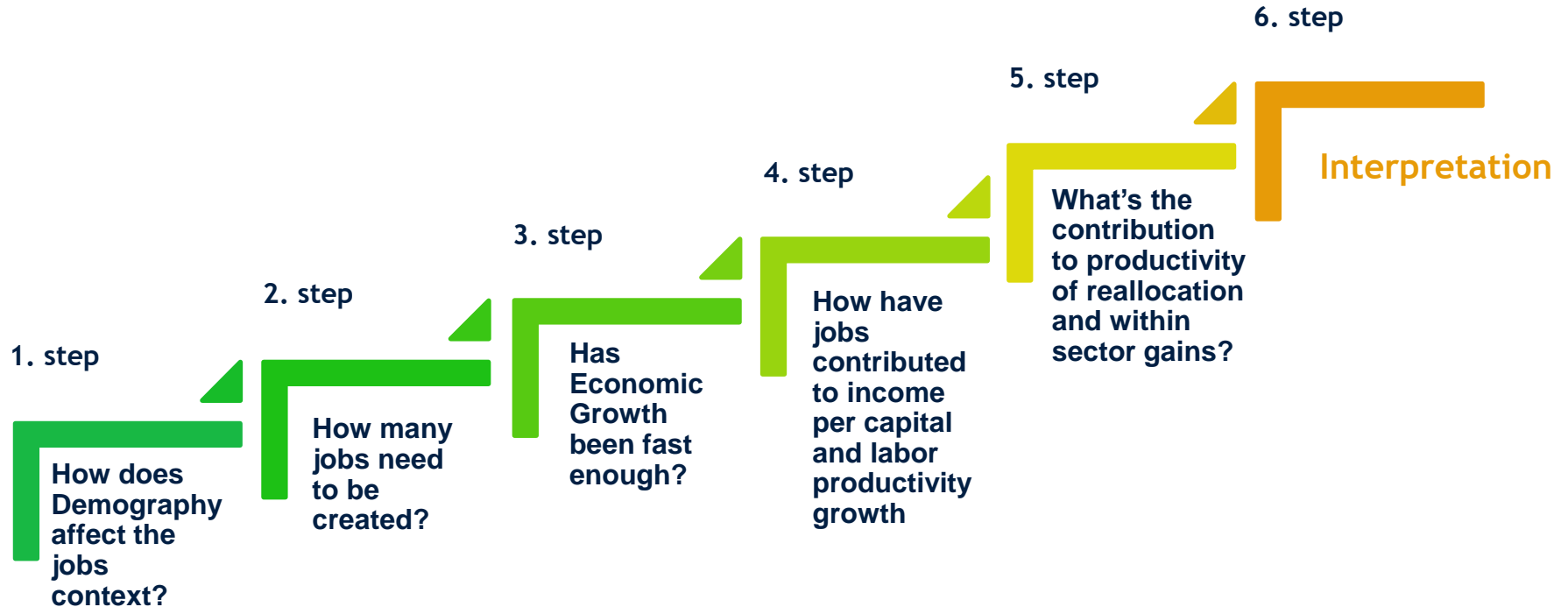
Points to anomalies through cross-country comparisons

Projects future demographics and labor force growth and identifies macro challenges assuming past growth rates repeat themselves

STEPWISE OPERATIONALISATION OF THE GUIDED ENQUIRY – MACRO

1. step
How does Demography affect the jobs context?

2. step
How many jobs need to be created?

3. step
Has Economic Growth been fast enough?

4. step
How have jobs contributed to income per capital and labor productivity growth

5. step
What's the contribution to productivity of reallocation and within sector gains?

6. step
Interpretation

MACRO QUESTIONS TO ASK

- Is growth fast enough to create enough jobs for young entrants?
- Are jobs outcomes, and poverty improving?
- What is driving real GDP per capita? How does this compare with other countries?
  - Is labor accumulation rising?
    - Working age,
    - Participation,
    - Employment rate
  - Is employment rising with output?
  - Is (labor) productivity rising?
    - Within sectors
    - From reallocation
    - Across locations
    - Across formal and informal sectors
  - Is labor moving to more productive sectors (locations, occupations, firms)?
    - Is employment urbanizing? (uses LFS)
    - Is employment formalizing? (uses LFS)
- Are gaps in productivity narrowing

Key dimensions

- **Aggregate Demand**
- **Productive Capacity**
- **Investment**
- **Demography**
- **Participation**
- **Employment**
- **Productivity**
- **Structural Change**
- **Urbanization**
- **Formality**

