

Supplementary Material

Richard Doner and Ben Ross Schneider. “The Middle Income Trap: More Politics than Economics.”

World Politics vol. 68, no. 4, October 2016 doi: 10.1017/S0043887116000095

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Table S1. Selected Economic Indicators

| Country | GPD Per Capita, PPP (constant 2011 international \$) ¹ | Average 2012 PISA scores ² | Secondary Vocational Enrollment ³ | Labor Force with Tertiary Education ⁴ | R&D Spending ⁵ | R&D Personnel ⁶ | Manufacturing Value Added ⁸ | FDI Inward Stock ⁹ | | Gross Capital Formation ¹⁰ | | Gini ¹² |
|--------------------------------|---|---------------------------------------|--|--|---------------------------|----------------------------|--|-------------------------------|-------|---------------------------------------|------|--------------------|
| | | | | | | | | 1990 | 2013 | 2010 | 2012 | |
| Argentina | 17,900 | 397 | 6.8 | 21 | 0.65 | 3.75 | 15 | 6.4 | 23.0 | 19 | 17 | 0.458 |
| Brazil | 14,555 | 402 | 6.5 | 17 | 1.21 | 2.62 | 13 | 10.1 | 32.3 | 20 | 18 | 0.519 |
| Colombia | 11,977 | 393 | 6.5 | 23 | 0.17 | - | 12 | 6.1 | 33.5 | 22 | 24 | 0.559 |
| Mexico | 16,291 | 417 | 16.6 | 23 | 0.43 | 1.56 | 18 | 7.8 | 30.9 | 22 | 23 | 0.483 |
| Peru | 11,400 | 375 | 1.2 | 15 | - | - | 15 | 4.5 | 35.6 | 25 | 27 | 0.481 |
| Thailand | 13,932 | 437 | 15.4 | 17 | 0.25 | 1.56 | 33 | 9.3 | 47.9 | 26 | 30 | 0.394 |
| Malaysia | 22,556 | 413 | 6.8 | 24 | 1.07 | 4.62 | 24 | 21.7 | 46.3 | 23 | 26 | 0.462 |
| South Africa | 12,106 | - | 5.1 | 17 | 0.76 | 1.59 | 12 | 8.2 | 39.9 | 19 | 19 | 0.631 |
| Turkey | 18,647 | 462 | 23.6 | 18 | 0.86 | 3.48 | 18 | 5.5 | 17.6 | 20 | 20 | 0.402 |
| Mean for Large MI Countries | 15,485 | 412 | 9.8 | 19.4 | 0.68 | 2.74 | 18 | 8.8 | 34.1 | 22 | 23 | 0.488 |
| | | | | | | | | | | | | |
| China | 11,525 | 588 | 20.7 | - | 1.98 | 4.04 | 32 | 5.1 | 10.4 | 48 | 49 | 0.473 |
| | | | | | | | | | | | | |
| South Korea | 32,708 | 543 | 9.9 | 42 | 4.04 | 14.56 | 31 | 1.9 | 13.7 | 32 | 31 | 0.311 |
| Taiwan | 38,400 | 535 | 22.8 | 39 | 3.10 | | 21 | 5.9 | 13 | 22 | 20 | 0.342 |
| Singapore | 76,237 | 555 | 11.6 | 29 | 2.10 | 13.08 | 19 | 78.5 | 283.2 | 28 | 30 | 0.463 |
| Hong Kong | 51,509 | 554 | 1.3 | 26 | 0.75 | 6.54 | 2 | 262.3 | 548.5 | 24 | 25 | 0.537 |
| Mean for HI Asia | 49,714 | 547 | 11.4 | 34 | 2.50 | 11.39 | 18.25 | - | - | 27 | 27 | 0.413 |
| | | | | | | | | | | | | |
| Mean for HI OECD ¹³ | 37,785 | 503 | 25.4 | 34 | 2.23 | 12.99 | 15.37 | 9.1 | 58.3 | 20 | 20 | 0.301 |

¹ Most comparable figures for Argentina and Taiwan from CIA World Factbook 2014, http://www.photius.com/rankings/economy/gdp_per_capita_2014_0.html, accessed March 29, 2016. Source for others: World Bank, “World Development Indicators,” <http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.KD>, accessed October 22, 2014.

