Italy:
Balancing the G20’s Global Impact

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Half of physical impacts imported through global value chains: Italy’s population and consumption requirements have long outgrown its territorial resources, explaining many centuries of colonial conquest and now, economic globalisation. While greenhouse emissions from a trade-corrected consumption perspective have been relatively stable for two decades, imported global value chains supply one half of them, principally from China, Germany, Russia and India. Scarce water consumption, stable for two decades, has half of consumption imported, mainly for raw and processed food, from Tunisia, Pakistan, Spain, Egypt and India. The land footprint has grown by one quarter in the last decade, dominated by grains imports from the USA, Argentina, France and Germany.

Collective impacts from emissions, land and water use threaten biodiversity domestically and abroad. One half of Italy’s threats to animal species happen in many trading partners led by Croatia, Cameroon, Russia, Albania and Sri Lanka with wild harvesting, climate change and pollution the leading threat drivers. Material flows have risen by one third over two decades with construction materials and fossil fuels the largest components. In per capita consumption terms, Italy’s physical impacts rank in the mid-tier of the G20 in line with GDP. The exception is a fourth ranking for scarce water use, mainly for food imports.

External workforce limits options: The gini coefficient measure of inequality has been relatively stable since 1993, possibly a success of public policy as well as the strength of Italy’s civil society. This puts Italy at a mid tier ranking in the G20, being less equal than Germany and France, but more equal than the UK and USA. The top tenth of income earners take one third of national income, a rise from one quarter in the mid 1980s, but similar to Germany and France today.

One half of one full time job is required to deliver goods and services for each citizen, giving a mid tier ranking in the G20, well behind the leading job generators of the UK, Australia and Japan. However, informal and irregular employment is substantial, suggesting this ranking is underestimated in the delivery of real services. For Italy’s full time workforce of 33.7 million, more than 14 million (43%) work in the global value chains of many trading partners dominated by China, India, Germany, Indonesia, Russia and Spain (see pie diagram next page). Of the 19 million (57%) domestic full time jobs, 15 million (44%) are purely domestic while more than four million (13%) serve other countries through Italy’s export industries.

Given youth unemployment of 700,000, and an inactive youth group of more than four million, policy is torn between the historical solution of out-migration and the challenging task of job creation and job re-shoring.

Totally dependent on fossil fuel imports: Throughout millennia Italy fostered leadership in exploration, empires, trade, invention and then the Renaissance which saw Italy emerge in 1800 with 19 million people and a life expectancy of 30 years. Today’s population of 61 million is near its peak and will decline to 58-60 million in 2050 based on a net immigration of 700,000 annually and a median age growing from 45 currently to 50. A working age population greater than 30 million will be maintained out to 2100. Official unemployment rates are currently 13% but youth unemployment is 42% overall and up to 68 % in some regions. The informal economy is variously estimated at more than one fifth of GDP, fostering tax evasion but buffering social unrest in many regions. Social issues include a crisis in representation, organised crime and high irregular immigration.

Italy is totally dependent on imported fossil energy, having domestic reserves covering two years of coal consumption and less than six months cover for oil and gas. Electricity generation is 70% fossil, dominated by gas, while renewable energies produce the remaining 30%. In 2013, solar photovoltaics generated nearly 8% of requirements and Italy ranks third behind Germany and China for solar PV installed capacity. While Italy’s wine, olive oil and Mediterranean diet are renowned, more than two thirds of agricultural consumption is now imported.
I Forconi (The Pitchforks) are unsettled:
Continuing political instability has impeded resolution of difficult structural issues leading to protests by farmers, the unemployed and low paid workers (I Forconi). Given Italy’s reliance on external global value chains and the unlikely prospect of rampant economic growth, generating close to five million youth jobs will be difficult.

Service industries like tourism can contribute, but Italy’s 45 million inbound tourists are seasonal and enjoy many global choices. Government policy aims to increase manufacturing’s share of GDP on the premise that each industrial job creates two others in supply and services. ‘Made in Italy’ branding has been successful in textiles, but job-for-job substitution will decline with increasing automation. Capturing most of a product’s global value chain within the country will give most job generation, though it runs counter to conventional wisdom.

Europe’s most biodiverse country:
Italy’s wide range of geographic types harbours one half of Europe’s plants and one third of its animals. The millennia of civilisations have left their mark with more than one third of animals and plants assessed, now having threatened status. However forest areas are increasing following land abandonment and one fifth of Italy’s land and marine areas are in some form of reserve management. Future biodiversity policy aims to intersect and integrate with forces of climate change, economic renewal and ecosystem services.

Migration forced by climate change:
The stable climate that underpinned the Roman Empire’s expansion will, two millennia later, become hotter and drier, with reduced catchment water yield, more fires and increased landscape degradation and desertification. Proposals call for urban and agricultural development at higher altitudes to allow refurbishment of less resilient zones in north eastern and central Italy. To date, greenhouse reduction strategies have been weak and idiosyncratic. A long term approach requires clear legal frameworks, a new electricity grid for wind and PV, new zero carbon mass transit modes, carbon offsets with developing countries and deployment of zero-carbon base load electricity generators.

