Table: International LMI Country Studies on Minimum Wages

Study	Country	Parameters of Study	Employment/Hours Worked	Formal/Informal Sector Shifts	Wages
Kharmis (2013)	Argentina	Date: 1992-2005 Data: Permanent Household Survey (EPH) for the year 1993 and the Continuous Permanent Household survey (EPH-C) for the year 2004			Informal workers, workers without social security contribution, experienced significant wage increases when the minimum wage was raised while formal workers did not.
Fajnzylber (2001)	Brazil	Date: 1982-1997 Data: Brazil's Monthly Employment Survey, individuals aged 15 to 65	Estimates suggest that employment elasticities are negative for most low-wage workers, being lower in absolute value for formal salaried workers (around – 0.1 at the bottom of the wage distribution) than for low-wage informal salaried and self-employed (between –0.25 and –0.35).		Significant minimum wage effects across the whole wage distribution, and both in the formal and the informal sectors. We also find that the total impact of minimum wages on workers' earnings (derived from current and lagged effects) is positive but smaller than the contemporaneous one. Other results include higher earnings elasticities for men, adults and heads of households than for women, teenagers and non-heads, respectively.
Foguel, Ramos, & Carneiro (2001)	Brazil	Date: 1982-1999 Data: Monthly Employment Survey (Pesquisa Mensal de Emprego/IBGE), Official Minimum Wage Rates from the Ministry of Labor, Brazilian Institute of Geography and Statistics	Increases in the value of the official minimum wage tend to decrease formal employment (-0.001 to -0.024) and increase informal employment (0.0004 to 0.003).		A 10% increase in unemployment causes a 1.2% drop in the earnings of informal workers as opposed to a fall of only 0.9% in the wages of formal workers.
Lemos (2004)	Brazil	Date: 1982-2000 Data: Brazil's Monthly Employment Survey and Brazilian Labour Ministry Data	Small negative effects on employment (-0.05) and it is dominated by the hours effect, or reduction in hours worked.		An increase in the minimum wage strongly compresses the wage distribution.
Lemos (2006)	Brazil	Date: 1982-2000 Data: Brazil's Monthly Employment Survey and	Minimum wage has no adverse effect on employment in Brazil between 1982 and 2000, despite		In the formal sector, a 1% increase in the minimum wage increases the wages of those in the 25th percentile

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		Brazilian Labour Ministry Data	the sizeable wage effects found in both the formal and informal sectors.		by 0.33% and of those in the 50th percentile by 0.10% (evaluated at the average "fraction at" 11.6%). In the informal sector, it increases the wages of those in the 25th percentile by 0.31% and of those in the 50th percentile by 0.48%.
Lemos (2007)	Brazil	Date: 1982-2000 Data: Brazil's Monthly Employment Survey and Brazilian Labour Ministry Data	No evidence of adverse employment effects in either the public or private sectors at the aggregate level or for vulnerable groups such as teenagers, women and the low educated. Minimum wage policies in Brazil appear to be a potentially viable anti-poverty instrument.		In the private sector, a 10% increase in the real minimum wage increases the wages of those in the 20th percentile by 3.41% and of those in the 30th percentile by 2.55%. In the public sector, it increases the wages of those in the 20th percentile by 1.79% and of those in the 30th percentile by 1.14%.
Lemos (2009)	Brazil	Date: 1982-2004 Data: Brazil's Monthly Employment Survey and Brazilian Labour Ministry Data	No effect found in either the formal or informal sector (0.080 – 0.358).		Minimum wage compresses the wage distribution of both the formal and informal sectors in Brazil in May 1995.
McIntyre (2006)	Brazil	Date: 1981-1999 (except 1991 and 1994) Data: Pesquisa Nacional de Amostra de Domicilios (PNAD)	Estimates reveal that the minimum wage in Brazil does not increase unemployment, rather it raise formality.	Mandate non-wage benefits and the minimum wage law have no effect on employment, but do encourage informality and lower total compensation. Lower minimum wages encourages workers to formalize their benefits: a 10% decrease in the minimum wage increases by 1.9% the number of workers paying all payroll taxes. The average formality premium is highest among the least educated.	Lower minimum wages and laxer enforcement of the law both increase wages among the low-skilled and decreases wage inequality.