² Simple average of math, reading, and science scores. Data for China refers to Shanghai only. Source: OECD PISA, “Snapshot of performance in mathematics, reading and science,” <http://www.oecd.org/pisa/keyfindings/PISA-2012-results-snapshot-Volume-I-ENG.pdf>, accessed September 29, 2014.

³ Data as percentage of students in secondary education for most recent years between 2009-2013. Source for Taiwan: Authors’ calculations from National Statistics, Republic of China (Taiwan), “Table 38. Education at the second level (general, vocational, and teacher-training): institutions, teachers, students, and graduates,” *Statistical Yearbook of the Republic of China 2012 Edited 2013*, http://eng.stat.gov.tw/public/data/dgbas03/bs2/yearbook_eng/y038_I.pdf, accessed October 3, 2014. Source for others: UNESCO Institute for Statistics, “Percentage of students in secondary education enrolled in vocational programmes, both sexes (%)” <http://data.uis.unesco.org/>, accessed October 3, 2014.

⁴ Data as a percentage of total labor force for most recent years between 2009-2012. Source for Large MI countries, Singapore and Hong Kong: World Bank, “World Development Indicators,” <http://data.worldbank.org/indicator/SL.TLF.TERT.ZS>, accessed October 1, 2014. Source for Taiwan: The China Post, “39 percent of Taiwanese hold degrees in higher education,” <http://www.chinapost.com.tw/taiwan/national/national-news/2012/04/01/336400/39-percent.htm>, accessed October 1, 2014. Source for South Korea and HI OECD: OECD Stat Extracts, “Attained a tertiary education degree, 25-64 year olds,” <http://stats.oecd.org/>, accessed October 1, 2014.

⁵ Data as percentage of GDP for most recent years between 2009-2012. Source for Taiwan: Focus Taiwan, “Taiwan’s R&D Spending surpasses 3% of GDP in 2012,” <http://focustaiwan.tw/news/aeco/201407150012.aspx>, accessed September 17, 2014. Source for others: World Bank, “World Development Indicators,” <http://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS>, accessed October 1, 2014.

⁶ Data is total R&D personnel per thousand labor force for most recent years between 2009-2013. Source: UNESCO Institute for Statistics, “Total R&D Personnel Per Thousand Labor Force (FTE),” <http://data.uis.unesco.org>, accessed October 2, 2014.

⁸ Data as percentage of GDP for most recent years between 2009-2013. Source for Taiwan: Taiwan Today, “Taiwan’s industry must be value added,” <http://taiwantoday.tw/ct.asp?xItem=198950&ctNode=426>, accessed October 1, 2014. Source for others: World Bank, “World Development Indicators,” <http://data.worldbank.org/indicator/NV.IND.MANF.ZS>, accessed October 1, 2014.

⁹ Data as percentage of GDP. Means for HI Asia not calculated due to Singapore and Hong Kong being outliers. Source: UNCTAD, World Investment Report 2014, “Table 7: FDI inward stock as a percentage of gross domestic product, 1990-2013,” http://www.unctad.org/Sections/dite_dir/docs/WIR2014/WIR14_tab07.xls, accessed October 2, 2014.

¹⁰ Source for Taiwan: Authors’ calculations from National Statistics Republic of China (Taiwan), Table 1-1 and Table 11-1, <http://eng.stat.gov.tw/fp.asp?xItem=33339&ctNode=3570>, accessed October 2, 2014. Source for others: World Bank, “World Development Indicators,” <http://data.worldbank.org/indicator/NE.GDI.TOTL.ZS>, accessed October 2, 2014.

¹² Data for MI countries and HI Asia are most recent years within 2005-2013. Source: CIA World Factbook, “Distribution of Family Income - Gini Index,” <https://www.cia.gov/library/publications/the-world-factbook/fields/2172.html>, accessed September 29, 2014. Source for all others: OECD Stat Extracts, “Gini (at disposable income, post taxes and transfers),” <http://stats.oecd.org>, accessed September 29, 2014.

¹³ For 31 high income members of OECD, excluding Chile, Mexico, and Turkey.