Country Characteristics

HOW?: A GUIDED ENQUIRY FOR THE JOBS DIAGNOSTIC – SUPPLY

Uses labor force and other household surveys
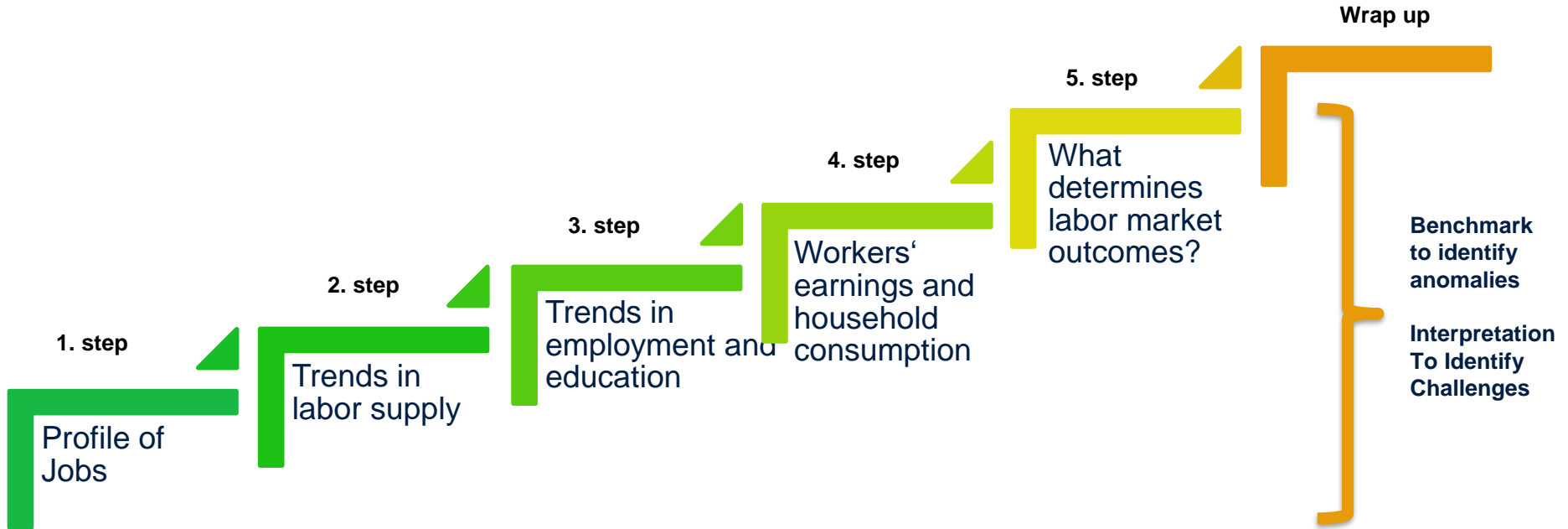
Maps the profile of the workforce

Observes trends over time and points to anomalies through cross-country comparisons

Examines anomalies specifically looking into labor market rigidities and structural constraints

STEP-WISE GUIDED ENQUIRY – SUPPLY SIDE

Wrap up

5. step

4. step

What determines labor market outcomes?

3. step

Workers' earnings and household consumption

2. step

Trends in employment and education

1. step

Trends in labor supply

Profile of Jobs

Benchmark to identify anomalies

Interpretation To Identify Challenges

STANDARD SUPPLY-SIDE OUTPUTS USING LFS/LSMS

A GUIDED ENQUIRY FOR FIRM DYNAMICS

uses economic censuses, national accounts surveys, business establishment surveys