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Neumark, Cunningham, & Siga (2006)	Brazil	Date: 1996-2001 Data: Brazilian Monthly Employment Survey (Pesquisa Mensal do Emprego, or PME)	Negative employment effects (-0.07).		Estimates provide no evidence that minimum wages in Brazil compress the income distribution–lifting family incomes at the lower points of the income distribution–and if anything sometimes indicate that minimum wages have the opposite effect of reducing family incomes in the lower tail of the distribution.
Montenegro & Pagés (2004)	Chile	Date: 1960-1998 Data: Household surveys from the University of Chile's Economics Department	Results suggest that both minimum wages and job security regulations reduce the employment opportunities of the young, the unskilled and particularly unskilled youth while promoting the employment rates of skilled and older workers. We have also found indications that job security regulations may force some workers, particularly women and the unskilled, out of wage employment and into self-employment.		
Fang & Lin (2013)	China	Date: 2004-2009 Data: Urban Household Survey (UHS) and minimum wage data collected at the county level	Minimum wage changes have significant adverse effects on employment in the Eastern and Central regions of China, and result in disemployment for females, young adults, and low-skilled workers. Youth: -0.136 to -0.156 At-Risk Groups: -0.265 to -0.340.		
Wang & Gunderson (2011)	China	Date: 2000-2007 Data: China Population Statistic Yearbook	Negative employment effects in slower growing regions (-0.156 to -0.178); larger negative effects in non-state owned organizations that tend to be more responsive to market pressures; much larger		

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			lagged effects reflecting the time needed for adjustments to occur; no adverse employment effects in the prosperous and growing.		
Bell (1997)	Colombia	Date: 1977-1987 Data: Colombia's Annual Industrial Survey	Substantial disemployment effects of minimum wages are found, where the impact is estimated at roughly 2% to 12% over 1981-1987. Implied Elasticities suggest that the increase in the relative value of the minimum wage in Colombia from 1977 to 1987 (roughly 15%) had the effect of reducing manufacturing employment by 5% over this period.		Minimum wages have a strong impact on wages judging by their proximity to the average wage and time-series estimates.
Manloney & Nuñez Mendez (2004)	Colombia	Date: 1997 and 1999 Data: National Statistical Agency (DANE) and National Household Survey (ENH)	A rise in the minimum wage has a statistically very significant impact on the probability of becoming unemployed that again decreases with a rising position in the wage distribution. (-0.161 to -0.356).		The effect on real wages of a change in the real minimum wage is high for those earning 70% to 90% of the minimum wage; 87% of the rise in minimum wages is communicated to wages.
El Hamidi & Terrell (2001)	Costa Rica	Date: 1976-1992 Data: Household Survey of Employment and Unemployment, Ministry of Labor Wage Data	Increase in the minimum wage relative to the average wage is associated with an increase in the level of covered sector employment by 0.56%, but no effect on the number of self-employed over time; and an increase in the average number of hours worked per week by 0.14% in the covered sector and 0.34% in the uncovered sector. These findings may be interpreted as supporting the monopsonistic model, which predicts that increases in wages can increase employment up to the point where		