Italy’s challenges may herald the world’s first ‘steady state economy’: A nearly stable population and declining physical impacts through its global value chains, have spurred a different structure and mindset. The impasse between political elite’s ability to govern and the black economy of the working class needs to catalyse a new economic structure. Italy’s creative manufacturing is central to avoiding a lost generation of youth employment.
ITALY

Rationale for Indicators

Greenhouse Emissions (CO2-e): The emissions footprint for each person’s consumption leading to heat gain in the atmosphere and oceans and thus increasing climate disruption (due to accounting uncertainties, the indicator excludes land use, land use change and biomass burning). Measure: Tonnes of CO2 equivalents per capita excluding land use change, forestry and biomass burning. Year 2011, Source- Eora Global Database http://worlddmo.com/

Material Footprint (Material usage): The material use footprint. Increasing material use by developed and developing economies poses long term threats to sustainability at both ends. Limits to resource quality of virgin materials and a faster consumption lifecycle suggest issues for disposal and recycling. Measure: total material flow in tonnes per capita. Year 2008, Source- Eora Global Database http://worlddmo.com/

Scarcity Water Use: The scarce water use footprint. Over- extraction increases threats to human water security and river biodiversity in 30 of the globe’s 47 most volumetric river basins. This scarce water is eventually consumed as clothes, food and beverages. Measure: litres of scarcity-weighted water use per capita. Year 2011, Source-Eora Global Database http://worlddmo.com/

Endangered Animal Species (Species threats): Land clearing and over-fishing are two of 15 or more drivers of accelerated rates of biodiversity endangerment. This species trend footprint traces endangered animal species from the IUCNs ‘Red List’ to complex trade networks of threatening production activities. Measure: number of endangered animal species (species threats) per one million of human population. Year 2000, Source- Eora Global Database http://worlddmo.com/

Land Footprint (Land): The land footprint in trade corrected terms or consumption terms required for built infrastructure, crops, forest, fishing and grazing. Same accounting principle as the ‘ecological footprint’ but excludes energy/carbon land as the emissions indicator specifically accounts for that impact. Expressed in ‘globally-average hectares’ adjusted for productivity potential. Measure: Land area in globally-average hectares required to underpin consumption footprint. Year 2011 Source- Eora Global Database http://worlddmo.com/

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Inequality (Gini coefficient): The footprint or production chain measure of the distribution, or spread of wages within a country, across the population. A smaller rich elite and a large working poor gives a higher Gini coefficient while a more equal country has a lower value (e.g. South Africa 0.59, USA 0.38, Japan 0.29). Measure: Time series of Gini footprints computed as part of Eora employment studies. Data not yet available as part of Eora Database. Year 2011

Employment Footprint (Jobs): A social indicator measuring the domestic and outside workforce required to maintain domestic consumption and lifestyle. A cascade of lower paid workers delivers goods and services through complex production chains to more affluent consumers. Measure: Full time equivalent workers (domestically and out-of-country) per capita of domestic population, Year 2011 Source- Eora Global Database http://worlddmo.com/


Gross Domestic Product (GDP): A conventional and widely accepted economic measure of development and progress in each country. This is not a footprint or production chain measure. Measure: GDP per capita in deflated 2005 US dollars from United Nations data depository Year 2012 Source- GDP by Type of Expenditure at constant (2005) prices: http://data.un.org

Key References


A radar (or spider-web) diagram is used to display data from a wide range of sources and allow complex interactions to be simply displayed. This G20 study explores the tension between of economic production, social returns and environmental impact through reporting on global value chains and personal consumption (i.e. what a country’s citizens actually consume rather than its territorial production). There are five environmental indicators (emissions, water, endangered species, land footprint and material flow). These are balanced by two economic indicators (gross domestic product and net international debt) and two social indicators (employment footprint and the Gini coefficient or inequality footprint). All data are on a per-capita basis apart from the Gini coefficient which reports on income distribution nationally.

Two phases of data normalisation are used in this G20 study. Firstly, a ‘simple mean’ or average for all G20 countries is computed for each of the nine indicators. Secondly, each country’s value is divided by that mean to give a ratio number. In the radar diagram the G20 average (equal 1.0 by definition) is shown by the red dashed line equidistant from the centre of the web. The blue solid line shows how much each country’s indicator is bigger or smaller than the G20 average. The overall pattern or signature of each country is important. There is no inherent right or wrong in being inside or outside the G20 average as each country has its own set of special circumstances.

Thus for the Italian example above, most of the indicator set are above the G20 average. These above-average indicators report both better and worse outcomes. High indicators for scarce water use and material flow point to higher impacts on ecosystems in per capita terms and little room for complacency given total population size. A lower than average Gini coefficient reflects lower inequality and some policy success to date. A 50% above average GDP suggests economic development has been good while an average jobs figure suggests unmet employment requirements.