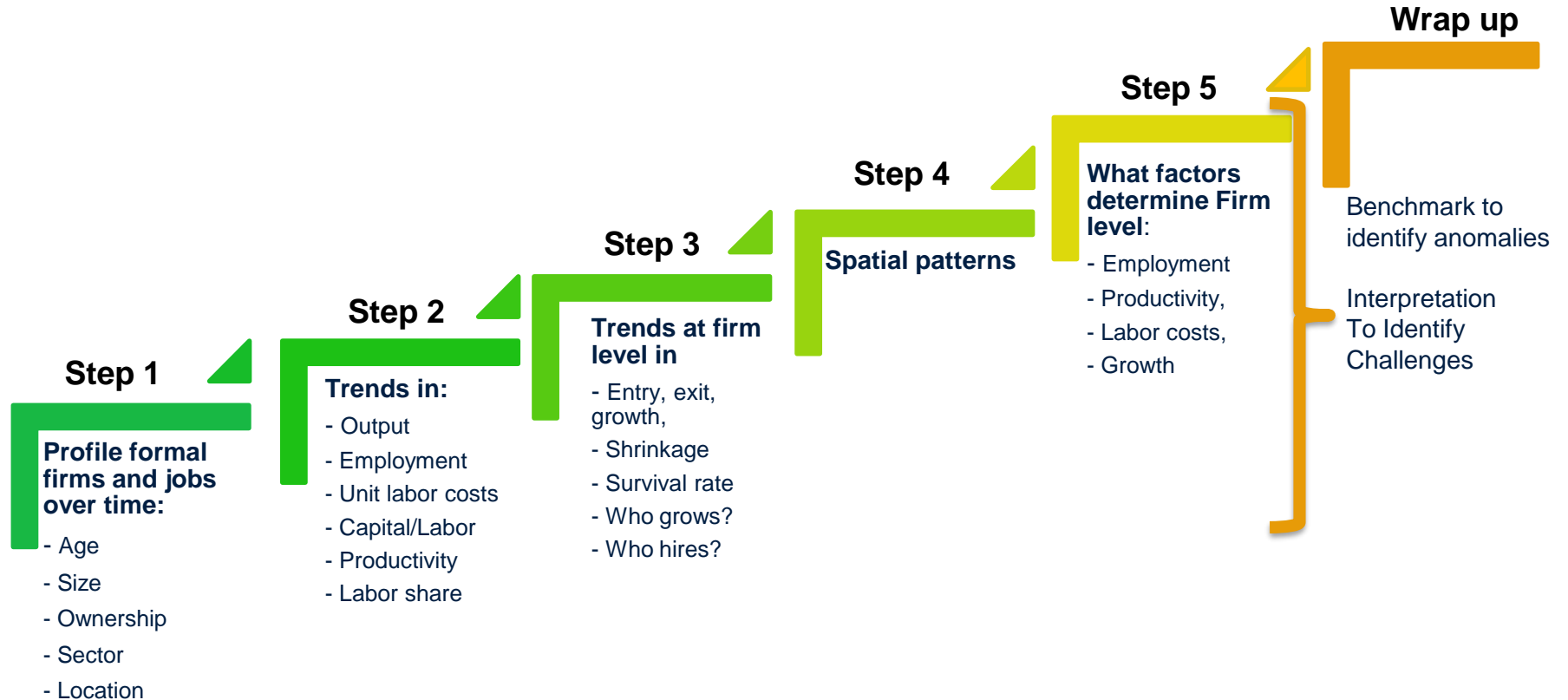Maps the profile of firms and jobs in the formal private sector

observes trends over time in aggregate and @ firm-level and points to anomalies using cross-country comparisons and economic deduction
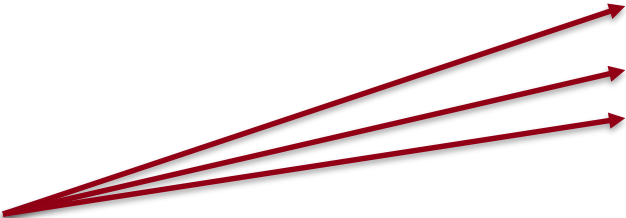
examines anomalies specifically looking into investment climate and doing business indicators

STEP-WISE GUIDED ENQUIRY – FIRM DYNAMICS

Step 1

Profile formal firms and jobs over time:

- Age
- Size
- Ownership
- Sector
- Location

Step 2

Trends in:

- Output
- Employment
- Unit labor costs
- Capital/Labor
- Productivity
- Labor share

Step 3

Trends at firm level in

- Entry, exit, growth,
- Shrinkage
- Survival rate
- Who grows?
- Who hires?

Step 4

Spatial patterns

Step 5

What factors determine Firm level:

- Employment
- Productivity,
- Labor costs,
- Growth

Wrap up

Benchmark to identify anomalies

Interpretation To Identify Challenges

STANDARD FIRM DYNAMICS OUTPUTS USING DATA ON ENTERPRISES

Q1; 1.1 - Composition of Formal Private Sector

Q1; 1.2 - Sectors and Share of Workers

Q1; 1.3 - Firm Profile Compared to other Countries

Question 1 - Profile of formal private sector

Question 2 - Trend in Economic Transformation and Jobs

Question 3 - Pattern and Trend in Firm Level Growth Dynamics and Jobs Outcomes