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Executive summary

Although the foundational theories advancing the adoption of free trade policies were formulated more than two centuries ago, policy makers, economists, and the average citizen are still grappling with the real world implications of economic liberalization. Increasingly, traditional free trade advocates are addressing the fact that governmental policies implemented alongside a program of trade openness can significantly impact the degree to which an economy benefits from trade. Whether it is Christine Lagarde of the International Monetary Fund calling publicly for greater wealth redistribution or the recent focus on “inclusive growth” at APEC and World Economic Forum conferences, global leaders are questioning the best ways to manage the social consequences of trade openness. Our report examines how trade openness impacts employment and income inequality in 21 APEC economies, which collectively represent over half of the world’s GDP. We examine the questions broadly with regression analyses spanning all member economies, followed by two case studies on Viet Nam and Chile to compare the effects in greater detail. We conclude with policy options for consideration based on our findings.

We begin our study with a broad-based quantitative regression analysis using panel data covering the period 1980-2013 at three-year intervals for 21 APEC economies to examine the impact of trade openness on employment opportunities and inequality. We use three different regression models: a fixed effects estimator, instrumentation and systems GMM. Because APEC members are extremely diverse, which could impact the way trade affects inequality and employment, we also conduct a separate analysis distinguishing between high income economies and everyone else.

In our analysis spanning all APEC member economies, we find that trade openness has no significant effect on inequality after accounting for taxes and transfers, but we that it results a significant increase in inequality before taxes and transfers. The effect is significant at the 1% level when we use instrumentation and Systems GMM models to control for endogeneity. In terms of employment opportunities, we find that the benefits of trade openness have not been distributed evenly. We find that while trade openness has increased the share of employment held by high-skilled workers, it has reduced the share of employment held by the medium-skilled.

Differentiating between income level makes a difference. We find that trade openness has a larger impact on increasing inequality before taxes and transfers in economies are classified as high income, compared to those who are not. We also find the negative impact of trade openness on medium skill employment to be greater in high income economies. These results are significant across both instrumentation and Systems GMM estimations. This analysis thus demonstrates that the skill-biased and inequality-enhancing effects of trade seem to be more severe in high income economies, highlighting the fact that trade seems to have different impacts depending on an economy’s stage of development.
We followed our broad quantitative analysis with a more detailed look at employment and inequality dynamics in Viet Nam and Chile. Chile and Viet Nam are both trade liberalization success stories to the extent that both economies experienced notable, poverty-reducing growth in the wake of trade reform as has been demonstrated repeatedly in research literature. Viet Nam, however, has maintained a more equitable growth trajectory than Chile, with medium skill employment opportunities increasing markedly as the economy opened up to international trade. This is consistent with our quantitative findings. However, there are a broad range of domestic factors that play an important role in the degree to which an economy is able to benefit from gains from trade including factor endowments, skill distribution of the labour force, institutions and policies. We explore three of policy variables in the two economies: education, social protection and governance.

We find that in both Viet Nam and Chile, social protection has not had a mitigating effect on inequality because the benefits are not sufficiently adequate to provide necessary security for households. Access to education, however, has helped Viet Nam capitalize on skill-biased opportunities that have come with trade, but currently faces the challenge of skills mismatch as curriculum and aspiration are not in sync with the kinds of jobs being created. In Chile, the education system contributes to the exacerbation of unequal growth, as access to quality schools are biased in favour of elites. We find that governance also plays an important role in how the two economies respond to trade openness. In Viet Nam, petty corruption and a rent-seeking culture impede the implementation of policies that would otherwise promote equitable growth. State owned enterprises suffer from inefficient management policies and therefore divert precious resources away from social programs that could promote equal access to opportunity. In Chile, the few state owned enterprises that remain are more efficiently managed, and therefore contribute substantially to government budgets for social programs. While rent-seeking is less of an issue in Chile, the high concentration of wealth in relatively few hands impedes access to opportunity which contributes to the high level of inequality.

Our research indicates that trade openness has a skills-biased effect on opportunity in the two economies, and at the same time introduces increased employment volatility. Therefore, increasing access to opportunity through skill enhancement and by removing existing barriers can help mitigate inequitable growth. At the same time, providing security and stability through adjustment policies can counteract increased volatility, and improve outcomes for the most vulnerable. We conclude with policy recommendations for APEC, Viet Nam and Chile.
INTRODUCTION

Crafting trade policy in the 21st century has become increasingly complex. Traditionally, international trade has been about the exchange of hard goods, and increasing the welfare of participating nations. The increase in complexity relates to the kinds of goods and services that we trade, but more importantly, the social and political conditions under which trade will occur. It entails a much greater sensitivity to the delicate balance that must be maintained between international economic integration and mounting domestic pressures (Rodrik 2000).

In our current political climate, where numerous regional and multi-party trade agreements are under consideration, domestic grievances relating to growing income inequality have had destabilizing effects, regardless of relation to actual trade issues. The mere perception that trade might fuel inequality or affect employment opportunities has been sufficient to derail or delay multilateral trade deals like the Trans Pacific Partnership (TPP), The Comprehensive Economic and Trade Agreement (CETA) and the Transatlantic Trade and Investment Partnership (TTIP). The rising inequalities, and the political tensions that have followed, have been most felt in developed economies, but are now spreading to developing nations as well.

After more than three decades of increasing trade openness around the globe, substantial empirical evidence demonstrates that on average, the overall welfare of a nation can improve with greater openness (Hoekman and Winters 2005). Increasingly, however, researchers have honed in on the factors that qualify that general conclusion: who has been left behind by trade openness, and can anything be done to improve their welfare?

Our group is working with the Secretariat of the Asia Pacific Economic Cooperation (APEC) to examine the relationship between trade openness, employment and income inequality in the 21 member economies. APEC, like many proponents of trade openness, recognizes the value of developing targeted policies that can best balance the benefits of trade openness while addressing the needs of those left behind. As recent political upheavals have shown,
when such concerns are not met, governments tend to revert to greater protectionist policies, rolling back many of the benefits accrued with trade openness (Epstein and Nelson 2016).

In addition to identifying the subsections of communities that have benefitted the least from trade openness, Section 1 of this study will highlight the trends that have characterized the employment landscape within APEC economies and how these are tied to levels of income inequality and trade openness. We conduct an aggregate analysis of APEC’s 21 economies to draw our findings using panel data.

In Section 2 of the study, we identify factors that contribute to income inequality through our comparative case study in Viet Nam and Chile. We look at each factor separately to explain the manifestation of the inequalities and their connection to trade openness. We also discuss the policy strategies that have been used to mitigate inequality, and suggest additional measures.

To conclude Section 3 consists of general policy recommendations informed by the results of the aggregate analysis and the case studies. Here we suggest measures that involve the participation of governments, industry and international agencies to maintain the benefits of trade while addressing concerns surrounding inequality.

**Asia Pacific Economic Cooperation (APEC)**

APEC is a regional forum with a stated mission to promote sustainable economic growth and prosperity. Founded in 1989, the forum brings together 21 diverse economies from Papua New Guinea and Brunei to China, Russia, and the United States. Collectively, APEC economies represent approximately 59% of global GDP and 49% of international trade (APEC 2015). While their activities have largely revolved around supporting regional economic integration, APEC has incorporated an inclusive growth mandate into their agenda. Related initiatives have included support for Small and Medium Enterprises (SMEs) and digital skills training for vulnerable rural and urban communities. Last year, the theme at the 2016 APEC meeting of government leaders in Peru was Quality Growth and Human Development. While working toward APEC’s ambitious goal of free and open trade for the region by 2020, senior officials also emphasized inclusive integration by focusing on initiatives that help build human capacities, grow small businesses and strengthen food markets.
Our analysis of trade’s impact on jobs and income inequality has the potential to assist APEC in their understanding of regional dynamics, and could further allow them to craft targeted policy recommendations.

**LITERATURE REVIEW**

Since the acceleration of trade liberalization policies in the 1980’s substantial research has been done to account for how trade openness impacts workers at different income levels.\(^1\) We are most interested in how trade openness has affected the welfare of workers at the lowest level of the income scale. Much has been written about the relationship between trade openness, economic growth and poverty. Despite the strength of theoretical modelling highlighting links between the three, and the demonstrated success stories in the East Asian miracle economies among others, empirical analysis of trade openness’s impact on economic growth and poverty returns mixed results (Winters 2002). Increasingly, studies in the trade literature are investigating why the results are mixed, and what factors impact the distribution of growth benefits at different income levels. These include the quality of institutions, the initial market situation, characteristics of the workers, labour and trade policies, and political dynamics (Rodriguez and Rodrik 2000; Copeland and Taylor 2001; Winters 2002; Wacziarg 2001).

Our concentration is on the impact of trade openness on jobs, wages and income inequality. Job creation, though an essential driver of economic growth, especially in labour abundant economies, has been shown to be insufficient on its own in reducing poverty levels, with increased wages and productivity having demonstrably greater impact (Paci, Serneels, and others 2007). The International Labour Organization has estimated that the number of working poor in the world are seven times that of the unemployed. (Paci, Serneels, and others 2007). Structural adjustment resulting from trade openness can open opportunities over the long-run, but whether low-income workers can easily access welfare-improving opportunities has proven critical to poverty reduction (Hollweg et al. 2014). Labour mobility has become an important focus for development research (Hollweg et al. 2014;

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1 This study uses the term “trade openness” to refer to the importance of trade in an economy. While we later identify and define a trade openness variable (the sum of imports and exports as a ratio of GDP) as part of our quantitative analysis, our use of the term should generally be understood as a a snapshot of how much an economy is open to trade at a given point in time. Trade openness is different, although potentially parallel with trade liberalization, which constitutes the removal of barriers and restrictions between nations.
Bineswaree Bolaky and Caroline Freund (2004) found that excessive regulation that leads to high labour mobility costs can significantly reduce gains from trade openness, suggesting that reducing labour rigidities can help improve welfare (Bolaky and Freund 2004). Brooks and Go (2012) look at the effect of trade on inclusive growth in Asia, and found that inclusion was contingent on labour mobility and policies which reduced adjustment costs for workers, such as unemployment insurance, retraining, and job search assistance (Brooks and Go 2012).

Supporting inclusive economic growth is not just about reducing poverty levels, but also about reducing levels of income inequality. Rising income inequality has, in fact, become more acceptable if the growth has occurred so quickly that absolute poverty is lessened (Goldberg and Pavcnik 2004). Yet, as we have witnessed in even the most advanced economies, the disparity between the uppermost income quintile and the lowest can have destabilising effects, despite dramatic improvements of overall growth due to trade openness (Hoeller, Joumard, and Koske 2014). Berg and Ostry (2011) show that beyond causing political instability and discouraging investment, inequality plays a role in reducing the length of growth spells. According to their estimates, closing half of the inequality gap in Latin America and Asia could double the duration of a growth spell (Ostry, Berg, and others 2011). Fawaz, Rahnama and Valcarcel (2014), nuanced this further by distinguishing between high-income (HIDC) and low-income developing “countries” (LIDC), and found a negative relationship between income inequality and economic growth in LIDC, and a positive inequality–growth relationship for HIDC (Fawaz, Rahnama, and Valcarcel 2014). This reaffirms Kuznets’ hypothesis that at low levels of development, income inequality increases, but decreases after an economy has achieved a certain level of development.

We expect a rise in income inequality from capital abundant economies if we adhere to Stolper Samuelson’s foundational theorem, but we have also seen a rise in income inequality in developing nations, Viet Nam and China are just two examples. There is no consensus regarding the influence of trade with respect to inequality, and the empirical evidence is scant (Harrison, McLaren, and McMillan 2011). David Dollar and Aart Kraay (2001a), for instance, find no systematic relationship between trade openness and inequality (Dollar, Kraay, and others 2001). Many have looked to other factors including skill-biased technological change (SBTC) (Neary 2003; Feenstra and Hanson 1999), and domestic institutional and social policy differences to account for rising inequality in developing
nations (Heckman and Pagés 2000; Davidson and Matusz 2009; “Inequality - OECD” 2016). In an analysis using the global multiregional input-output framework covering Spain, Italy, France, Germany, the UK, the US, Japan, and China, for years 1995–2011, Portella-Carbo concludes that effects of international trade on domestic employment varies highly across countries (Portella-Carbó 2016). Countries that depend more on domestic autonomous demand seemed more affected by changing economic relations when it came to the generation of net employment. While examining studies concerning the nexus of trade and employment nexus, Baldwin concludes that labour supplies, technology and demand have a bigger impact on employment and wages than changes in trading patterns (Baldwin and Cain 2000).

Others have found direct connections between inequality and trade. For instance, there is evidence to support the claim that sectors that have experienced a large reduction in tariffs have also seen a corresponding decrease in industry wage premiums (Goldberg and Pavcnik 2004). Robert Feenstra and Gordon Hanson (1996), explored the effects of offshoring on wages in developing economies (Feenstra and Hanson 1996). They proposed that low-skilled jobs offshored from developed economies would require a higher skill set than the jobs that had previously dominated in the developing economy. The lowest skilled labourers experienced a decrease in wages, which could explain rising income inequality. Dung (2004) also found that while openness in Vietnamese provinces had a positive effect on growth and poverty reduction, it also contributed to the increasing the gap between the first and fifth quintile of income. Interestingly, she highlights that State expenditure has similar effects but reduced income inequality, which underscores the government’s role as a “social equalizer” (Dung 2004). Vere’s study of the impact of trade liberalization on employment in Hong Kong, China, demonstrated that openness to trade with China shifted low-skilled jobs from the manufacturing sector to the low-skilled service sector, but this was accompanied by a corresponding decrease in nominal wages (Vere 2013). Meanwhile, high skilled managers and professionals saw substantial increase in wages, contributing to a Gini coefficient of 53.7 in 2011, higher than Singapore or New York.

However, we also must consider that among other factors, the implementation of macroeconomic policies will inevitably impact income distribution alongside trade openness. Blejer and Guerrero detailed the challenges of untangling the effects of
macroeconomic policies and the various ways these policy packages impact income distribution in their empirical study in the Philippines (Blejer and Guerrero 1990).

SECTION I: EMPLOYMENT AND INEQUALITY TRENDS IN APEC

Traditional economic thought expects trade openness to trigger a shuffling between sectors in developing countries, where labour-intensive industries decline while skill-intensive industries expand (Jansen and Lee 2007). Yet, empirical evidence has challenged these assumptions.

The study of the relationship between trade and economic opportunities and outcomes has spawned a vast literature. Using panel data covering around 80 countries 1970–2005 and controlling for potential endogeneity with the Generalized Method of Moments (GMM), Bergh and Nilsson (2010) find that freedom to trade causes inequality. Also with a panel dataset, Aradhyula, Rahman and Seenivasan (2007) find that trade increases inequality in overall countries, but find this effect to be significant only on developing countries when separating them from developed countries (Bergh and Nilsson 2010; Aradhyula et al. 2007). Looking at countries with similar factor endowments, Manasse and Turrini (2001) and Duranton (1999) find that it can raise wage inequality within sectors and countries (Manasse and Turrini 2001; Duranton 1999).