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			the marginal cost is equal to the marginal revenue.		
Gindling & Terrell (2005)	Costa Rica	Date: 1988-2000 Data: Legal Minimum Wage Data from the Ministry of Labor, Household Surveys for Multiple Purposes by the Costa Rican Institute of Statistics and Census, and industry data from the Costa Rican Central Bank	A 10% increase in minimum wages lowers employment in the covered sector by 1.09% and decreases the average number of hours worked of those who remain in the covered sector by about 0.6%. Despite the wide range of minimum wages, the largest impact on the wages and employment of covered sector workers is in the lower half of the distribution.		Legal minimum wages have a significant positive effect on the wages of workers in the covered sector (with an elasticity of 0.10) but no effect on wages of workers in the uncovered sector.
Eriksson & Pytlokova (2004)	Czech Republic	Date: 1998-2000 Data: Average Earnings Information System	Negative employment and working hours effects of -14.4% and 5.1%, respectively, in the year following the 1998 minimum wage increase. Negative employment and working hours effects of -5.1% and 5.4%, respectively, in the year following the 1999 minimum wage increase.		The larger the proportion of low-paid workers in a firm, the higher the increase in the firm's average wage.
Jones (1997)	Ghana	Date: 1970-1991 Data: Yearbook of Labour Statistics (ILO), International Financial Statistics (IMF), African Employment Report (1990), Penn World Tables, World Bank Social Indicators of Development (1995), World Bank's 'Regional Program on Enterprise Development' (1992)	Provides fairly strong evidence that the minimum wage in Ghana had a negative impact on employment in the formal private sector (-0.12 elasticity) and formal public sector (-0.17 elasticity). Informal employment increased as a result of increased of the minimum wage. Employment of women.	Implied elasticities suggests that a large proportion of the public sector workers displaced by the minimum wage shifted into informal sector employment.	
Gindling & Terrel (2007)	Honduras	Date: 1990-2004 Data: Honduras Minimum Wage Decrees and the Permanent Household	Disemployment effects in the private sector (-0.46).		Wage elasticity of 0.29 overall. However, the welfare – the total earnings – of low-paid workers in the

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		Surveys for Multiple Purposes			large-firm covered sector falls with higher minimum wages.
Alatas & Cameron (2003)	Indonesia	Date: 1990-1996 Data: Annual Survey of Manufacturing Firms (Survei Tahunan Perusahaan Industri, SI)	Some evidence of a negative employment impact for small, domestic firms but no employment impact for large firms – foreign or domestic.		
Comola & De Mello (2011)	Indonesia	Date: 1996-2004 Data: Indonesian Statistics Bureau's National Labor Force Survey (Sakernas) working age (15 to 65), National Economic Survey (Susenas), Industrial Survey (Survei Industri)	Minimum- wage hikes destroy formal sector jobs (-0.056), but these jobs losses are more than compensated for by the expansion of the informal sector (0.074), suggesting that minimum wage legislation is hurting, instead of protecting vulnerable workers.	The negative and significant coefficient on unemployment seems to suggest that the decrease in formal-sector employment due to a rise in the relative value of the minimum wage shifts workers from "queuing" unemployment to the inactive population of the informal sector.	
Del Carpio, Nguyen, & Wang (2012)	Indonesia	Date: 1993-2006 Data: Annual Manufacturing Survey (Survei Industri or SI) and the National Socio-Economic Survey (Susenas)	The employment effects of minimum wages are significant and negative among all firms (-0.0233 to -0.0542), but more predominant in small firms and less educated workers and less among large firms and workers with high school education. Disemployment effects are stronger for non-production workers (-0.054) and women than for production workers (-0.023).		Minimum wages are more binding in small firms than in large firms.
Harrison & Scorse (2010)	Indonesia	Date: 1990-1996 Data: Annual Manufacturing Survey, Badan Pusat Statistik	Results suggest that the minimum wage increases led to employment losses for production workers across all sectors in manufacturing.		A 1% increase in the real value of the minimum wage was associated with a 0.675% increase in the real unskilled wage.
Magruder (2013)	Indonesia	Date: 1993-2000	During the 1990s massive foreign investment and rapid economic	Shift from informal to formal employment in in local	The bottom quartile of the wage distribution experiences massive

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		Data: Indonesian Family Life Survey (waves 1, 2, and 3), Statistics Industry (SI)	growth, wages were increased and a "big push" in the economy increased domestic demand. Observing one out of the 33 districts in Indonesia, formal employment increased and informal employment decreased only in local industries; tradable manufacturing firms saw no growth in employment, and untradeable, but non-industrializable services saw an increase in informal employment.	industries; tradable industry saw no movements; untradeable, non-industrializable services saw a rise in informal employment.	wage gains when minimum wages grow, so that a doubling of minimum wages is associated with a 150% to 160% increase in the 25th percentile of the wage distribution.
Rama (2001)	Indonesia	Date: 1993 Data: Labor Force Survey (Sakernas)	Urban unemployment decreased by 0% to 5%. The employment effects, however, varied substantially by firm size: small firms apparently experienced substantial decreases in employment, whereas some large firms actually saw their employment increase. Workers in these large firms, the author concludes, are the evident winners from the minimum wage hike.		Average wages increased by 5% to 15%.
Suryahadi, Widyanti, Perwira, & Sumarto (2003)	Indonesia	Date: 1988-2000 Data: National Labour Survey (Sakernas)	The imposition of minimum wages has a negative and statistically significant impact on employment in the urban formal sector. The disemployment impact is greatest for female, young and less educated workers, while the employment prospects of white-collar workers are enhanced by increases in minimum wages. (-0.112).	Some workers who lose jobs in the formal sector and have to relocate to the informal sector face lower earnings and poorer working conditions.	The minimum wage become progressively more binding and impactful on the wage distribution in Indonesia from 1988 to 2000.
Andalón & Pagés (2008)	Kenya	Date: 1998-1999	Estimates indicate that a 10%-point increase in the minimum to median		Minimum wages were positively associated with wages of low-