Table S2. Trends in Inequality for Large Middle Income Countries

| Country | GINI ¹ | |
|-----------------------------|-------------------|-----------------|
| | 2000 | 2010 |
| Argentina | 51.06 | 44.5 |
| Brazil | 58.99 (1999) | 53.87 (2009) |
| Colombia | 58.68 | 55.92 |
| Mexico | 51.87 | 47.16 |
| Peru | 50.93 | 44.92 |
| Thailand | 42.84 | 39.37 |
| Malaysia | 37.91 (2004) | 46.21 (2009) |
| South Africa | 57.77 | 63.14 (2009) |
| Turkey | 41.4 (2002) | 38.79 |
| Mean for Large MI Countries | 50.16 | 48.21 |

¹ Exact years in parentheses. Source: World Bank, “World Development Indicators,” <http://data.worldbank.org/indicator/SI.POV.GINI>, accessed February 16, 2015.

Table S3. Size of Informal Sector

| Country | Informal Employment ¹ | Size of Shadow Economy ² |
|--|----------------------------------|-------------------------------------|
| Argentina | 49.7 | 27.8 |
| Brazil | 42.2 | 43.0 |
| Colombia | 59.6 | 45.1 |
| Mexico | 53.7 | 31.3 |
| Peru | 69.9 | 53.7 |
| Thailand | 42.3 | 57.2 |
| Malaysia | 8.0 | 32.6 |
| South Africa | 15.8 | 31.7 |
| Turkey | 22.0 | 35.2 |
| Mean for Large MI Countries | 40.36 | 39.73 |
| | | |
| China | 32.6 | 11.9 |
| | | |
| South Korea | - | 29.4 |
| Taiwan | - | 26.9 |
| Singapore | - | 14 |
| Hong Kong | - | 18.6 |
| Mean for HI Asia | - | 22.2 |
| | | |
| Mean for HI OECD excluding Chile, Mexico, and Turkey | - | 19.9 |

¹ Data as share of all non-agriculture employment. Source for South Africa: Statistics South Africa, “Quarterly Labor Force Survey (QLFS), 2nd Quarter 2014,” http://beta2.statssa.gov.za/?page_id=1854&PPN=P0211, accessed October 1, 2014. Source for Turkey: Today’s Zaman, “Report: Informal Employment Decreases in Turkey,” http://www.todayszaman.com/national_report-informal-employment-decreases-in-turkey_360073.html, accessed October 1, 2014. Source for Malaysia: Department of Statistics Malaysia. 2012. *The Informal Sector Workforce Survey Report*. http://www.statistics.gov.my/portal/download_Labour/download.php?file=informal/Laporan_Penyiasatan_Guna_Tenaga_Sektor_Informal_2012.pdf, accessed September 17, 2014. Source for others: International Labor Organization – Department of Statistics, Table 1 “Employment in the informal economy in non-agricultural activities by component, both sexes, latest year available, 47 countries,” *Statistical update on employment in the informal economy*, http://laborsta.ilo.org/applv8/data/INFORMAL_ECONOMY/2012-06-Statistical%20update%20-%20v2.pdf, accessed October 1, 2014.

² Data are based on 2007 figures. Source: Schneider, Friedrich, Andreas Buehn, Caudio E. Montenegro. 2010. “Shadow Economies All Over the World, New Estimates for 162 Countries from 1999 to 2007,” World Bank Policy Research Working Paper 5356.

Table S4. Upper Middle Income Countries in 2014

For 2014, the World Bank defined upper middle income as \$4,125-12,746 GNI per capita.

http://data.worldbank.org/about/country-and-lending-groups#Upper_middle_income accessed 6 October 2014

| | | |
|------------------------|--------------------|------------------------------|
| Angola | Fiji | Palau |
| Albania | Gabon | Panama |
| Algeria | Grenada | Peru |
| American Samoa | Hungary | Romania |
| Argentina | Iran, Islamic Rep. | Serbia |
| Azerbaijan | Iraq | Seychelles |
| Belarus | Jamaica | South Africa |
| Belize | Jordan | St. Lucia |
| Bosnia and Herzegovina | Kazakhstan | St. Vincent & the Grenadines |
| Botswana | Lebanon | Suriname |
| Brazil | Libya | Thailand |
| Bulgaria | Macedonia, FYR | Tonga |
| China | Malaysia | Tunisia |
| Colombia | Maldives | Turkey |
| Costa Rica | Marshall Islands | Turkmenistan |
| Cuba | Mauritius | Tuvalu |
| Dominica | Mexico | Venezuela, RB |
| Dominican Republic | Montenegro | |