On employment effects of trade openness, empirical evidence points towards a change in the relative demand for workers (Jansen and Lee 2007). Modelling catch-up technological change in the South, Zhu and Trefler (2005) find that the production of less skill-intensive Northern goods migrate South where they become the most skill-intensive Southern goods, with the demand for skills causing wage inequality to rise in both regions (Zhu and Trefler 2005). Yet, rather than pointing towards sectoral change, Wacziarg and Wallack (2004) posit that a lot of the employment transformation takes place within sectors (Wacziarg and Wallack 2004). The offshoring literature suggests that job destruction and creation do not occur because of sector and skills, but rather due to the tradability of services (Grossman, Rossi-Hansberg, and others 2006; Van Welsum and Reif 2005).

In light of these heterogeneous findings, as well as the lack of analyses pertaining specifically to APEC members, which are very diverse in their economic composition, we attempt to test the effect of trade openness on their economies. While APEC includes only 21
economies, in the aggregate, it represents half of the world’s Gross Domestic Product (GDP) as well as half of the world’s trade. Our analysis thus comprises a significant part of the world economy.

**RESEARCH OBJECTIVES**

We aim to analyze the effect of trade openness on inequality and employment opportunities in APEC economies. To evaluate this impact, we create a panel dataset over the 1980-2013 period with 3-year intervals for the 21 APEC member economies. We use a panel fixed effects model to estimate the effects of trade openness on employment, as well as instrumentation and the Systems Generalized Method-of-Moments (GMM) to address potential endogeneity problems in trade-inequality regressions.

**DATA AND VARIABLES**

*Dependent Variable*

- **Inequality**

  We use two different Gini coefficient measures to assess inequality at the national level. The Gini coefficient measures inequality through a 0 to 100 score, where 0 indicates perfect equality with every person having the same income, and 100, a hypothetical state where one person would possess all the income. The net Gini coefficients nets out taxes and transfers, while the market Gini coefficient does not. Following Dabla-Norris et. al from the IMF (2015), data is collected from the Solt World Income Inequality Database (SWIID) version 3.1 (Dabla-Norris et al. 2015). This dataset compensates for the lack of consistent cross-sectional and cross-national data on income inequality through a custom missing data algorithm, in order to provide comparable Gini indices (Solt 2009).

- **Employment**

  We use data on the percentage of total employment by skill level (low skills, medium skills and high skills). The definition of skill levels is based on the ILO’s International Standard Classification of Occupations (ISCO). While the ISCO distinguishes between four different employment categories, our data uses ISCO data as follows:

  - Low skills: Skill level 1;
  - Medium skills: Skill level 2;
  - High skills: Skill levels 3 and 4.
Specifically, tasks performed at level 1 typically combine physical, manual or routine tasks. Occupations classified as level 2 involve occupations for which literacy is likely to be required; the skills level needed would be approximately equivalent to the first stage of secondary education. At level 3, workers perform complex technical and practical tasks “that require an extensive body of factual, technical and procedural knowledge in a specialized field”. Generally, level 3 workers possess a high literacy, numeracy and interpersonal communication skills. Lastly, level 4 occupations require a high level of complex problem-solving, decision-making and creativity, based on extensive theoretical and factual knowledge. Data is collected from the International Labour Organization. The dataset further distinguishes between gender at each skill level.

**Key Independent Variable**

Our independent variable of interest is trade openness, which is measured as the ratio of foreign trade, or sum of exports and imports as a percentage of GDP. Data for this variable is from the World Bank World Development Indicators (WDI).

**Control Variables**

We control for a set of variables potentially correlated to both inequality and employment, as well as trade openness. Following the literature on the effects of good governance on the distribution of the gains of trade (Shahin 2016; Shafique, Haq, and Arif 2006), we add two components of the World Bank’s Governance Indicators: government effectiveness and the control of corruption. The first portrays perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government’s commitment to such policies. The second captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as the “capture” of the state by elites and private interests. Data is from the Worldwide Governance Indicators of World Bank. We also control for population growth, following Brueckner and Schwandt (Brueckner and Schwandt 2015). We control for GDP growth, as the rate of economic growth has been shown to have an effect on inequality (Cingano 2014; Kuznets 1955). Data is from the World Bank WDI. Finally, we also control for each members’ level of economic and overall globalization and restrictions index from the KOF index of globalization.
The APEC members are extremely diverse in terms of how their economies are structured, which may impact differently the way trade affects inequality and employment. In order to differentiate those effects, we create two dummy variables according to the World Bank’s categorization of income levels. The first one distinguishes countries between those above the upper middle income category and those below, while the second distinguishes between those above the lower middle income category and those below. As of 2016, the World Bank defines the upper middle income lower classification at a GNI per capita between $4,036 and $12,475 and the lower middle income classification between $1,026 and $4,036, calculated using the World Bank Atlas method. The “above upper middle income” variable is thus coded as 1 if the economy has a GNI per capita above $12,475 and as 0 if below for a given year, while the “above lower middle income” is coded as 1 if the economy has a GNI per capita above $4,036 and as 0 if below for a given year. We then interact these dummies, in separate regressions, with the trade openness variable in order to test whether trade has an additional effect on countries either above the upper middle income or lower middle income level.

**Empirical Strategy**

We estimate three different regression models. The first one uses a fixed effects estimator to account for unobservable factors varying over time but not member specific, and unobservable factors varying across countries but stable over time. Standard errors are clustered at the national level. To assess the economic relationship between trade openness and inequality or employment, we estimate the following equations, ignoring the issues of nonlinearities:

\[
\text{Employment}_i = \alpha_0 + \beta_1 \text{Trade} + Z_i Y_0 + U_i \quad \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots
Employment_i = α_0 + β_1Trade + β_2Income level + β_3Trade \ast Income level + Z_1Y_0 + U_i \ldots 3

Inequality_i = α_0 + β_1Trade + β_2Income level + β_3Trade \ast Income level + Z_1Y_0 + U_i \ldots 4

In addition to the equation 1 and 2, we added income level dummy as well as an interaction term between the dummy and trade openness.

However, in the evaluation of the effect of trade openness on inequality, there is potential for reverse causality between the variables of interest – an economy with a more unequal distribution of resources could engage in more trade, rather than trade causing this unequal distribution. To address this endogeneity concern and strengthen the argument of the identification of a causal effect, we use instrumentation and systems GMM.

**Instrumentation**

In order to break the relationship between our independent variable of interest and the error term, we estimate a two-stage least squares (2SLS) regression, which uses an instrument which should be correlated with the endogenous variables but orthogonal to any other omitted characteristics. A successful instrumental variables (IV) approach would correct not only for the simultaneous and omitted variable biases but also for differential measurement errors in the two endogenous variables as long as the measurement errors are in classical form (Wooldridge 2015), which would allow us to estimate the parameters consistently.

We use the lagged values the trade openness variable as the instrument. Using the lagged value of the endogenous variable is one of the most common methods to solve endogeneity problems, since the lagged values are less likely to be influenced by current shocks. In this case, it is indeed hard to argue that current levels of inequality could affect the level of trade openness 3 years back. In other words, we can assume that cov(Trade_{t-0}, U_t) ≠ 0 but cov(Trade_{t-3}, U_t) = 0. When interacting our trade openness variable with the income level dummies, we also interact our instrument with the income level dummy. We thus have two instruments in the IV regressions when we have differentiated the effects by income level - the instrument for trade is the lagged value of trade openness, and the instrument for the trade openness and income level dummy interaction term is an interaction term between the lagged value of trade openness and the income level dummy.
**Statistical Tests for Instrument Validity**

For an instrument to be valid, it needs to fulfil two conditions. First, the IV must be relevant, meaning that it must be correlated to the independent variable of interest. We run the first-stage regression, estimating the effect of our instrument on the exogenous independent variable, including all exogenous controls, and find a significant relationship (Appendix C). Since we only use one instrument, we cannot test for over-identifying restrictions and confirm the satisfaction of the second condition, the exclusion restriction - that the IV is exogenous to the population regression function of interest. However, as explained above, both drawing on the literature and on theory, we argue that the lagged value of inequality should be exogenous to trade openness. Finally, our instruments overcome the Stock and Yogo (2005) test for weak instruments, where a strong instrument is defined as having an $f$-statistic for joint significance above 10.

**Systems GMM**

We also use Systems GMM estimation, a linear dynamic panel data model which includes lags of the dependent variable as covariates and allows for the treatment of issues of measurement error and omitted variables biases, while taking into account the reverse causality problem (Blundell and Bond 1998; Arellano and Bover 1995). Unlike the earlier methods, the Systems GMM panel estimator exploits the time-series variation in the data, allows for the inclusion of lagged dependent variables as regressors, accounts for unobserved member-specific effects, and controls for endogeneity of all the explanatory variables.

**RESULTS**

The scatter plot between trade openness and Gini coefficient shows a positive, albeit not statistically very significant, correlation, (see Figure 1). Similar to recent findings published by the International Monetary Fund (2015), our panel fixed effects regression does not yield any significant results indicating an effect of trade openness on the net Gini coefficient, a finding which is robust across our three estimating models (Table 1). Yet, in contrast to the IMF study, without the inclusion of the income levels dummy, we find that trade openness has a positive impact on the Gini markets coefficient. This result reaches the 1% significance level when we use instrumentation and Systems GMM to address potential endogeneity. These findings thus seem to indicate that over all 21 APEC economies, trade openness increases income inequality before taxes and transfers.
Our fixed effect regressions on employment (Table 3) show that increasing the volume of imports and exports as a ratio of GDP catalyses changes in the skills distribution of employment. Trade openness has no effect on the employment share of low skilled labour, including low skilled male labour. However, it does have a positive impact, at a 10% significance level, on the employment of female low skilled labour, which confirms findings of Jenkins (2004a). We find a significant and positive effect (5% level) of trade openness on high skilled labour, which also seems to affect both men and women to a similar extent. Finally, we find a negative effect, significant at the 1% level, of trade openness on the employment of medium skilled labour. According to our model, a 100% increase in trade openness approximately decreases medium skilled employment by 9.3%. This negative effect is larger for female medium skilled labour (a 100% point trade openness increase decreases their employment by 10.9%) than for male medium skilled labour (a 100% increase in trade openness increase decreases their employment by 8.3%), also significant at a 1% confidence level. These findings on the impact of trade on the employment landscape in APEC economies are consistent with those on inequality, as the gains in employment accrue to the share of employment with the highest levels of skills, while decreasing the share of employment held by workers with medium skills, as well as having almost no effect on low skilled labour.

However, we also find that trade affects economies differently according to their income level - notably, the high income economies see higher effects of trade on inequality than non-high income economies (Table 2). This effect was only significant when distinguishing
economies below or above the upper middle income upper threshold ($12,475 GNI per capita), and was not significant for the lower middle income threshold ($4,036 GNI per capita), so we do not report the latter results. We find a positive and significant effect of trade openness on the coefficient of the interaction term between the high income dummy and trade openness both in IV and Systems GMM estimation. Consequently, trade affects high income economies - those with a GNI per capita above the $12,475 upper middle income upper threshold - differently than others. We found that the interaction term between the upper middle income dummy and trade openness had a positive, significant effect on the Gini markets index, consistent across IV and Systems GMM estimation models (See Table 2). However, the coefficient on trade openness alone is not significant. Thus, our findings show that in high income economies, opening to trade has a bigger effect on the Gini markets than in non-high income economies. We find that the trade openness reduces the Gini net for all APEC economies when we deploy the system GMM methods, but this effect does not hold when we use instrumentation.

When distinguishing economies' income levels, we only find effects of trade on the share of employment requiring medium skills, which also appear when differentiating by gender (Table 4). Our results indicate that a 100% increase in trade openness decreases the medium skills share of employment by 21% in countries above the upper middle income level, compared to countries below the upper middle income level, significant at a 1% level. We also find that a 100% increase trade openness reduces the medium skills share of male and female employment by 21% in countries above the upper middle income level compared to those below, at a 5% significance level. However, because we find no significant effects on this interaction variable on the low and high skills share of employment, we do not know to which category of skills the loss in medium skills employment transfers.

Sensitivity Analysis

Overall, the results we report on inequality are consistent in sign and significance across both estimators we use to correct endogeneity concerns - IV and Systems GMM and are thus not sensitive to the specification used. This excludes the significant negative effect of trade openness on the Gini net, which was only found with systems GMM. Of note, 2SLS commonly inflates coefficients, which is why we observe large coefficients on the IV
regression of the interacted variable between trade and the high income dummy on the Gini markets.

Inequality datasets have been well-known for their limitations (Solt 2009). However, to check whether our results were sensitive to the SWIID, we conducted our estimation on other inequality datasets. First, we used net Gini coefficient data from the United Nations University World Institute for Development Economics Research (UNU-WIDER), and intonated values for missing years. Second, we used the Theil statistics for both household income inequality and for industrial pay inequality. This index measures the entropic distance of the population from the egalitarian state of everyone having the same income, where a higher value indicates further distance from complete equality. Data is obtained from the University of Texas Inequality Project EHII and UTIP-UNIDO datasets, respectively, and was also interpolated in the case of missing observations.

Echoing our prior findings without the inclusion of a dummy differentiating income levels, the regressions show that increasing the volume of imports and exports as a ratio of GDP catalyses inequality. We find that trade openness has a significant and positive effect on both the Theil index and the Gini coefficient, when controlling for aforementioned variables (Appendix B).

Following the example of the 2015 IMF inequality report, in order to test for robustness, we include dummies for banking and currency crises. We use data from the IMF’s Systemic Banking Crises Database by Laeven and Valencia (Laeven and Valencia 2012). The results are robust to the addition of these controls, except for the effect on the female low skills employment, where trade becomes significant, albeit only at 10% significance level.

**LIMITATIONS AND OPPORTUNITIES FOR FUTURE RESEARCH**

One significant challenge we faced in the compilation of trade, inequality and employment-related data for the 21 APEC economies was the lack of consistent data. Most notably, there is almost no data available on Brunei Darussalam and Papua New Guinea. Both were thus almost consistently excluded from our analysis.

Another caveat of our study relates to the indicators used to characterize trade as well as inequality. The Gini index has been criticized as over-sensitive to changes in the middle of
the income distribution, and, consequently, as insensitive to changes at the top and bottom (Atkinson 1970; Palma 2011). A new measure of inequality, the Palma ratio, defined as the ratio of the richest 10% of the population’s share of gross national income (GNI), divided by the poorest 40% of the population’s share, has seen increasing scholarly and policy interest. Yet, the unavailability of data beyond OECD members has prevented us from using the Palma ratio as our inequality variable. As its use becomes more widespread, future research aiming to deepen understanding of the link between trade and inequality should include and compare effects on this indicator with effects on Gini coefficients.