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		Data: Central Bureau of Statistics' Integrated Labour Force Survey	wage ratio could be associated with a decline in the share of formal employment of between 1.2% and 5.6% and an increase of between 2.7% and 5.9% points in the share of self-employment.		educated workers and women in non-agricultural activities, while no such relationship is found for workers in agriculture.
Bell (1997)	Mexico	Date: 1984-1990 Data: Mexico's Annual Industrial Survey, Mexican Exuesta Nationale de Empleo	Minimum wages had virtually no effect on employment in the formal sector.		Minimum wages had virtually no effect on wages in the formal sector. Significant numbers of workers are paid at or below minimum wages.
Bosch & Manacorda (2010)	Mexico	Date: 1989-2000 Data: Micro-data, Encuesta Nacional de Empleo Urbano			A decline in the real value of the minimum wage explains a very significant increase in inequality observed in Mexico between the last 1980s and late 1990s.
Feliciano (1998)	Mexico	Date: 1970,1980,1990 Data: Industrial Census, Monthly Industrial Survey	Large reductions in the minimum wage were found to increase employment of females ages 15 to 64 (-0.58 to -1.25). Demanded shifted away from older skilled males toward less-skilled male workers.		
Castillo-Freeman & Freeman (1992)	Puerto Rico	Date: 1956-1987 Data: U.S. Department of Labor "Minimum Wage Industry Studies", Census Population for Puerto Rico, Current Population Survey (CPS) for Puerto Rico	The imposition of the U.S.-level minimum wage to Puerto Rico distorted the Puerto Rican earnings distribution, substantially reduced employment on the island (0.20 to -0.91), reallocated labor across industries, and affected the characteristics of migrants to the United States.		Three data sets of earnings show remarkable spikes at the relevant minima in each distribution, implying that the minimum wage law is a major determinant of actual wages paid.
Eriksson & Pytlokova (2004)	Slovak Republic	Date: 1998-2000 Data: Average Earnings Information System	Negative effect on employment in 1998 after first wage hike, but no effect in 1999 after second wage hike. (Very small number of observations that may not present adequate results).		Average wage of firms employing relatively many workers from the lower end of the wage distribution is raised more as a consequence of hikes in the minimum wage.

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Dinkelman & Ranchhod (2012)	South Africa	Date: September 2001, March 2002, September 2002, March 2003, September 2003, March 2004 Data: South African Labour Force Surveys	No significant effects on employment or hours of work for domestic workers in the informal sector.		There is a large, significant increase in wages after the minimum wage was increased, of between 18.9 and 21.7%.
Bhorat, Kanbur, & Stanwix (2014)	South Africa	Date: September 2000 to September 2007 Data: South African Labour Force Surveys	Results suggest a significant employment reduction in agriculture from the minimum wage – and in particular a noticeable move away from employment of part-time workers – an increase in wages on average, and a rise in non-wage compliance. Overall average of hours worked fell in the post-law period, suggesting that employers adjusted to some extent on the intensive margin, and it appears that hours of work increased by more in areas where wages were lower in the pre-law period – driven largely by the fall in part-time employment.	Substantial increase in contract coverage for farmworkers in South Africa. The number of workers with a written employment contract increased to reach 52% in 2007.	Substantial increase in farmworkers wages by approximately 30%.
Hertz (2005)	South Africa	Date: September 2001 to September 2004 Data: South African Labour Force Surveys	Hours of work per week decreased (-0.47 for women and -0.28 for men) and employment fell (between -0.19 and -0.33) for domestic service workers.		Average wages by those employed increased by approximately 20%.
Bhorat, Kanbur, & Mayet (2012)	South Africa	Date: 2000-2007 Data: South African Labour Force Surveys	No clear evidence that the introduction of minimum wage laws had a significant impact on employment in a given period for the retail, domestic work, taxi, security, and forestry sectors. Workers in the retail (-4.5%), security (-4.5%), and domestic work (-7.7%) sectors experienced a		Evidence of a significant increase in real hourly wages in the post-law period in the retail, domestic work, and security sectors examined. The taxi and forestry sectors did not experience an increase in wages.