Table S5. Educational Attainment in Large Middle Income Countries

| Country | Average years of total schooling in 2010¹ |
|----------------|---|
| Argentina | 9.5 |
| Brazil | 7.9 |
| Colombia | 9 |
| Mexico | 8.8 |
| Peru | 8.9 |
| S Africa | 9.7 |
| Turkey | 7 |
| Thailand | 8 |
| Malaysia | 10.4 |
| Mean | 8.8 |

¹ Source: Barro, Robert and Jong-Wha Lee, 2013, "A New Data Set of Educational Attainment in the World, 1950-2010." *Journal of Development Economics*, vol 104, pp.184-198.

Table S6. Selected Indicators for High Income Countries

| High Income | Year HI starts ¹ | Averages years of school ² | Year for average | Gini ³ | R&D/GDP ⁴ | Year for R&D |
|--------------------------|-----------------------------|---------------------------------------|------------------|-------------------|----------------------|--------------|
| Switzerland | 1958 | 9 | 1960 | | | |
| USA | 1961 | 9.1 | 1960 | 0.38 | | |
| Denmark | 1967 | 5.7 | 1965 | | 0.8 | 1967 |
| Sweden | 1967 | 8 | 1965 | 0.37 | 1.2 | 1967 |
| Canada | 1968 | 9.4 | 1970 | 0.34 | 1.2 | 1972 |
| Australia | 1969 | 9.7 | 1970 | 0.32 | 1.1 | 1968 |
| Netherlands | 1969 | 8.2 | 1970 | 0.36 | 1.8 | 1969 |
| New Zealand | 1971 | 10.9 | 1970 | | 0.8 | 1972 |
| Belgium | 1972 | 7.7 | 1970 | | 1.3 | 1971 |
| France | 1972 | 4.8 | 1970 | 0.45 | 1.8 | 1972 |
| Germany | 1972 | 7 | 1970 | 0.4 | 1.9 | 1972 |
| UK | 1972 | 7.9 | 1970 | 0.29 | 1.9 | 1972 |
| Norway | 1974 | 8.5 | 1975 | | 1.1 | 1974 |
| Austria | 1975 | 7.7 | 1980 | | 0.9 | 1975 |
| Japan | 1976 | 8.4 | 1975 | | 1.9 | 1976 |
| Italy | 1977 | 6.6 | 1975 | 0.39 | 0.7 | 1977 |
| Finland | 1978 | 7.6 | 1980 | | 1 | 1979 |
| Average 1st round | | 8 | | 0.37 | 1.29 | |
| Hong Kong | 1982 | 8 | 1980 | | | |
| Israel | 1985 | 10.5 | 1985 | | | |
| Singapore | 1987 | 6 | 1985 | | | |
| Ireland | 1989 | 10.1 | 1990 | | | |
| Spain | 1989 | 7 | 1990 | 0.34 | | |
| Taiwan | 1992 | 8 | 1990 | | | |
| Korea | 1994 | 10.5 | 1995 | | | |
| Portugal | 1995 | 6.7 | 1995 | | | |
| Greece | 1999 | 8.9 | 2000 | | | |
| Average 2nd round | | 8.4 | | | | |