Defining trade openness also poses challenges, both theoretical and related to data constraints. The Sachs-Warner trade openness index, for instance, which has often been used in such analyses, is a dummy variable index coded as 0 or 1, varying by economy and year, indicating whether or not an economy is open according to five criteria. We chose not to use this variable both because its coverage ends in 1992 and because one of the criteria it used to classify an economy as non-open was a socialist economic system, which meant that Viet Nam and China were both considered as closed. Instead, we used the ratio of trade on GDP, which looks at an economy’s opening to trade, a continuous variable, rather than assessing whether it is open or not.

Another issue that has been raised as a cause for changes in the employment structure and for increasing inequality is technology. Effectively, at least for the United States, the academic consensus is that most job destruction in the manufacturing sector is due to the ongoing process of automation (Acemoglu et al. 2014; Collard-Wexler and De Loecker 2014; Hicks and Devaraj 2015). Future research should thus consider and control for the effects of technology.

Conclusions

Taken together, these findings show that trade has different effects for different types of economies. Without the distinction between income levels, we find that trade openness increases the Gini markets coefficient (inequality pre-transfers). We also see that opening to trade increases the share of employment accruing to high skills and reduces the share of employment accruing to medium skills. However, the picture changes once controlling for economies’ income level. In high income economies, trade’s more severe reduction of the share of employment accruing to medium skills is consistent with trade’s exacerbating effect on income inequality, pre-taxes and transfers. In higher income
economies, trade openness indeed increases inequality more than in non high income economies. While we do not know if the larger decrease of medium skill employment in high income economies was due to job displacement towards lower income economies, it is a possibility which would be consistent with the Stolper-Samuelson theorem. Our findings correspond with the current political narrative in Western countries, where populism is seen as a result of heightened inequality.

While we did not empirically verify it, these two simultaneous phenomena could be interrelated. A decrease in medium skills employment could lead to a higher level of relative inequality since the people with medium skills are losing their job opportunities while the people with high skills are receiving more opportunities and the opportunities for low skilled people are static. These skill-biased and inequality-enhancing effects of trade seem to be more severe in high income economies, highlighting the fact that trade seems to have different impacts depending at what stage of development an economy is. The next section goes deeper into the relationship between trade openness, employment and inequality for two cases, Viet Nam - a lower middle income economy - and Chile - a high income economy, which will further highlight the different impacts trade has on different types of economies.

**Box 1: Quantitative Analysis – Main Findings**

- We found that trade openness increased inequality, pre-taxes and transfers, across all APEC members. However, when differentiating by income level, we found that this effect was larger in high income economies than in non high income economies;

- Across all APEC economies, an increase in trade openness resulted in an increase in the high-skilled share of employment and a decrease in the medium-skilled share of employment. When differentiating by income level, we found that the reduction in the share of employment accruing to the medium-skilled was larger in high income economies while there was no change for the high and low-skilled.
### Table 1: Regression results on inequality

<table>
<thead>
<tr>
<th></th>
<th>Gini net IV fixed effect</th>
<th>Gini markets IV fixed effect</th>
<th>Gini net GMM</th>
<th>Gini markets GMM</th>
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<td>-0.012</td>
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<td>-0.003</td>
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<td>-0.010</td>
<td>-0.001</td>
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<td>0.001</td>
<td>-0.000</td>
</tr>
<tr>
<td>Inflation rate</td>
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<td>0.000</td>
<td>0.000</td>
<td>-0.000</td>
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<td>0.001</td>
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<td>0.000</td>
<td>0.002*</td>
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<td>-0.001</td>
<td>-0.002</td>
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<td>Lag 2 log of Gini net</td>
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</tr>
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<td>Lag 2 log of Gini market</td>
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Note: Standard errors are clustered at the member level. Dependent variables are in logged form measuring elasticity. * p<0.1; ** p<0.05; *** p<0.01
Table 2: Regression results on inequality differentiated by income

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<th>Gini market (IV)</th>
<th>Gini net (System GMM)</th>
<th>Gini market (System GMM)</th>
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<td>(0.047)</td>
<td>(1.001)</td>
<td>(0.040)</td>
<td>(0.030)</td>
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<td>4.997***</td>
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<td>0.088***</td>
</tr>
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<td>(0.033)</td>
</tr>
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<td>(1.403)</td>
<td>(0.047)</td>
<td>(0.044)</td>
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<td>(0.032)</td>
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<td>(0.000)</td>
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Note: Standard errors are clustered at the member level. Dependent variables are in logged form measuring elasticity. * p<0.1; ** p<0.05; *** p<0.01
<table>
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<th>Employment of medium skilled labour</th>
<th>Employment of low skilled labour</th>
<th>Employment of male high skilled labour</th>
<th>Employment of male medium skilled labour</th>
<th>Employment of male low skilled labour</th>
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<th>Employment of female medium skilled labour</th>
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<td>0.010**</td>
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<td>0.45</td>
<td>0.03</td>
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<tr>
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</tbody>
</table>

Note: Standard errors are clustered at the member level. Dependent variables are in logged form measuring elasticity. * p<0.1; ** p<0.05; *** p<0.01
Table 4: Regression results on employment opportunities differentiated by income

<table>
<thead>
<tr>
<th></th>
<th>High skilled labour</th>
<th>Medium skilled labour</th>
<th>Low skilled labour</th>
<th>Male high skilled labour</th>
<th>Male medium skilled labour</th>
<th>Male low skilled labour</th>
<th>Female high skilled labour</th>
<th>Female medium skilled labour</th>
<th>Female low skilled labour</th>
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<td>Trade open*upper middle income economy</td>
<td>0.174</td>
<td>-0.211***</td>
<td>0.054</td>
<td>0.054</td>
<td>-0.206***</td>
<td>0.075</td>
<td>0.165</td>
<td>-0.212**</td>
<td>-0.023</td>
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<td></td>
<td>(0.126)</td>
<td>(0.060)</td>
<td>(0.102)</td>
<td>(0.102)</td>
<td>(0.063)</td>
<td>(0.122)</td>
<td>(0.154)</td>
<td>(0.076)</td>
<td>(0.119)</td>
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<tr>
<td>Upper middle income economy</td>
<td>-0.068</td>
<td>0.120**</td>
<td>-0.039</td>
<td>-0.039</td>
<td>0.115**</td>
<td>-0.024</td>
<td>-0.038</td>
<td>0.139*</td>
<td>-0.027</td>
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<tr>
<td></td>
<td>(0.104)</td>
<td>(0.046)</td>
<td>(0.100)</td>
<td>(0.100)</td>
<td>(0.048)</td>
<td>(0.112)</td>
<td>(0.143)</td>
<td>(0.058)</td>
<td>(0.100)</td>
</tr>
<tr>
<td>Trade openness</td>
<td>-0.043</td>
<td>0.064</td>
<td>0.020</td>
<td>0.020</td>
<td>0.070</td>
<td>-0.041</td>
<td>-0.008</td>
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<td>(0.100)</td>
<td>(0.100)</td>
<td>(0.048)</td>
<td>(0.112)</td>
<td>(0.143)</td>
<td>(0.058)</td>
<td>(0.100)</td>
</tr>
<tr>
<td>Control of corruption</td>
<td>0.026</td>
<td>0.047*</td>
<td>-0.097</td>
<td>-0.097</td>
<td>0.031</td>
<td>-0.105</td>
<td>0.035</td>
<td>0.073**</td>
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<tr>
<td></td>
<td>(0.079)</td>
<td>(0.023)</td>
<td>(0.087)</td>
<td>(0.087)</td>
<td>(0.024)</td>
<td>(0.096)</td>
<td>(0.071)</td>
<td>(0.028)</td>
<td>(0.094)</td>
</tr>
<tr>
<td>Government effectiveness</td>
<td>-0.011</td>
<td>0.034</td>
<td>0.083</td>
<td>0.083</td>
<td>0.037</td>
<td>0.051</td>
<td>0.005</td>
<td>0.029</td>
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<td></td>
<td>(0.049)</td>
<td>(0.033)</td>
<td>(0.062)</td>
<td>(0.062)</td>
<td>(0.028)</td>
<td>(0.058)</td>
<td>(0.071)</td>
<td>(0.051)</td>
<td>(0.096)</td>
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<tr>
<td>Population growth rate</td>
<td>-0.049</td>
<td>0.010</td>
<td>-0.019</td>
<td>-0.019</td>
<td>0.005</td>
<td>0.017</td>
<td>-0.064</td>
<td>0.016</td>
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<td>(0.045)</td>
<td>(0.013)</td>
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<td>(0.049)</td>
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<td>(0.060)</td>
<td>(0.057)</td>
<td>(0.019)</td>
<td>(0.055)</td>
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<tr>
<td>GDP growth rate</td>
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<td>-0.001</td>
<td>-0.001</td>
<td>0.001**</td>
<td>-0.000</td>
<td>-0.003</td>
<td>0.001</td>
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<td>(0.002)</td>
<td>(0.002)</td>
<td>(0.001)</td>
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<tr>
<td>Inflation rate</td>
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<td>0.001</td>
<td>0.001</td>
<td>0.000</td>
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<tr>
<td>Restrictions</td>
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<td>0.000</td>
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<tr>
<td>Economic globalization</td>
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<td>-0.001</td>
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<td>-0.005</td>
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<td>(0.005)</td>
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<tr>
<td>Overall globalization index</td>
<td>0.011***</td>
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<td>-0.003</td>
<td>-0.003**</td>
<td>-0.001</td>
<td>0.017**</td>
<td>-0.004**</td>
<td>-0.005</td>
<td>-0.005</td>
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<tr>
<td></td>
<td>(0.004)</td>
<td>(0.002)</td>
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<tr>
<td>_cons</td>
<td>2.613***</td>
<td>4.271***</td>
<td>2.690***</td>
<td>2.690***</td>
<td>4.290***</td>
<td>2.513***</td>
<td>2.372**</td>
<td>4.202**</td>
<td>2.904**</td>
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<tr>
<td></td>
<td>(0.175)</td>
<td>(0.081)</td>
<td>(0.156)</td>
<td>(0.156)</td>
<td>(0.074)</td>
<td>(0.186)</td>
<td>(0.238)</td>
<td>(0.118)</td>
<td>(0.260)</td>
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<tr>
<td>R²</td>
<td>0.47</td>
<td>0.57</td>
<td>0.06</td>
<td>0.06</td>
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</tr>
<tr>
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<td>144</td>
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</tbody>
</table>

Note: Standard errors are clustered at the member level. Dependent variables are in logged form measuring elasticity. * p<0.1; ** p<0.05; *** p<0.01
SECTION II – COMPARATIVE CASE STUDY

VIET NAM AND CHILE: TRADE OPENNESS, EMPLOYMENT AND INEQUALITY

In examining the effect of trade openness on employment and inequality, it is challenging, and perhaps misleading, to isolate this single variable’s impact in order to draw conclusions. Economies opening up to international trade will introduce other domestic reforms, both to capitalize on the benefits of international trade and to protect against the increased vulnerabilities that come with international integration. As beneficial as participation in global markets can be for an economy in terms of GDP growth and poverty reduction, opening up to international trade by necessity results in new dynamics that require changes in a range of policies. Trade openness exposes an economy to global capital flows, increases pressure from abroad to enact reforms that improve competitiveness on a global scale, and creates both winners and losers as a result of structural changes. As analysts such as Vo Tri Thanh and Nguyen Anh Duong of the Central Institute for Economic Management (CIEM) have highlighted, it is the very interaction between domestic institutional reform and international economic integration that has allowed trade’s impact to accrue (Thanh and Duong 2009). Therefore, as we examine how trade openness has affected employment, we must necessarily consider its interaction with domestic institutions and policies. In his examination of the labour market impact of globalization, Martin Rama of the World Bank associates exposure to international trade, the influence of new technologies, capital flows across countries, and domestic reforms that increase competitiveness, referring to them collectively as part of a “globalization package” (Rama 2003).

For this reason, we build upon our broad-based quantitative analysis of trade openness and employment in APEC economies with a closer look at two cases: Viet Nam and Chile. We examine elements of the “globalization package” for these two economies in order to better understand successes and failures associated with openness to trade. Our qualitative research began with a field work trip in Hanoi where we interviewed industry experts, economists, academics, government officials, factory workers and members of the informal labour force. Throughout our interviews several factors of interest emerged which were identified as contributing to the mitigation or exacerbation of inequality in Viet Nam. We explore these variables - education, social protection, and governance - below.
Our case study uses a combination of qualitative analysis from fieldwork in Hanoi, quantitative analysis using data from the World Bank, the International Labour Organization, household survey and census data from Viet Nam and Chile, and research to explore what trade openness has meant for jobs and the people who do them in Viet Nam and Chile. We begin with a background on the process of trade openness in each economy followed by an exploration of how employment and inequality changed after economies liberalized trade policy. We then look at three policy variables which we identified as playing a key role in mitigating or exacerbating the impacts of trade openness on employment and inequality: education, social protection, and governance. Finally, we compare employment patterns and measurements of inequality in each economy and how these have affected their respective populations.

**Trade Openness in Viet Nam**

Viet Nam’s decades-long shift from a largely closed, centrally-planned economy to a market-oriented system fully integrated with the global economic order began in the early stages of the Doi Moi reforms launched in 1986. While numerous protectionist policies, particularly non-tariff barriers, remain in place, the Vietnamese economy has significantly opened up to international trade in the last three decades. A combination of trade openness and domestic institutional reform has led to remarkable economic growth, which has in turn helped lift millions of Vietnamese out of poverty in one of the most heralded development success stories of our age. Per capita income rose from $110 in 1991 to $2,111 in 2015 (World Bank 2016; Berliner, Thanh, and McCarty 2015). Poverty declined markedly, with an estimated 58% living below the poverty line in the early 1990’s (as it was defined at that time), and less than 10% live below the poverty line today (Kozel 2014). While many have studied the links between trade openness and economic growth in Viet Nam, this case study explores trade’s impact on employment and inequality and how domestic institutions mitigates or exacerbates these impacts.

When the Doi Moi reforms began, Viet Nam was largely walled off institutionally from international trade, with exports accounting for just 6% of GDP in 1986, and imports at 16%. Thirty years later the picture has significantly changed (See Figures 2 and 3). Exports and
imports now make up more than 86% and 83% of GDP respectively (World Bank 2015b; World Bank 2015b).

As early as 1987, Viet Nam established laws to better facilitate international investment and trade, first with the Law on Foreign Investment followed quickly by the removal of restrictions on many exports. By the early 1990’s, the government had signed free trade agreements with major economic blocks including the European Union and ASEAN. In 1995, Viet Nam applied for WTO membership, initiating a process of reform that would lead to their accession twelve years later. While the 1997 Asian Financial Crisis slowed efforts at international integration, by 2000 Viet Nam had signed a bilateral free trade agreement with the United States.