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			reduction of hours, but increases in wages outweighed these effects.		
Murray & van Walbeek (2007)	South Africa	Date: January to March 2005 Data: 103 semi-structured interviews of large and medium scale farming employers	No large disemployment effects occurred for farm workers, but there was some indication that employers substituted at the lower skills margin as well as adjusted at the intensive margin of labour to reduce weekly wage costs. On average, workers hours were reduced between 27 and 35 hours per week, as opposed to the standard 45 hour work week.		
Conradie (2004)	South Africa	Date: 2004 Data: Survey of 190 wine and table grape farmers	Disemployment effects are found with table grape farm workers (-0.59) and wine farm workers (-0.33).		
Nattrass & Seekings (2014)	South Africa	Date: 2010 – 2011 Data: National Bargaining Council for the Clothing and Manufacturing Industry	The National Bargaining Council for the Clothing and Manufacturing Industry launched a wage compliance drive in 2010, which resulted in the closing of four factories that threatened at least 20,000 jobs in Newcastle, South Africa.		
Garbers (2015 Unpublished)	South Africa	Date: 1997-2007 Data: October Household Survey and Labour Force Survey	Findings indicate that formal unskilled farm employment decreased by approximately 16% as a result of the 2003 agricultural minimum wage regulation, of which 7.5% is directly attributable to higher unskilled labor costs resulting from the wage floor. There is also evidence of skill and capital intensification resulting from the minimum wage.		
Del Carpio, Messina, &	Thailand	Date: 1998-2010	Minimum-wage increases have small disemployment effects on		In spite of substantial non-compliance, the minimum wage in

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Sanz-de-Galdeano (2014)		Data: Labor Force Survey and Household Socio-Economic Survey	female, elderly, and less-educated workers and large positive effects on the wages of prime-age male workers (-0.055). As such, increases in the minimum wage are associated with increases in household consumption per capita in general, but the consumption increase is greatest among those households around the median of the distribution. In fact, rises in the minimum wage increased inequality in consumption per capita within the bottom half of the distribution.		Thailand is binding, and it has a bearing on actual wage (0.36).
Del Carpio, Margolis, & Okamura (2013)	The Philippines	N/A	Real minimum-wage increases had negligible effects on overall employment, owing to the limited coverage of minimum wage rules and high noncompliance.		
Lanzona, 2012	The Philippines	N/A	Sectors with high coverage and compliance experienced negative employment effects.		
Strobl & Walsh, (2003)	Trinidad & Tabago	Date: 1996-1998 Data: Continuous Sample Survey of Population	Both large and small employers in some cases responded to the minimum wage by laying off workers. Non-compliance by employers was proven to be a substantial issue in implementing increased minimum wages.		Males working in large firms tended to have their wage increased to at least the minimum level; some females in both large and small firms experienced a wage increase due the minimum wage.
Del Carpio & Liang (2013)	Vietnam	N/A	Low-income or otherwise vulnerable workers (including women, youth, recent labor-market entrants, the low-skilled, non-managerial nonproduction workers such as cleaners or guards, elderly workers, and those		

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			employed by small firms) are particularly likely to be shut out of the formal labor market as a result of overly high minimum wages.		
Nguyen (2010)	Vietnam	Date: 2004 and 2006 Data: Vietnam Household Living Standard Surveys	Minimum wage increase reduced employment of low-wage workers in the formal sector. However, workers who lost formal sector jobs were able to find jobs in the informal sector.		The effect of the minimum wage increase on wages and expenditures of workers is not statistically significant.