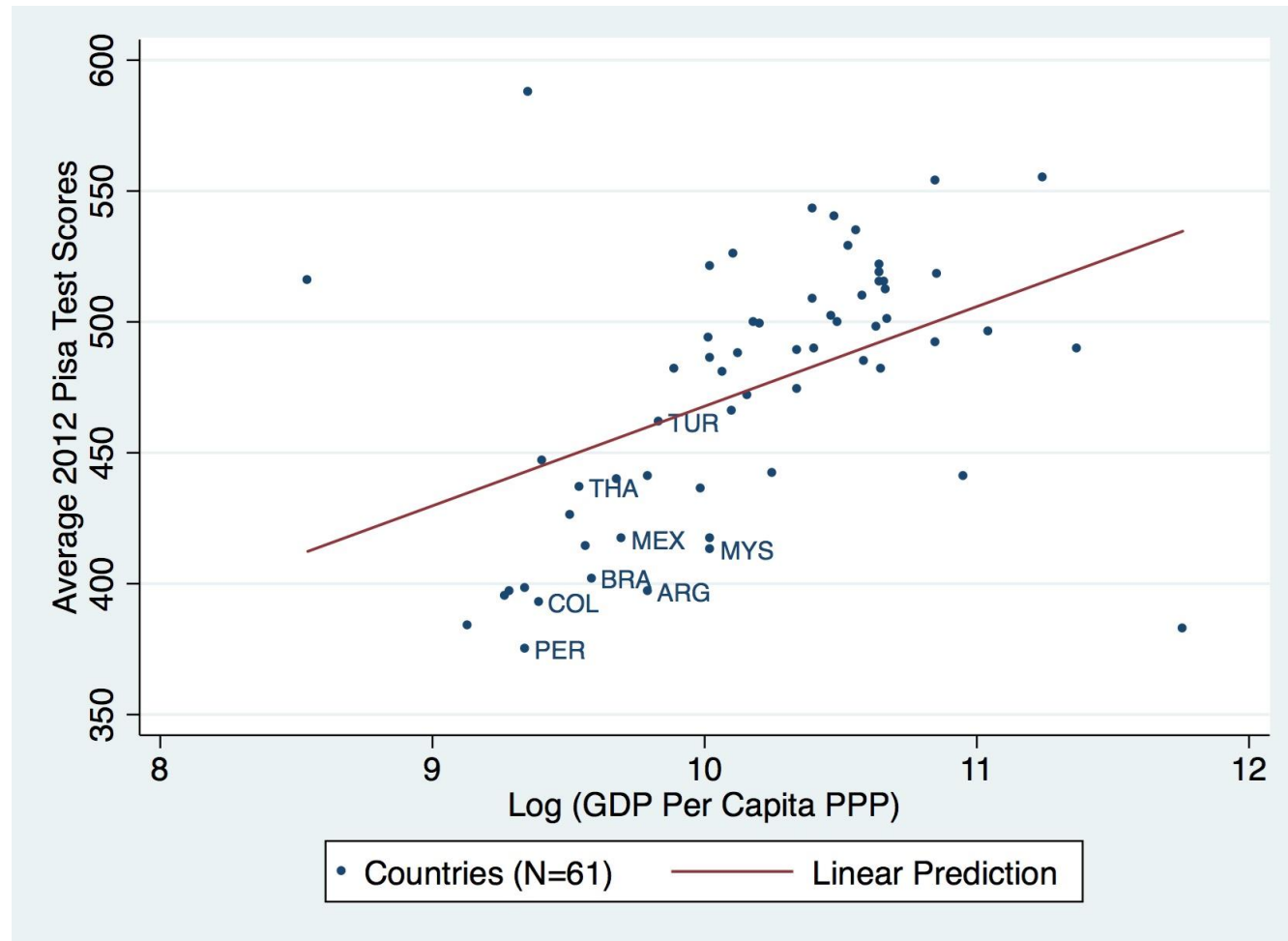
¹ Year HI starts calculated from Felipe, Jesus, Arnelyn Abdon, and Utsav Kumar. 2012. "Tracking the Middle-Income Trap: What is It, Who is in It, and Why?" Levy Economics Institute, Annandale-on-Hudson, NY, appendix, pp. 51-3. The authors use 2010 World Bank income categories and apply inflation adjusted cutoff points to GDP per capita levels back to 1950.

² Source: Barro, Robert and Jong-Wha Lee, 2013, "A New Data Set of Educational Attainment in the World, 1950-2010." *Journal of Development Economics*, vol 104, pp.184-198.

³ Source: van Zanden, J.L., et al. (eds.) (2014). *How Was Life: Global Well-being since 1820*. Paris: OECD, p. 206 for same year as Barro and Lee data.

⁴ Source: OECD. Science and technology indicators, basic statistical series, 1963-1979/80, <http://stats.oecd.org>, accessed 9 June 2015.

Revised Figure S1 with all countries that participated in Pisa 2012, including Shanghai and Qatar outliers.



Revised Figure S2 with outliers (high income petro states (Kuwait, Saudi Arabia, Oman, and Trinidad and Tobago) and financial havens (Bermuda and Macau)).