Figure 2- Viet Nam: Exports/Import Growth
The government’s 2001 trade policy roadmap marked a period of particular expansion for Viet Nam’s engagement with international markets (Thanh 2005). By the mid-2000’s most import quotas had been abandoned as had export restrictions on all but a few items (Glewwe 2004). Meanwhile, the average weighted tariff rate fell from 21.09 in 1994 to 3.43 twenty years later (World Bank 2015c). The 2005 Investment Law led to a significant leap in foreign investment in the economy (Figure 3).
The changes wrought by the *Doi Moi* reforms - both in terms of foreign trade and domestic institutions - significantly changed the employment landscape. In 1986, close to ¾ of the labour force were employed in agriculture, but less than half are today (Figure 5). The manufacturing and service sectors have experienced a corresponding increase, with the share of workers employed in industry and services doubling over the last two decades. The employment shifts mirror structural changes in the economy with manufacturing as a percentage of GDP surpassing agriculture in 2003, rising from 17% of GDP in 1986 to 25% in 2009 while agriculture’s share of output halved in the same period (McCaig and Pavcnik 2013).
To what degree is trade openness responsible for the structural shifts in employment? The simple theory of comparative advantage expects structural change as the economy increasingly specializes as it opens up to international markets. The Stolper-Samuelson model anticipates specialization in the sectors utilizing the economy’s largest factor endowment - labour-intensive production in the case of Viet Nam. Indeed, in an analysis of structural employment shifts in Viet Nam, Rhys Jenkins estimates that manufactured exports grew the most in unskilled labour-intensive products and human capital intensive products as the economy opened up to international trade (Figure 6).
While unskilled, labour-intensive products accounted for just 10% of exports in the early 1980’s, they made up 58% of manufactured exports by the late 1990’s. At the same time, human capital intensive products increased from 1.1% to 12.1%, while resource intensive agricultural products declined dramatically from 84% of exports before liberalization to just 21% in 1998 (Jenkins 2004a).

Table 5: Structure of Manufactured Exports 1981-1998 (Jenkins 2004)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural resource intensive</td>
<td>83.9</td>
<td>80.6</td>
<td>38.6</td>
<td>21.0</td>
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<tr>
<td>Mineral resource intensive</td>
<td>2.4</td>
<td>1.2</td>
<td>4.3</td>
<td>2.1</td>
</tr>
<tr>
<td>Unskilled labour intensive</td>
<td>10.2</td>
<td>14.2</td>
<td>49.7</td>
<td>58.7</td>
</tr>
<tr>
<td>Technology intensive</td>
<td>2.4</td>
<td>1.5</td>
<td>1.9</td>
<td>5.6</td>
</tr>
<tr>
<td>Human capital intensive</td>
<td>1.1</td>
<td>2.5</td>
<td>5.6</td>
<td>12.7</td>
</tr>
</tbody>
</table>

Source: Own elaboration from International Economic Database, ANU.
This finding echoes the work of Nina Pavcnik and Eric Edmonds who examine how changes in the price of rice resulting from trade liberalization leads to a pull factor toward expanding markets, shifting workers from household employment to wage work. They find that in areas where trade liberalization has had the greatest impact on rice prices, workers are more likely to decrease household work, particularly farming, and increase wage work (Edmonds and Pavcnik 2006). Brian McCaig and Nina Pavcnik later found that following the Bilateral Trade Agreement signed with the US in 2000 had an impact on labour allocation. The agreement resulted in a significant increase in merchandise exports to US markets, arising from $1.02 billion in 2001 to $5.02 billion in just 3 years (Thanh and Duong 2011). McCaig and Pavcnik observe that workers were more likely to shift away from household businesses toward wage work in industries in which tariffs decreased the most (McCaig and Pavcnik 2014).

Despite the fact that labour-intensive manufacturing is considered by Jenkins and others as “low-skilled” labour, there is evidence that structural shifts resulting from trade are still skill-biased in Viet Nam. Using the same ILO skill categories we used in our quantitative employment regressions, we see that middle-skill labour has actually increased significantly in Viet Nam, contradicting our broader finding for APEC economies (see Figure 7).
Opportunities for mid-skill level workers as their share of overall employment doubled from 25% to close to 50%. The share of employment for the highest skilled workers also increased by 5% while the share of employment occupied by the lowest skilled workers fell by a remarkable 30% between 1992 and 2013. This finding recalls research conducted by Robert Feenstra and Gordon Hanson in Mexico where they found that the outsourcing of low-skilled labour from the United States to Mexico increased the demand for skilled labour in both countries. While the work may be “low-skilled” in the United States, from Mexico’s perspective, the labour required a higher skill set than was previously required (Feenstra and Hanson 1997). The resulting offshoring model developed by Feenstra and Hanson predicts that this kind of trade increases income inequality not just in the advanced economies, but in the labour intensive economies as well (Harrison, McLaren, and McMillan 2011).

The same could be true in Viet Nam. The share of mid-skill level workers employed in agriculture declined by 10% between 2004 and 2012 as their share of employment in industry, services, construction and trade increased (see Table 6). These figures cohere with the overarching narrative of employment opportunity in the wake of the Doi Moi reforms: the opening up of Viet Nam’s economy to markets and the corresponding “globalization package” correlates with an increase in human capital development as workers have shifted out of unskilled agrarian labour toward semi-skilled occupations. Even if the skills actually demanded by the trade-related work are not particularly high, those with more education are obtaining the better paying jobs. Indeed, in our field research we spoke with tertiary school graduates working on the assembly line of a plastic bag factory. We explore issues of over-skilled workers and underemployment in the education section below.
Table 6: Employment structure for workers who have completed lower secondary

<table>
<thead>
<tr>
<th>Year</th>
<th>Chung/Total</th>
<th>Nông, làm nghề, thủy sản/Fish</th>
<th>Lâm nghiệp/Forestry</th>
<th>Công nghiệp/Industry</th>
<th>Xây dựng/Construction</th>
<th>Thương nghiệp/Trade</th>
<th>Dịch vụ/Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>100.0</td>
<td>56.0</td>
<td>0.3</td>
<td>2.0</td>
<td>15.0</td>
<td>6.3</td>
<td>10.3</td>
</tr>
<tr>
<td>2006</td>
<td>100.0</td>
<td>53.4</td>
<td>0.4</td>
<td>2.3</td>
<td>15.3</td>
<td>6.9</td>
<td>11.1</td>
</tr>
<tr>
<td>2008</td>
<td>100.0</td>
<td>52.5</td>
<td>0.6</td>
<td>2.1</td>
<td>15.9</td>
<td>7.0</td>
<td>10.9</td>
</tr>
<tr>
<td>2010</td>
<td>100.0</td>
<td>44.8</td>
<td>0.6</td>
<td>1.8</td>
<td>20.9</td>
<td>8.9</td>
<td>12.2</td>
</tr>
<tr>
<td>2012</td>
<td>100.0</td>
<td>46.0</td>
<td>0.7</td>
<td>2.2</td>
<td>18.6</td>
<td>9.4</td>
<td>12.3</td>
</tr>
</tbody>
</table>


While it is true that the manufacturing sector absorbed many of the workers shifting out of agriculture, increasing urbanization expanded the informal service sector as well. In fact, while the share of manufacturing employment increased by 8% between 1994 and 2015, the share of service jobs in the wholesale and retail trade sector combined with hotels and restaurants grew by 10%. (General Statistics Office of Viet Nam 2015) As Rhys Jenkins (2004b) observes, many of these jobs were in the low-paid and informal sectors of the economy (see Box 2 below).

**TRADE OPENNESS AND LOW INCOME WORKERS**

**Box 2: Low Income and Informal Labour in Viet Nam**

Interviews with low-income workers in Hanoi were conducted by our research team in November 2016. Their stories provide context for the effects of Viet Nam’s trade openness to the people on the ground, those belonging to the urban poor and marginalized communities that are often at the disadvantaged end of development. These are low-wage earners and workers in the informal sector--street vendors, drivers, shoe shiners, and even sidewalk entertainers. They discussed their struggles, and reflected on how Viet Nam’s economic growth has affected vulnerable groups--some for the better, some for the worse.

**Migration to the City:** The majority of our interviews consisted of women and young men who chose to pursue jobs outside agricultural work in their hometowns in pursuit of other available options in the city. The jobs they were able to pursue included being vendors of fresh produce, food, and other products, particularly for women; or being motorcycle drivers, shoe cleaners, and manual labourers for men. In one case, a young man wanted to study electrical engineering to pursue opportunities in his hometown and be closer to his family, but he could earn far more shining shoes in the city, and could not yet afford the high training fees to become an electrician so he left his wife and child at home, and spent several weeks a month earning 3-4 million VND informally. In the case of an older woman, she sold packets of tissues and other small household products to pay for her high medical bills following a prolonged illness. Others preferred the flexibility of the informal work to the fixed hours of a factory as they had children to care for as well.
“She is working to earn the money for her husband, who is disabled... She has to travel here around noon, and work here until now, 8 pm, or a little later, and then take the bus, cycle a bit to get to her house to take care of her children and her husband everyday. That is her routine.”

• Luyen, street food vendor (as told by a translator)

Some travel long distances to the city daily to work for the informal sector in Hanoi, while others periodically go back and forth to the city in order earn income from both the urban area and their hometowns in the countryside.

“She has been doing this job for 13 years, but she will do agricultural work, like growing rice, in her hometown, twice a year. Whenever she’s busy with the farm work, she goes back to her hometown to do it, and then when she has free time, she comes to the city to sell cakes.”

• Thao, 53, pastry vendor (as told by a translator)

“Change in Landscape: As Viet Nam developed, new industries and job opportunities have also emerged to adapt to the changing times. Unfortunately for some, this means phasing out their sources of income, forcing them to look for other options. An interview with a local driver showed how the improvement of transportation in Viet Nam affected his means of living:

“He has been here since 1993. He comes from Hung Yen. Since he is here, he has been doing the cyclo driving thing. In the past, when they were not many cars or motorbikes, cyclos were everywhere. People would use them even for short and long distances, so the business was good. Now, the people have motorbikes and cars. Now, he does it mostly for the tourists, for the foreigners. Since the cyclo thing changed into a tourist thing, the income is lower.”

• Son, 50, cyclo driver (as told by a translator)
Similarly, even small shop owners with relatively higher income than street vendors and informal workers have been affected by the influx of businesses brought about by urban development.

“She has been here for 56 years, and has open the shop for 27 years. In the past, the business was really good. Recently, the economy has been booming so the shop is going down. She is complaining about the competition in business and stuff. In the past, the business was going quite easy, they did not have to think much... She feels stressed and frustrated about the competition.”

- Hang, 56, small shop owner (as told by a translator)

**Opportunities for the Youth:** Another sector of society that have benefited from Viet Nam’s trade openness are the youth. Available jobs in high growth industries require skills and physical conditions often suitable for younger people in factories. Ernest Ong of AAB, makers of plastic bags for import, justified their need for younger workers within the age range of 18-25 years old. He explained that people of that age are “very fast learners” and adjust quite easily to the environment and the rigors of the job. Compared to older people who are likely more tied down by family responsibilities, they are typically less attached to other commitments and are more willing to relocate and to learn new skills. This enables the poor and uneducated youth to be trained in a factory and to work for these industries.

However, the opportunities between factory jobs and other jobs in different sectors appear uneven. The industrial growth in Viet Nam has made many factory jobs available for the youth, yet there seems to be a lack of opportunities for young people with higher qualifications in other fields. This situation has forced some job-seekers to abandon their fields and get employment as salaried factory workers, even if it means underemployment.

**Exclusion of Some Youth:** The growth of the economy in Viet Nam provided some kinds of jobs for those with education, training, and ample skills. However, trade openness has not been advantageous to all kinds of youth. Despite these opportunities being open to younger people from the rural areas and even to those without much formal education, others are still excluded because of the lack of other job options for those with other skills, qualifications, and/or preferences.

“She has been working for two years... She is in a college to study about accountants and finance... She find the job here quite suitable, and it is not easy to find job in accountancy. Right after graduation, she started working in the factories... She is happy with what she is having here. She has gotten a raise for continual work, for experience. She is single, living with her parents. So, for now, the salary sustains her life.”

- (name redacted), 25, factory worker (as told by a translator)
Registration Restrictions: Viet Nam’s Household Registration System, which only grants permanent working permits for those above the age of 18 in their places of residence, have also excluded some people from employment, and have limited their access to public services and benefits.

“If he wants to have a job, he has to have a permission from the local government… but he is under 18, so the local government will not give him that approval. So, basically, he cannot work, except doing this kind of job and work for himself… He sustains himself totally on his own.”

- Thang, 17, shoe shiner (as told by a translator)

These interviews unpack common themes that were echoed all the interviewed low wage workers: While trade openness have had many benefits to the economy, some groups continue to be vulnerable to its ill-effects, and many are still left out of the growth equation.

Who is getting left behind in Viet Nam? By international comparison, Viet Nam’s growth has been relatively equitable, without the starker disparities seen elsewhere, but that is changing. While Viet Nam’s Gini coefficient actually fell in the 1990’s, it started slowly rising again after 1998 (see Figure 8). There are stark geographical disparities in earning potential. The north west provinces which are farther from urban centres and suffer from poor infrastructure and services, are also home to larger ethnic minority populations, 52% of whom were living below the poverty line in 2010 (Berliner, Thanh, and McCarty 2015). The rural/urban divide in earnings potential also continues to increase as the incomes for the lowest quintile in rural areas is half that of the poorest workers in cities (General Statistics Office of Viet Nam 2014) Even more striking, however, are the increasing disparities between household earnings within rural areas which had remained relatively equitable throughout the economic transition. While much recent attention has been paid to increasing inequality in cities as rising returns for the wealthiest earners are more frequently visible, the highest earners in rural areas now make eight times more than the lowest income quintile, while the difference is 7 times in cities. For the first time since the outset of reforms, inequality is starker in rural areas (see Figure 9).
Women have also been affected by trade openness. Along with rapid economic growth, the percentage of women in the labour force has improved since the introduction of reforms in Viet Nam. Although we cannot draw a causal link, their labour force participation rate rose significantly following the entry to the World Trade Organization in 2007 (See Figure 10).
Rhys Jenkins in his study on employment effects finds that unskilled women benefit most from trade openness in Viet Nam as they are twice as likely to be employed in export industries as men. This hypothesis is also supported by our own quantitative analysis in which we find that low-skilled women have benefitted from trade openness. Our interview with Pham Chi Lan, former Secretary General and Vice President of the Chamber of Commerce and Industry in Viet Nam, also supports this finding. According to her, prior to trade reforms, women had less access to labour markets. At present, employers are increasingly open to hiring women, and, in many cases, even prefer to recruit women more than men because of the perception of women as “more hardworking, more engaging” and “have very good productivity.” This trend of hiring more women is especially apparent in industries related to garments, footwear, and food processing, as well as in the field of tourism—industries that have grown significantly due to the demands of trade openness (Pham 2016).

Despite these opportunities, women in Viet Nam continue to take lower wages compared to their male counterparts. Trade has opened opportunities for female employment in various industries, yet the Viet Nam General Confederation of Labour (VGCL) survey on workers’
salaries in 2012 showed the 70-80% difference between female workers’ salaries versus males (International Labour Organization 2013).

While gender pay gap is a worldwide problem, there has been a decline in the gap in most nations, according to the ILO Global Wage Report 2012-13. It is a different case in Viet Nam as current estimates show that Viet Nam is still among a few economies in the world where pay gap between women and men has continuously widened, when comparing the gap from 2008-2011 and the period between 1999-2007. The Labour Force Survey Report in 2012 also revealed that working females in Viet Nam have lower monthly incomes than working males across all economic sectors--state, non-state, and foreign-invested—and across major industries that have a significant number of female employees, such as healthcare, social work, and sales (International Labour Organization 2013).

Clearly, as Viet Nam’s economy has opened up to global markets, many have benefitted from rising wages and increased opportunities. Yet as with any transition, some have benefitted more—much more—than others. As the World Bank highlights in their 2012 analysis of poverty and inequality in Viet Nam, “growth has interacted with existing inequalities in opportunities - inequalities in education, patterns of social exclusion between ethnic minorities and the majority, access to good jobs, geographic disparities - to increase income inequality and income gaps between rich and poor households” (Kozel 2014).

This study examines the interaction between trade openness, these existing inequalities of opportunity, and policies designed to mitigate disparities to determine where Viet Nam has succeeded and what policies they should consider in the future.

I. EDUCATION IN VIET NAM

Education has a long and important role in the history of Viet Nam’s development as a nation. Upon gaining independence in 1945, Ho Chi Minh was determined to fight not only invaders, but poverty and illiteracy as well (Q. K. Nguyen and Nguyen 2008). His determination was the beginning of a very successful policy initiative to eradicate illiteracy and reinforce the education system in Viet Nam. His success in doing so is apparent when examining literacy
rates. In 2016, the adult literacy rate for those aged 15 and above was 94.5% (World Bank 2015a).

These investments to the education system have equipped the Vietnamese workforce with greater flexibility that has assisted in easing the shift from low skilled employment in sectors like agriculture for example, to a greater share of middle skill employment, particularly for women in the manufacturing industry (Jenkins, 1998). The ability to increase the flexibility of the large workforce has been one of the factors that has made Viet Nam attractive to international trading partners. While being endowed with a large labour force has been a critical factor to the success of trade in the economy, the fact that it is a large and educated labour force has enabled Viet Nam to accommodate greater demand.

As education has been a central pillar of Vietnamese policy, it has also become important within the society as a measure of achievement. Achieving higher education not only increases wages and quality of life, it is very prestigious, and therefore very competitive (Tran 2013a). The social pressures surrounding education have on occasion contributed to rent seeking behaviour by those who have the authority to facilitate access to higher education and employment alike.

The efforts by the government to increase access to education have been remarkable, but there are still significant challenges that present themselves with respect to the system. During a series of interviews with industry experts and academics in Viet Nam, three main concerns were consistently articulated in regards to the changing effects of education on employment. These were the existence of a skills mismatch between graduate abilities and industry needs, the quality and perception surrounding vocational training, and the underemployment of graduates from institutes of higher learning. Each of these concerns represents a different dimension of the challenge that exists in producing a workforce that is well suited for, and content with, the market demand - which is influenced by trade openness.

**Skills Mismatch**

According to several experts, one of the most significant complaints of industries in Viet Nam is that graduates do not possess the relevant skills upon completion of their schooling to
perform in the workplace (Tran 2013b), which is changing more than ever as a result of exposure to the world economy, as highlighted previously. This mismatch, as described by interviewees and supported by the literature, is described as twofold: graduates coming from academic institutions lack practical knowledge and graduates of vocational institutes have inadequate training to meet industry needs in the workplace. The underlying reasons for the mismatch between industry needs and university graduates is related to several factors. First, the curricula in Vietnamese universities are centrally controlled by the government, unless an institution has complete fiscal autonomy and the accompanying approval from the government to adjust the curriculum. A professor at the Institute of Public Policy and Management of the National Economics University is currently piloting this idea.

“Here we have the best human resources, top in Viet Nam, but when are trained outside, we go back here and we feel tied by the government. So we have to open up the curriculum. We still have courses on Marxism, and I have been telling them that it should not be taught as a required course.” (Professor, National Economics University)

However the criticisms of the curriculum are not only that it is difficult to change, but also that it has an intensive focus on theory based learning without the necessary complementary practical skills (Oliver 2002). This is in part due to the second factor, which concerns both the quantity and quality of the teaching staff. Specific criticism are centred around the lack of computer skills, and knowledge of English (Trung and Swierczek 2009; Oliver 2002). One must note that both of these skills are very relevant in creating a workforce that is an attractive player in international trade (Wright 2002; Nguyen 2011; Tran 2013).

Finally, the needs of industry have not been incorporated into the curriculum. These include specific skills to individual industries, particularly those desired by foreign companies, as well as a range of soft skills required in most workplaces (Trung and Swierczek 2009). Though we must add here that the problem has been recognized, there is still a way to go in order to balance the independence of educational institutes with the needs of industry in an era of growing economic integration.

**Vocational Training**

Vocational training has gathered momentum in recent years with the addition to private and foreign higher education institutions. It has taken some time for the system to become
accessible, but there are a variety of vocational schools now available in Viet Nam. However, vocational training institutes often struggle to attract talent for a few reasons. During our interviews we discovered that the quality of some of the vocational institutes is questionable, and these are often funded by the students with subsidies provided directly to the colleges by the government. The vocational institutes with good reputations, particularly those that are foreign, can be nearly 4 times as expensive as local options. Embedded in this hierarchical fee structure is the question of accessibility.

Otherwise, vocational institutes, despite being more practical in nature, also must contend with the gap between the skills they provide and the needs of industry. However, there are new projects where industry is now involved in designing the curriculum as well as providing practical internships. One such program, based on the German dual vocational training model is currently being piloted in Hanoi and outside Ho Chi Minh City. Lisa-Marie Kreibich, an advisor with the German International Development Agency, GIZ, in Viet Nam, described how the new relationship functions:

“.... the enterprises, they need to tell the colleges what skills they need and not only complain that the graduates do not match their requirements... they need to be involved in creating and designing the appropriate training offers...And then our approach is also involved in the delivery of the training, so instead of just offering a short internship ... they are actually involved in the working process. And we want to provide longer practical training spaces in the companies ...and then the company should also be involved in the assessment, in the testing of skills. ...So they can see ok, the graduates now really have the skills, and then there is also a greater acceptance for the certificates and for the actual degrees they obtain...” (Lisa-Marie Kreibich, GIZ)

However, as she and other interviewees note later on, the culture in Viet Nam is such that enrolment in a vocational school is considered less prestigious than a university. As such, young students and their parents will often choose to pursue a general academic degree, even with the full awareness that the possibility of unemployment is high:

“By now you now the image of the vocational training is quite low, everyone wants to go to university, even though afterwards they don’t find a job...And that’s a big problem, the awareness and the image.” (Lisa-Marie Kreibich, GIZ)
The remaining major concern with respect to vocational training schools is the division of oversight from the Ministry of Labour (MOLISA) and the Ministry of Education and Training (MOET). There can be confusion between guidelines and regulations as the operations are not completely centralized under the division of one ministry. This is slowly changing, as well as the legislation which determines the amount of subsidies received by the colleges. MOLISA is currently shifting its strategy to subsidize colleges that meet a set of performance indicators, instead of funding all colleges indiscriminately.

These are all positive changes that could address the skills mismatch and begin to reverse the impression that vocational certificates are less desirable than university degrees. This could reduce the inefficiencies that are produced by underemployment and ensure that students are prepared for the jobs brought on by globalization.

**Underemployment**

The final major concern is that of underemployment, both with respect to amount of time worked and in terms of over-qualifications. Underemployment is particularly serious in the rural areas of Viet Nam, where there is a limited availability of land and jobs outside of farming (T. D. Nguyen and Ezaki 2007).

In urban areas, underemployment takes on a different form. When university graduates cannot immediately find jobs after graduation for example, they take up employment that is below their skill level. Upon a visit to the AAB plastics factory, located in Hung Yen province outside of Hanoi, we discovered that one of the production line workers was an accountant. Speaking through an interpreter, the 25-year-old described her situation:

“She found the job here quite suitable and it is not easy to find job in accountancy. Right after graduation she started working in the factories. And it has been two years until now. She is happy with what she is having here. She has gotten a raise for continual work, for experience. She is single, living with her parents. So for now the salary sustains her life. In the future she thinks it is going to be okay, because the longer she works, the salary is getting higher.” (Anonymous, 25 year old factory worker)
The concerns surrounding the education system and its impact on employment are closely intertwined. If addressed, they have the potential to meet the urgent need for skilled labour in Viet Nam in order to push development further. If the curricula begin to reform to include the needs of industry, the issues surrounding over-qualification and skills mismatch will gradually decrease. Furthermore, as the quality of vocational colleges also improves and graduates are able to secure well paid jobs, the image of training may improve.

In summary, education and skills training are the cornerstones in making the workforce flexible to the demands of domestic and international industry in Viet Nam. The positive side of this story is that all the issues highlighted through our research have been recognized by the government. The challenges remain in the implementation of strategies that will address these problems and allow Viet Nam’s development to continue. In the future, trade opportunities will be enhanced by the up-skilling of the workforce, particularly in the areas of language acquisition computer skills, and by providing internships that equip graduates with practical knowledge of the workplace and exposure to soft skills in communication (see Section III – Policy Recommendations).

**II. Social Protections**

Even though we do not find that trade openness necessarily increases inequality in low income economies, nevertheless, opening an economy to trade will benefit some and not others. How governments respond to the “losers” who emerge in the wake of trade openness can help mitigate the consequences of job loss and vulnerability. Social protection includes policies that address risk (social insurance), mitigate poverty and inequality (social assistance) and facilitate economic opportunity for the disadvantaged (labour market policies).

As Viet Nam’s economy has opened up to trade, certain populations have been particularly affected which has increased the need for an expanded social protection strategy. On the one hand, the urban informal sector has expanded which has created challenges for government service delivery. The movement of labour from rural to urban areas to take advantage of both industrial and service opportunities as a result of increased manufacturing has opened up these populations to new vulnerabilities. The *Ho Khau*
registration system contributes to this vulnerability as migrants cannot access government services as easily if they are not permanently registered in the city. While Viet Nam’s registration system is more flexible than the registration system in China, and migrants are able to obtain temporary registration relatively easily, migrants continue to face challenges accessing the same social services as permanent registrants. (Linh Hoang Vu and Gabriel Demombynes 2016) At the same time, many rural populations are increasingly removed from shifting opportunities, limiting income growth. Trade openness has also heightened employment volatility with increased exposure to international markets, resulting in new risks that need to be addressed by the government. Finally, the increase in private sector businesses and the reduction in state owned enterprise employment has meant that the structure of social protection in Viet Nam needs to change. All of these factors point to the need to re-think and restructure the social protection strategy. Policy makers have a strategy in place that addresses some of these needs, but the programs as they stand are not yet sufficient for effectively mitigating vulnerability and addressing increasing inequality.

As policy makers in Viet Nam have made equitable growth a priority since the inception of the *Doi Moi* reforms, the development of social protection policies have taken on increasing importance in the course of international integration. Social protection policies, however, are not yet well developed, and as Gianh Thang Long of Viet Nam’s National Economics University observes, they suffer from “a number of drawbacks including a lack of coverage, insufficient funding sources, and inefficient institutions” (Long 2010). Nevertheless, in its most recent Social Protection Strategy 2011-2020, the government attempts to strengthen protection, increase coverage and establish a more sustainable funding framework, recognizing the growing needs of the population particularly in the wake of the global financial crisis. The strategy includes a policy goal of eventually providing a guaranteed minimum income for its population. This would mark a significant expansion of the programs, because currently coverage is low by global comparison, with just 20% of the population covered by social insurance, and 1.73% covered by social assistance (MOLISA 2010). An assessment by the World Bank in 2010 found that such an expansion will require considerable adjustment to implementing institutions (Giannozzi, Nguyen, and others 2010).
Prior to 1995, the social insurance system only covered government workers and was entirely funded from the state budget. In response to the Doi Moi reforms, the government established Vietnamese Social Security (VSS), a pay-as-you-go system which was later amended in 2007 and became mandatory for the public and private sectors. Currently, social insurance includes old age pensions, sickness, maternity, survivorship, and occupational disease and disability coverage. Unemployment insurance was introduced in 2009. Despite the fact that the system is mandatory, both participation and compliance remain low, with the majority of insurance coverage applying to public employees. The vast majority of workers in Viet Nam are employed in the informal sector - 63% of the labour force in 2013 - so in 2009 the government introduced a voluntary insurance scheme, but take-up has proven “negligible” (Long 2010). As it stands just 9% of Viet Nam’s elderly have pensions (MOLISA 2010). Due to poor coverage and targeting, half of social insurance funds go to the top two income quintiles of the population while just 2% go to the lowest quintile.

Social assistance programs in Viet Nam which aim to provide relief for the poor and vulnerable were significantly amplified in 2007 with the adoption of Decree 67 and later Decree 13 in 2010 (World Bank 2010). Now consisting of cash transfers for elderly above the age of 85 without a pension, the mentally and physically disabled, orphans and poor single parents, the program covers about 1 million people, or 1.2% of the population. Other social assistance programs include an anti-poverty reduction program which provides a range of health, education and credit supports for poor families, and a regional anti-poverty program which provides extra assistance for poor districts and communes in an effort to compensate for geographic inequalities. There are additional assistance programs specifically targeted for ethnic minorities in rural minorities. This range of programs targets populations which, as mentioned earlier, have been excluded from the growth created by the economy’s opening up. Despite this, both the coverage and adequacy of benefits is considered insufficient, with average cash transfer benefits ranging between 180,000 and 540,000 VND per month (World Bank 2010) or $8 to $24 USD. While the World Bank assesses the targeting of social assistance programs to be adequate, with 48% of funds channelled to the bottom quintile of the income spectrum, the Ministry of Labour, Invalids and Social Affairs acknowledges the exclusion of key populations from adequate assistance including the very
poorest, migrants and ethnic minorities in rural areas. The new 2011-2020 Social Protection Strategy aims to increase coverage to 2-3% of the population (MOLISA 2010).

**Land as social insurance**

Although Viet Nam’s social protections are thus far relatively weak, inequality has not in fact been a substantial problem for the government until recently. According to several experts interviewed in Hanoi, this resilience can partially be attributed to the land distribution system enacted in the early reform era as it serves as an informal variation on social insurance. Land ownership remains prohibited in Viet Nam, but when the government de-collectivized its farms with the Land Law of 1988, households were granted rights to use individual plots for a fixed number of years, usually 10-15 (Ravallion and Van de Walle 2008). The 1993 Land Law expanded property rights, granting households the right to transfer and sell their land-use rights, as well as choose what crops they wanted to grow. Some central control over crop choice remains in the name of food security, particularly in the rice-growing regions of the Red River and Mekong Deltas (Markussen, Tarp, and Van den Broeck 2011). De-collectivization and the opening up of land markets did improve productivity significantly, but the allocation system continues to impede certain efficiencies and stymie commercial farming (Markussen, Tarp, and Van den Broeck 2011). For instance because the distribution process prioritized equity, this resulted in small dispersed plots in many places, which has made it hard for farmers to collaborate or expand their farms and has contributed to underemployment. (Nguyen 2016)

Further privatization of land holdings could potentially solve the impediments to agricultural productivity, however, the land allocation policy significantly buffered Viet Nam during the 2008 Global Financial Crisis. As Viet Nam’s exposure to global markets resulted in severe employment volatility during the crisis, land allocations prevented mass unemployment and food scarcity. Export demand dried up during the crisis and the manufacturing sector contracted dramatically. Manufactured value added products as a percentage of GDP dropped by 28% between 2009 and 2014 (Mishra and Tuan Dinh 2012). As workers retreated to their land holdings to wait out the crisis, the state averted more serious repercussions. Despite massive underemployment, the laid off labourers were still able to feed their families. Although prior to the crisis, the government had been considering
agricultural and land policy reform, the experience during the crisis understandably engendered caution and scepticism among policy makers, and according to Nguyen Anh Duong of the CIEM, has led many to reconsider the government’s future direction.

During the global financial crisis, we did not have a big problem with the loss of employment, because people could go back to agriculture. Employment was not an issue. Agriculture serves as a buffer during times of volatility. When we talk about after the crisis, what is the intention toward the agriculture sector: Are we going to continue the turn away from agriculture? During the crisis, we recognized the importance of agriculture. But after that we never know if we are going to have another crisis. So we need some sort of buffer, some sort of reserve during hard times. I think had it been the case that we did not have that system, we would definitely be hit by the global financial crisis. During that time the difference of capacity and access to resources would otherwise create significant inequality. And that is the advantage for Viet Nam. In keeping social stability in bad times. But that is also constrained in good times, because you are not working at full efficiency. -Interview with Nguyen Anh Duong, December 1, 2016

As international trade opportunities expand in the agricultural sector, Viet Nam will need to reconsider its land distribution policies to improve efficiency, but given the weak development of social protections as they are, doing so too quickly would threaten vulnerable populations in times of economic crisis. Expanding social protections in Viet Nam would provide an alternative stabilizing cushion, and enable reforms in the agricultural sector. This would help the economy better capitalize on gains from trade, as well as help those who have not seen the benefits of these gains. The challenge of course is the cost of robust social protection, so Viet Nam’s particular land distribution system serves an important role for now.

III. Governance

It is often argued that integration to the global economy stymies corruption, with the flexible nature of the market allowing investors and financiers to move their activities elsewhere if they are unsatisfied with the conduct of business in a given economy. The countering view links trade and corruption through the theory of rent-seeking, which is defined as the extraction of value through unproductive activity (Krueger 1974). In an economy with trade barriers and tariffs, the discretionary power given to bureaucrats as a result of government
restrictions on certain economic activities generates opportunities for rents through bribery, smuggling, and black markets. By increasing the number of goods and services imported, trade openness could increase consumers’ who desire to access such products’ — especially if those are not available domestically — marginal utility. As a result, officials would have an increased marginal utility for seeking bribes, which augments their incentives to pursue such activities (Majeed 2014). Treisman indeed shows empirical evidence that opportunities for corruption are likely to rise in the presence of trade liberalization and further argues that extensive trade liberalization could reduce corruption (Treisman 2000). However, Rodrik (2001) raises an important caveat to this theory: foreign investors often complain about large-scale corruption, while ordinary citizens are mostly affected by petty corruption (Rodrik 2001). Trade could thus entice governments to correct the former but not the latter, with little impact on citizens grappling with day to day bribery.

Scholars have also analyzed the role played by policy-making on the relationship between trade and corruption. Appropriately, Rodrik mentions that the prevailing conventional wisdom suggests that

« successful integration in turn requires both enhanced market access in the advanced industrial countries and a range of institutional reforms at home (ranging from legal and administrative reform to safety nets) to render economic openness viable and growth-promoting» (Rodrik 2001).

Governments at the head of liberalized economies would thus find economic benefits to the adoption of quality institutions and policies countering graft. Majeed indeed finds that when combined with high bureaucracy quality or financial reforms, trade openness reduces corruption (Majeed 2014). Aidt, Dutta, and Sena also highlight that a government’s quality of institutions is a major determinant of the effects of corruption on its economy (Aidt, Dutta, and Sena 2008). In countries with deficient institutions, corruption has little to no effect on economic growth, because voters cannot punish corrupt politicians.

All of the stakeholders we interviewed placed corruption at the top of their concerns. Specifically, they complained about the high number of their interactions with government that were tainted by bribery. Examples, found below, include paying a cut to customs for the import of materials for manufacturing, bribing the city of Hanoi administration to obtain a good posting as a school teacher, or the necessity of gifting a doctor to obtain treatment for an injury.
“Even with a degree from foreign university, if I get job as teacher, I must pay the employer to get teaching position.” Graduate Student in Education

“In public hospitals, you find private wards ...and a pay “envelope culture” to receive better care…” Sarah Bales, UNFPA

“National policies (towards poverty reduction) are good … at local level policies are implemented in corrupt ways...local elders have corrupt practices to change tax system to achieve the targets...misuse of resources and not improving the quality of life…:” Tran Lam Nguyen, OXFAM

In the context of this study, we interpret the effects of corruption as diminishing the opportunities to access the economic benefits of growth fuelled by trade. In turn, those who have lesser means to pay those bribes, cannot access these opportunities, making them worse off and contributing to inequality. Studies by Mauro and Gupta et al. find that corruption also negatively affects the share of public spending on education and health, which could also contribute to inequality (Mauro 1998; Gupta, Davoodi, and Tiongson 2000). This is especially relevant for a government with a socialist orientation such as in Viet Nam. In addition to petty corruption, Viet Nam also faces large scale corruption. As the sole leader of the government, the Communist Party of Viet Nam (CPV) holds absolute power in deliberating strategic issues at both the national and enterprise levels (Truong and Rowley 2014). The resulting alliance between the CPV, the government and business (SOEs) has favoured quick decision-making and collective responsibility over the nation’s future, but has simultaneously impacted implementation through favouritism, cronyism, red tape and corruption (Truong and Rowley 2014). Combined with the government’s transition towards a “market economy with socialist orientation” (To and Hoang 2007 – add manually), corruption and the consolidation of vested interests has led authors to describe the current political economy arrangement as ‘capitalist cronyism’ (Roberts 2010).

Another issue raised during our interviews was the importance of networks. Indeed, having contacts in government can be an effective way of furthering one’s objectives — whether securing public contracts or being considered for employment in a government position. This corresponds to the definition of patronage, or “the preferential treatment of firms and/or individuals by public officials regarding the compliance with government rules for
the allocation of government contracts or transfer payments » (OECD, 2013). Concurrently, the misallocation of tax revenue makes it more difficult for the state to finance its assigned activities, and compromises the fairness and redistribution objectives of social programs. This asymmetry contributes to inequality by concentrating resources and opportunities in the hands of the well-connected, and restricts employment to specific positions for those who do not have such contacts. Because these contacts often accrue to wealthier and more powerful individuals, they create a vicious cycle where it is very difficult for an outsider to « get in », even while opportunities are increasing as a result of integration to international markets.

**State Owned Enterprises**

Opening up the economy to international trade has brought external pressure to improve the efficiency and management of Viet Nam’s state-owned enterprises. While much has changed, with state-owned companies decreasing since 1986 by ¾ down from 12,000 through a process of equitization and consolidation, many of the companies remain in essential areas of infrastructure and public service delivery, areas critical to international trade. Continuing conflicts of interest and political influence over management decisions compromise their effectiveness. The inefficient allocation of resources causes strains on precious state budgets which inhibits the government’s ability to devote adequate resources to education and social protection which could both help mitigate inequality. (Berliner, Thanh, and McCarty 2015; Beresford 2008) As we have seen in Korea, Chinese Taipei and Singapore, state-owned enterprises do not have to be inefficient, and they can effectively contribute to Viet Nam’s development if operated well. As the majority of the population worked in agriculture prior to the Doi Moi reforms, and not in the state sector, changes to the state enterprises continues to impact a minority of the population, but the disappearance of stable jobs, even for a fraction of workers, would cause considerable disruption, so the government has been approaching change gradually. (Nguyen 2016)

Viet Nam has pledged in APEC’s 2016 structural reform agenda to improve competitive neutrality for SOE’s and to establish a clearer separation between government regulation of enterprise and company management. Addressing inefficiencies in state-owned enterprises, either through improving management or further privatizing, could help redirect precious
government resources toward social programs like education, health and social protection, allowing more of the population to benefit from international integration.

**CHILE: SHADOW CASE STUDY**

Chile, like Viet Nam, has been held up as a trade openness success story. Having achieved high-income status and OECD membership, the economy’s growth has been impressive. Poverty rates have fallen from 45.1% in 1987 to just 14.4% in 2013 (World Bank 2013). Nevertheless, once again in line with our regression analysis conclusions on the effects of trade in high income economies, the gains from growth remain remarkably unequal in Chile (Figure 11). The Gini coefficient after taxes and transfers barely has barely budged from 56.2 in 1987 to 50.5 in 2013, despite impressive efforts at enhanced social services. (World Bank 2015). Here, we explore the aspects of trade openness that have contributed to shifts in wages, employment and inequality, in Chile as well as the successes and failures of policies interacting with the effects of trade. In contrast with the Viet Nam case study however, we have not performed any field work in Chile, which is why the structure of the comparison shadows the variables identified as a result of our interviews in Viet Nam.

![Figure 11- Chile: Inequality](image-url)
Trade liberalization began in Chile as part of a series of dramatic economic reforms enacted by the military dictatorship of General Augusto Pinochet. Having succeeded in ousting socialist President Salvatore Allende by a military coup, Pinochet set out to staunch the economy’s skyrocketing debt and grow the economy by reversing his predecessor’s pro-worker policies through decentralization and privatization of industry, tax reform and fiscal austerity (Levinsohn 1999). The regime’s repression of Congress, opposition parties, and the media meant, as Ffrench-Davis observes, that “executors of the economic plan enjoyed exceptional autonomy in design, implementation and adjustment of their policies.” (Ffrench-Davis 2010). The reform process was rapid and extreme compared with Viet Nam’s more gradual approach. In this period, the Chilean economy opened up unilaterally to trade. Most quantitative trade restrictions were removed and non-tariff barriers reduced. Tariffs were reduced in three stages from an average rate of 105% down to 10% by 1979. Meanwhile 3,000 government price controls were removed. State owned enterprises and banks were largely privatized (Levinsohn 1999). The government also removed quantitative restrictions on external borrowing and opened up interest rates to market fluctuation.

When the democratically-elected centre-left coalition came into office in 1990, they maintained Pinochet’s economic reforms, but placed greater emphasis on social protection, advocating “growth with equity” (Larrañaga 2009). In terms of international trade, the new leadership shifted the focus of trade policy from a unilateral approach toward one that sought bilateral and regional agreements. In 1991, Chile signed its first preferential trade agreement with Argentina, and has since become one of the economies with the largest number of signed trade agreements in the world. (WTO 2015). Chile had signed the GATT in 1949 and was a founding member of the WTO in 1995. As of 2007, 83% of Chile’s trade is covered by trade agreements. By 2003, Chile’s flat tariff rate had fallen to 6%, but because of its numerous agreements, Chile’s effective rate was just 2% in 2007 (Monfort 2008).

While trade liberalization led to substantial structural employment shifts in Viet Nam, changes in Chile were more concentrated within sectors and industries. (Levinsohn 1999). Despite the availability of low skilled labour, we see that manufacturing employment initially rose and then declined, jumping from 13.46% in 1986 to a high of 16.77% in 1992, but then falling to 10.84% of employment today (Figure 12). The largest share of employment is held today by the trade sector, but corresponding wages in trade-related
occupations are among the lowest. (Figure 13). Meanwhile, the financial services sectors, mining, and electricity/water/gas sectors all account for the lowest shares of employment, the wages in those industries are highest and have increased more rapidly than other sectors (Figure 14).
In their comparison of wage inequality in Chile and Costa Rica, T.H. Gindling and Donald Robbins show that widening inequality in Chile results from the more rapid increase in the income of the 90th percentile in comparison with middle and low-income workers. They focus their analysis on the increased demand for skilled labour resulting from trade liberalization and increasing returns to education (Gindling and Robbins 2001). Their work confirms an earlier study by Robbins in which he finds that in the period 1974-1979, after trade barriers were slashed, that the relative demand for skilled labour rose and the wage differentials between skilled and unskilled labour widened (Robbins 2016). Gindling and Robbins attribute the increased demand for skilled labour to skill-biased technological change and point toward increased imports of technology and physical capital following trade reform. Olga Fuentes and Simon Gilchrist also find that the demand for higher skilled workers increased in the years following trade liberalisation, specifically at the plant level, which they also attribute to the adoption of new technologies. Fuentes and Gilchrist argue, however, that the increase in technology was not directly due to trade (i.e. lower prices of new technology) but rather attribute this to the creation of “an economic environment” which encouraged the adoption of new technologies (Fuentes, Gilchrist, and others 2005). This economic environment was created due to a number of corresponding domestic...
reforms - not trade liberalization alone. Alejandra Pellandra finds that exporters, particularly those exporting to high income countries, hire more workers and pay higher wages than non-exporters which he attributes to the “higher sophistication of export markets” (Pellandra 2015). Access to education improved in Chile, feeding the supply of a greater demand for skilled labour, but wages for skilled labour still rose more rapidly than for unskilled workers, contributing to a widening income gap (Gindling and Robbins 2001).

![Chile: Employment by Skill Level](image)

**Figure 15- Chile: Employment by Skill Level**

It is difficult to talk about income inequality in Chile without referencing the economy’s heavy dependence on natural resources, and the concentration of resource ownership in relatively few hands. Chile’s significant natural resource endowments drives a large concentration of exports in the mineral sector, consistent with the Stolper-Samuelson theorem. Combined, ores and metals (54%), agricultural raw materials (6.6%) and fuel (7%) make up more than 61% of exports while manufacturing only accounts for 14%. (World Bank). Mining makes up just 2.5% of employment but currently accounts for 9% of GDP (Central Bank of Chile 2015). Chile is a natural resource abundant economy, and the benefits from the resource abundance have not effectively trickled down. In their study on inequality in Chile, Ramon Lopez and Sebastian Miller argue that Chile does not effectively tax the beneficiaries of natural resource ownership, use and extraction, and therefore both education and social protection programs which could help mitigate inequalities are
underfunded (López and Miller 2008). We elaborate further on policy issues in addressing the effects of trade openness on the economy below.

I. EDUCATION IN CHILE

Chile’s journey in education reforms has a very different starting point to those in Viet Nam. After the military coup in the 1970’s, Augusto Pinochet military dictatorship embraced free-market policies that decentralized the provision of government services, including those related to education. Given the political circumstances, policy reforms were difficult to suggest unless they came from Pinochet himself or his small circle of trusted advisors (Ffrench-Davis 2010).

When education reforms were rolled out in 1981, they produced a complex and fragmented system that involved significantly less public schools in addition to private schools, municipal schools and subsidized private schools through a government run voucher system.

Unlike Viet Nam, Chile’s economy is largely centred around of natural resources and financial services and this has painted a different employment landscape. Employment in these trade-related industries, particularly with a degree in higher education, can increase wages dramatically. According to the OECD, Chileans with degree in higher education can expect to earn as much as 160% more than their counterparts with secondary education or other forms of post-secondary education (OECD 2013). As such, in Chile the goal of many households is to finance tertiary education to attain high skilled employment, most of which are in trade related industries. This goal, however, is difficult to achieve in Chile’s education system without access to considerable wealth.

In the last decade the privatization of the education system has been hotly contested by students, who have participated in protests that stretched 3 years beginning in 2011. The decentralization of schooling, they argue, has created a fragmented society along the lines of class, exacerbating long standing inequalities within Chile.
By examining the literature in addition to a series of interviews, there are three challenges that resurface in Chile: access to quality education, skills development and low productivity. Due to the stark differences between the strong public education system in Viet Nam and the largely privatized system in Chile, direct comparisons are difficult to make. Nonetheless, the challenges they face in producing a flexible and qualified labour force which is adapted to an internationally open economy are similar, despite directional differences in the politics and policies of each respective economy.

**Access to Quality Education**

Inequality surrounding the delivery of education has been the topic of demonstrations in Chile. While Chile enjoys a high enrolment rate in both primary and secondary school of nearly 95% (UNICEF 2017), there are no assurances of quality control and access to good schools is highly dependent on a family’s socio-economic class (Valenzuela, Bellei, and Ríos 2014). Chile’s education system is highly fragmented and decentralized with historically low levels of public support, although this is now changing. The current system, however, is a reflection of Pinochet’s initial 1980s reforms. The system comprises of a two-tiered private sector which includes access to government vouchers, a municipal sector and a small public sector. There are several issues that contribute to the inequality of access to good schooling.

The first issue is that the fully privatized schools are profit driven, and by essence of their nature, will enrol students with families who are able to pay tuition fees. At the secondary level, this is particularly significant since graduating students sit for a nationwide university entrance exam (PSU). The quality of private secondary education is notably better than its public counterpart, allowing students from higher socio-economic classes to excel in the PSU.

The second issue is the interaction between the public and private sector at the tertiary level. While private secondary education is superior to the public system (Elacqua 2009), the opposite is true of tertiary education. This creates a problematic dynamic where the public system acts as a subsidy for the higher education of students from rich families. In the private sector, the quality of education varies, but the prices are extremely high. As of 2015, the average tuition fee was $23,600 USD, and the average Chilean household income was
$17,773 USD (OECD 2015), making Chile the 4th most expensive economy for a university education (Figure 16).

![The 11 most expensive countries for a university education](image)

**Figure 16**- Chile: Cost of Higher Education

While private institutions enjoy high enrolment rates, there is little doubt that the financial burden is a key contributor to the high dropout rate (Rau, Rojas, and Urzúa 2013).

“You do the math. It is impossible for the middle class or poor family to get access, so the government is the only factor that can improve the inequality in the system…”

(Professor Patricio Zamorano, Georgetown University, Al Jazeera 2014)

The third issue relates to municipal schools and the distribution of wealth. There are certain schools in Chile that are owned and operated by municipalities. This has led to a discrepancy in the amount of funds available to invest in education. Wealthy municipalities tend to spend more on education, and offer better quality than those that have more restrictions on their financial resources.

“The worst thing was the municipalisation of primary and middle schools. The municipalities with the most money dedicate more funds to education, giving rise to high levels of inequality.”

Pillar Mella, 57, Secretary (Inter Press Service 2013)
The fragmentation of Chile’s education system was perhaps intended to promote greater choice to Chileans, but has instead limited their ability to use education as a tool to promote equality of opportunity. As a result, the desired outcome of producing a flexible labour force to meet the demands of domestic and international markets, which are characterized by a large skills premium in Chile, is limited to those who can afford to finance high quality education.

**Skills Development and Low Productivity**

Since the quality of education varies across Chile, individuals enter the labour force with a highly variable level of skills, making it difficult for low income individuals to secure good jobs. Beyond the levels of education, there is evidence to suggest that Chile has not been able to effectively capture its human capital due to low productivity rates (Olaberria 2016) as articulated during our interviews with economists at the Economic Commission for Latin America and the Caribbean (ECLAC).

“More than 90% (of the economy) revolves around natural resources… low productivity is a problem in this economy.” (Dr. Andrea Pellandra, ECLAC)

According to data from the OECD, 22% of the 15-29 year olds are not enrolled in an educational institution or employed, leaving a gap in the youth workforce. Though we must note that Chile has made great strides in increasing the coverage of tertiary education in the last 20 years (Figure 17).
However this has not translated into better jobs across the socio-economic spectrum, with large gaps in pay becoming an increasing concern. Some scholars attribute this problem to a rise in horizontal inequality, where the nature of the institutions attended by individuals influences their employment opportunities (Salmi and Bassett 2012). Investments into greater skills training within the education system (Brandt 2010) as well as the development of stronger vocational skills could alleviate these gaps in the labour force (Olaberria 2016) (see Section III - Policy Recommendations).

The expansion and continuous reform to Chile’s vocational education training (VET) program is necessary to address the skills mismatch that is occurring in the labour market. The ability to integrate the private sector into the design of curriculum or to enhance learning in the workplace could alleviate a portion of the incongruity that exists between the labour force and the labour market.

There are complications that arise for Chile here, however, in comparison to Viet Nam. Chile’s factor endowments are largely based on the extraction of natural resources, with less emphasis on industrial policy that would encourage new niche markets in Chile, which could begin to diversify the nature of Chile’s exports. This was also highlighted during our field research in interviews with ECLAC.
The education system in Chile is currently the subject of targeted reforms to address the discrepancies that exist with regards to standardizing the quality of education, and enhancing skills development to increase the employability and productivity of its labour force. Addressing the issues of access to high quality education at all levels will increase the flexibility of Chile’s labour force, enabling it with the skills to accommodate the demands of the international market. In addition, if Chile intends on expanding their export market to industries that move them higher up the global value chain, this will mean that investments in vocational institutes and entrepreneurial programs will be necessary to create a labour pool equipped with the relevant skills to compete effectively in the international market.

II. Social Protection in Chile

As in Viet Nam, global economic shocks are often the spark that ignited reform of social protection strategies in Chile. As the disparities between the poor and the rich continue to widen, the glaring inadequacy of mitigating social programs have become apparent. While Chile has successfully expanded coverage and improved the targeting of funds for its most disadvantaged populations, the adequacy of benefits remains insufficient.

During Chile’s initial trade liberalization period under the Pinochet regime, the government enacted social reforms to facilitate the restructuring of the economy and improve labour mobility. Labour protections were loosened. With their new labour code introduced in 1980, the regime restricted the formation of national unions, decentralizing the bargaining process to firm-level activity. Union membership was no longer obligatory, and striking workers could be justifiably dismissed after 60 days. Worker dismissal in general was made easier through a cap on maximum severance pay, and firms no longer needed to prove “just cause.” In their analysis of labour market policies, Sebastian and Alejandra Edwards call
this period the “most flexible” when considering the last four decades of the 20\textsuperscript{th} century. They note, however, that even with the increased flexibility for firms, in an international context, Chile’s labour market regulations remained comparatively protectionist (Edwards and Edwards 2000). Using data from Marquez and Pages, the researchers rank employment protection on a scale of 1 to 37, with 1 representing the most protective and 37, the least protective (Márquez and Pagés 1998). Compared with the rest of Latin America (12.8), selected European countries (22.7) and the United States (37), Chile (11.5) ranks as being the most protected for overall job security (Edwards and Edwards 2000). Those labour mobility policies thus seem not to be an explanatory factor for enhanced international competitiveness.

Social insurance programs in this period were exclusively employer-based and included a pension scheme, worker compensation for accidents and sickness, and health care. Although these social insurance schemes were broad, covering 70\% of the labour force, their concentration on formal employment sectors meant they failed to reach the poorest households (Barrientos and Santibáñez 2009). As the economy increasingly opened up to international trade, the informal sector grew in Chile, reducing the degree to which the population could access social protection. The major social insurance reform in this period was the privatization of the government-run, employer-based pension scheme, which in 1980 shifted the contributory program to a mandatory, privately-managed system of individual retirement accounts. This new AFP pension fund manager scheme was accompanied by two additional pillars: the public defined-benefit scheme for those who participated in the old system and a means-tested, non-contributory pension program (PASIS) for the elderly and disabled who do not participate in the employer-based private program (de Mesa et al. 2006). The reforms succeeded in reducing the payroll taxes for employers significantly, which for low income workers had risen to as high as 50\% of wages in 1970 (Edwards and Edwards 2000). The privatized pension scheme is not mandatory for the self-employed, and consequently retirement coverage hovered at just 62\% of the population in 1997 (Edwards and Edwards 2000).

The 1990 democratic election of the centre-left coalition marked a new phase in social policy in Chile. While many of the looser labour protections enacted under Pinochet remained in
place, a new focus on “growth with equity” resulted in a proliferation of social assistance programs to combat rising levels of poverty and inequality. The 1997 Asian Financial Crisis provoked a recession in Chile in 1999, as capital inflows declined and exports fell (Guzman 2016). In response the government replaced an inadequate non-contributory pension scheme with a contributory scheme that incorporated a combination of private savings and market-based risk-pooling (Guzman 2016). The adequacy of benefits was much improved, to the point where the scheme is currently over-funded, but the insurance only covers formal workers.

Under the new administration, social spending increased, rising by a factor of 2.5 between 1990 and 2006 (Larrañaga 2009). Despite the increased attention, a review of the many anti-poverty programs in 2002 revealed a fragmented system with 142 programs administered by 33 agencies (Barrientos 2010). The review also concluded that the majority of programs were passive and not targeting the poorest households, but rather the moderately poor, failing to acknowledge the limited capacities of those at the lowest levels of the income spectrum. In 2002, the government introduced Chile Solidario, a program designed to consolidate the numerous fragmented poverty reduction programs that were already in place, and to better target assistance for the poorest 6% of households. Through a household survey, the government identified the poorest 225,000 households in Chile. Each was assigned a case worker to help them access the programs most relevant to them, and to help navigate them through a six-month to two-year assistance period designed to improve household well-being using a set of 53 criteria including measures of education, health income, employment, and housing, acknowledging “the multidimensional nature of poverty” (Barrientos and Santibáñez 2009; Barrientos 2010). Chile Solidario includes a cash transfer scheme that according to program evaluations is well targeted, but like many social assistance programs in Chile, the redistribution effects for poor households are small, because the level of assistance is relatively low.

In their assessment of coverage, adequacy and targeting for Chile’s social protection programs, the World Bank estimates Chile’s overall coverage to be very high, with social assistance programs reaching 74% of the population including 94% in the lowest income quintile. Meanwhile social insurance programs cover 44% of the population overall,
including 43% of the lowest quintile. Adequacy of benefits and targeting is, however, low. Although social assistance programs extend to a wide portion of the population, just 24% of available funds actually reach the lowest income brackets. With just 14% of household income attributable to social assistance for the poorest populations, the programs are not acting as a redistribution of wealth in Chile, and therefore not contributing to the mitigation of inequality. (ASPIRE: Atlas of Social Protection)

Table 7 – Viet Nam and Chile: Social Protection Policies Compared

<table>
<thead>
<tr>
<th>SOCIAL PROTECTION</th>
<th>Viet Nam</th>
<th>Chile</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOCIAL INSURANCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequacy</td>
<td>28.28%</td>
<td>27.59%</td>
</tr>
<tr>
<td>Coverage</td>
<td>14.41%</td>
<td>44.6%</td>
</tr>
<tr>
<td>Targeting</td>
<td>1.95%</td>
<td>5.69%</td>
</tr>
<tr>
<td><strong>SOCIAL ASSISTANCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequacy</td>
<td>2.49%</td>
<td>6.82%</td>
</tr>
<tr>
<td>Coverage</td>
<td>47.72%</td>
<td>74.24%</td>
</tr>
<tr>
<td>Targeting</td>
<td>43.65%</td>
<td>24.48%</td>
</tr>
</tbody>
</table>


III. Governance

Petty corruption does not play the same role in daily interactions in Chile than it does in Viet Nam. Studies effectively show that Chileans have the lowest degree of tolerance among Latin American countries for corrupt practices in the public sector, such as the payment of bribes (UNDP 2014).

For Pollack and Mattear (1997), corruption exists, but exhibits local characteristics and has commonly been low-key, leading to what has historically known as “corrupción a la chilena”. These authors describe the Chilean declination of corruption as

“More than bribery [...] and characterised by the use of influence through the manipulation of kinship, friendship or shared ideological, political, professional, educational, religious or sectarian values and/or perspectives.” (Pollack and Mattear, 1997)

Yet, the Pinochet regime shifted away from this previous traditional model, based on consensual rule, and divided the government and state powers between the political class
along the basis of shared interests and family ties which spanned the political spectrum. The concurrent economic restructuring refined the relationship between the public and the private sectors, as well as the armed forces. While the government’s policy was driven by the free market ideology, it was accompanied by the concentration of political power, the lack of accountability, and the arbitrary use of violence (Pollack and Matear 1996). Moreover, some neoliberal reforms undertaken by the military government, such as the privatization of state-owned enterprises, facilitated the concentration of economic assets in the hands of the nowadays large and influential grupos económicos (industrial conglomerates), through rapid transactions which took place without clear regulation (Silva 2016). On the other hand, despite Pinochet’s own enrichment, the rapid expansion of the private sector and the curtailment of the political process reduced the opportunities for rent-seeking (Rehren 2000; Blake and Morris 2009). The effects of opening to trade, although difficult to disentangle from the effects of the accompanying economic reforms, do not seem to have led to the widespread increase in rent-seeking behaviour seen in Viet Nam.

The 1990 democratization has contributed to shifting political priorities towards addressing socioeconomic inequalities, towards which, according to Luna, progress was accomplished both by Ricardo Lagos (President 2000-2006) and Michelle Bachelet (President 2006-2010, and 2014 to now) (Luna 2016). Nonetheless, both of these governments were plagued by significant high-level corruption scandals which raised discontent among the public (Silva, 2016). Chile’s freedom of press undoubtedly contributes to the public’s knowledge of such issues, while the subject remains unreported on in Viet Nam, where the media a state-controlled.

*State Owned Enterprises*

Trade liberalization in Chile was only partially responsible for the massive privatization of Chile’s State-Owned Enterprises. Prior to the reform package enacted under Pinochet’s military regime, the government had rapidly expanded the SOE sector. As a result the number expanded from 68 to 596 in just three years (Lüders 1993). Pinochet’s aim to privatize SOEs, therefore, was part of a broad package of reforms aimed at reducing government debt and stimulating growth. Trade reform influenced the later phases of privatization efforts by heightening competition for domestic enterprises as well as serving
as a legitimizing influence for the privatization process. In his analysis of the divestiture process, Rolf Luders observes:

“privatization has been one important instrument of an economic policy which has transformed the private sector into the principal agent of economic growth in the country and a stagnant into a dynamic economy...However, without deregulation and the opening of the economy to international trade and capital flows, among other complementary measures, these effects could probably not have been accomplished. The whole structural reform package assured the social usefulness of private enterprise, which now has to seek profits by satisfying the needs of the population producing the goods and services demanded at the lowest possible cost.”

As it stands, there are fewer than 34 SOE’s that remain in Chile, by far the largest being Codelco, the copper conglomerate (Christiansen 2011). The other two primary state-owned companies are ENAP, an oil and gas company, and ENAMI, a mining company (OECD).

Chile has made several key efforts to ensure efficient management of their state-owned enterprises including laws passed in 2000 and 2009 to improve checks and balances and ensure fair market competition. In particular, 2009 legislative reform specifically of Codelco solved some of the problems observed in other government-owned companies including issues with ensuring competition between private and public enterprises, and is considered a good blueprint for reform in the state sector elsewhere. (OECD Corporate Governance in Chile 2011) In their assessment of further reforms necessary in SOE corporate governance, OECD analysts found continuing conflicts of interest in some of the remaining SOE’s, particularly the presence of government Ministers on boards, simultaneously charged with regulating and managing the companies.

Codelco serves an important role in the Chilean economy’s interaction with international trade markets. Because so much of the Chilean economy relies on natural resource revenue, and Codelco’s copper accounts for a significant portion, openness to international price shocks caused significant volatility and contributed to the debt crisis of the 1980’s. In 1985, Chile established the Copper Stabilisation Fund to mitigate some of the uncertainty given that copper revenues help fund important government services. The CSF was replaced by the Economic and Social Stabilisation Fund, which serves a similar purpose, in 2007 (Solimano, Guajardo, and others 2017). The fund’s interaction with the state-owned
enterprise allows Chile to maintain open trade policies despite an imbalanced reliance on copper for revenue. Given that Chile has been unsuccessful at adequately taxing natural resource revenues to assist wealth redistribution, privatization of the copper conglomerate would likely not yield the societal benefits of the state-owned enterprise. Chile, unlike Viet Nam, has taken important steps to improve management structures at its state-owned enterprises, fostering efficient and revenue-generating enterprises that help fund important government programs proving that just because the enterprise is government-owned, does not mean it cannot be well-managed.

**Comparative Table: Viet Nam & Chile**

In the following table we highlight some of the variables that have affected the interaction between trade openness and employment. The key findings are summarized below however there are a few worth highlighting in greater detail. In both Viet Nam and Chile, social protection policies have not adequately mitigated inequalities despite increasing coverage. Nevertheless, in Viet Nam, land distribution has acted as a form of social insurance whereas in Chile the lack of redistributive land policies have exacerbated inequalities. In terms of education, both economies have high literacy rates, yet in Viet Nam we find an oversupply of graduates with fewer employment opportunities and in Chile we find a skills shortage, particularly in high-skill industries. Finally, given the different political leanings of these two economies, it is interesting to consider that SOEs in Viet Nam, the more socialist of the two, have soft budgets which, while providing stable employment for approximately 10% of the population, have inhibited the effective allocation of government resources. Conversely, though SOEs few in Chile, they play an important part in the supporting social policies that mitigate inequality.

**Table 8 – Viet Nam & Chile: Comparison Overview**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Viet Nam</th>
<th>Chile</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td>Centralized high quality education, creating flexible labour force for industry in low and medium skill jobs, Lack of standardization</td>
<td>Decentralized and variant quality education dependent on geographical location and financing, Trade industries demands high skill making full-time employment for</td>
</tr>
<tr>
<td>Social Protection</td>
<td>surrounding quality of tertiary education and vocational institutions -- over supply of institutions and graduates. Skills mismatch and underemployment -- high skilled workforce with low skilled jobs or part-time employment and the presence of an informal economy</td>
<td>low and medium skill workers more challenging to attain Employers facing skills shortage and low labour productivity Flexibility of labour force is limited in high skill graduates due to prohibitive access -- high enrolment, high dropout</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Trade-related employment volatility and structural employment shifts require revised social protection policies.</strong></td>
<td><strong>Extreme inequality has led to expansion of social protection measures.</strong> Social protection coverage has expanded, and is better targeted than two decades ago, but benefits are still insufficient to actually mitigate inequality.</td>
<td></td>
</tr>
<tr>
<td>Trade assistance is well targeted to poor populations and coverage is decent, but adequacy of benefits is not sufficient for mitigating. Social insurance has expanded to informal sectors, but take-up is low. Coverage still dominant in government employment sectors. Equitable land distribution following de-collectivization served as a form of social insurance during global economic crisis, avoiding severe economic and social consequences for majority of population.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Governance: Corruption</td>
<td>Petty corruption and the importance of networks decrease access to services and employment opportunities as well as increase the rent-seeking opportunities resulting from trade openness.</td>
<td>Conflicts of interest and connections between the business and political elites concentrate assets and give unfair advantages to well-connected families.</td>
</tr>
<tr>
<td><strong>Trade openness has put pressure on SOE’s to become more efficient.</strong> Trade-related changes in the economy require shifting budget allocations toward education and social protection.</td>
<td>Chile has few SOEs remaining, but those that do serve an important role in funding social programs that contribute to the mitigation of inequality. High levels of inequality</td>
<td></td>
</tr>
</tbody>
</table>
Inefficient SOEs inhibit productive allocation of government resources. Viet Nam has committed to several key changes to address conflict of interest issues in management and regulation. Demonstrate that more needs to be done to shift the distribution of resources, including better taxation of natural resources including copper.

SECTION III: POLICY RECOMMENDATIONS

Our quantitative findings show that trade openness has a bigger effect in increasing inequality in high income economies, where it also has a bigger effect decreasing medium skills employment. Our case studies indicate that in both Viet Nam and Chile, trade has a skills-biased effect on both employment opportunities and wages, while it also introduces increased volatility into the employment landscape. Therefore, in response to increasing their openness to trade, workers need greater access to new opportunities and security. Our policy proposals therefore focus on these two needs.

On the one hand, policy makers need to improve access to opportunities through education by dismantling networks that impede access. At the same time, policy makers need to provide greater security to mitigate volatility and stabilize incomes for the lowest skilled populations. We therefore recommend options for APEC as well as the two case study economies to consider.

APEC

Awareness, collaboration and communication - Given our findings that middle skilled workers experience greater inequality, particularly in developed economies, APEC should continue to initiate discussions between its members to address this issue, as well as take a lead in communicating the benefits of ensuring that trade is sustainable and inclusive. Crafting effective communication strategies are crucial to the success of further transnational trade. This will include advising economies to allow greater participation, consultation and transparency before, during and after trade negotiations. Special consideration should be given to the different manner in which inequality at the middle skill level manifests itself in economies at different stages of development. From this discussion,
collaborative strategies, such as the addition of targeted labour policies in trade agreements, can increase inclusiveness and participation of the labour force.

**Universal basic income research** - Universal basic income has seen increasing media and scholarly interest lately - especially after the idea was lauded during the 2017 World Economic Forum in Davos. In a world where the structural effects of openness to trade but also of progress in automation technology seem to suggest that employment is increasingly precarious, the idea of permanently guaranteeing every member of a society a minimum income could act as a cushion to facilitate adjusting to job transitions, as well as increase equality of opportunity. The Viet Nam government, for instance, has included it in its social protection strategy 2011-2020, but budget constraints raise questions regarding implementation. While the large-scale feasibility of the policy has not yet been demonstrated, experiments are currently taking place in Finland, Namibia, Brazil and India. In line with its mission of promoting economic cooperation between economies, APEC should promote the investigation of mechanisms that could address the labour displacement effects of trade, such as universal basic income. As such, it could offer some research funding and support to academics and practitioners working on the issue, and organize conferences reuniting experts on the subject matter in order to position APEC as a leader on the issue.

**Standardized Accreditation of Trade Related Vocational Institutes** - This would entail defining a set of criteria that trade related vocational institutes would need to fulfill in order to be accredited by APEC. This would serve three purposes. Domestically, it would act as an indication to prospective students regarding the quality of the institution. Internationally, it would facilitate the logistics surrounding trade, as foreign companies could select employees that have graduated from accredited institutions and be assured a certain level of quality. It would also push for a level of standardization amongst APEC economies, so that all vocational institutions (of a particular vocation) would teach a minimum base of relevant skills.

**APEC Scholarships for Vocational Institutes** - APEC should provide scholarships in its different member economies to up-skill students wishing to pursue vocations related to
international trade. This would address two issues. A scholarship associated with the prestige of APEC would begin to change the negative perceptions surrounding vocational studies. In addition, it would reduce costs for prospective students while encouraging them to fill gaps in an employment landscape affected by trade.

VIET NAM

Education:

➢ **Vocational Training** - Viet Nam is currently offering support to its vocational institutes in the form of general subsidies. This should be shifted towards subsidies that are performance-based in order to avoid waste and to encourage healthy competition with respect to the quality of education provided. Increasing the quality of the training will in turn enhance the image of vocational institutes and counter negative societal perceptions towards them.

➢ **Higher Education** - Allowing greater degrees of freedom to change the curricula would allow institutions to incorporate modules relevant for the demands of the employment market. This would include soliciting input from faculty, other universities and, most importantly, industry to ensure that students learn relevant skills that increase their employability as well as enhance the flexibility of the labour force.

**Tri-sectoral Training Initiative** - To take advantage of international trade opportunities, vocational and skills-training institutes should engage directly with foreign employers to partner on curriculum development and instruction. The institutes could in turn assist employers' screening for qualified candidates, helping with employee retention and better matching skills. Non-profit organizations like Technical, Vocational Education and Training (TVET), with the advantage of flexible and dedicated staff, could coordinate the development of institutional and employer relationships.

**Minimum wage** - formal employment sector - Our study has shown that trade introduces a skill bias into the labour force. As a result, the lowest skilled people are disadvantaged in not being able to access the from gains from trade. Having a minimum wage could help
mitigate this disparity. This would help in providing a higher salary for those at the bottom of the skill spectrum, and act as an incentive for low-skilled workers to move from the informal economy to the formal economy. We recognize that Viet Nam’s comparative advantage relies in its low price labour, so the wage will have to be incrementally higher than current market wages in order to ensure that job creation in low-skill manufacturing continues and to prevent its displacement to cheaper economies.

Social protection - The government of Viet Nam should, given a very low benefit incidence compared to international standards, extend the social protection programs to protect people who have been relatively disadvantaged from trade openness. Current social protection programs in Viet Nam are biased to formal sectors - particularly to public sector employees, while more than 63% people are employed in the informal sector (see section V.i). Thus, the government must ensure that the people in the informal sectors are adequately covered under some forms of social insurance. This would require reforms at the institutional level, including relaxing household registration systems, designing portable social security accounts and introducing an adequate support system for public and private institutions which are responsible for the informal sectors.

Migrant access to public services - We concur with the recommendation of the World Bank in their 2016 study on the household registration system that the ho khau system should be reformed to remove the barriers to opportunity currently embedded in the system. (Linh Hoang Vu and Gabriel Demombynes 2016) This entails making permanent registration easier for temporary registrants and giving equal access to government services for both groups. As we witnessed in our interviews with informal workers in Hanoi, there is considerable variation in how rural migrants to cities are making new opportunities work for their families. Researchers have demonstrated that lowering mobility costs for workers improves their inclusion in economic growth, and therefore could increase their ability to access gains from trade. (Brooks and Go 2012)

Governance – To allow for a more equitable access to job opportunities and services, it is important to strengthen governance by eradicating corruption. A public campaign against corruption would be helpful in signalling the government's commitment to a bribe-free
public sector. This could be done by creating and publishing detailed Citizen Charters informing people of their rights and of proper government procedures, so as to avoid corrupt practices in the bureaucratic process. Tougher penalties for bribes could also further discourage people from being involved in these practices. Lastly, citizen engagement for corruption prevention should also be promoted. This could be done by developing a mobile app or an online platform allowing citizens to anonymously report corrupt practices and render this information available to the public, coherent with the “naming and shaming approach” used in India's www.ipaidabribe.com.

CHILE

Education - There is a need to improve access to high quality education in Chile in order to increase the labour force's skill levels. We suggest greater funding for the public system from taxation revenue to allow it to compete effectively with the private system, while eliminating the public funding of for-profit schools. This would include investment in hard infrastructure such as upgrading facilities in less advantaged areas, as well as an in soft infrastructure such as teaching support, pedagogical training and increasing wages for teaching staff. In addition, greater support for vocational and skills training would help fill gaps in the employment market and increase the employability and productivity of the labour force. Finally, an increased standardization of content, particularly in the years prior to the university entrance exam, would promote fairness and reduce the inequality of opportunity between public and private institutions.

Tax reform - When Chile enacted tax reform in 2014, the natural resources sector was not subjected to the new legislation. A modest progressive royalty tax for large mining operations was introduced in 2005, but otherwise, mining operations are subjected to a corporate tax rate of 20%. Evidence suggests that compared with other economies heavily reliant on natural resource revenue (Australia, Alaska, Canada), Chile is failing to capture a significant portion of economic rents from mining (López, Figueroa, and others 2016) . As mentioned above, addressing inequality will require significant investments in education, social protection and promotion of employment-generating sectors. Capturing fair returns on natural resource exploitation should substantially contribute to these efforts.
**Industrial policy** - An important area of intervention for the Chilean Government is long-term industrial policy, which has historically been a political taboo – although there have been recent developments to encourage innovation, such as the creation of the Nation Council on Innovation for Competitiveness. This industrial policy should however further emphasize the development of SMEs by provide more support and resources for their financing. The policy should also push to diversify the economy’s reliance on resource exploitation and encourage investment in research and development in high added-value sectors which catalyze innovation, the use of high technology and of information technology, especially in SMEs. Moreover, this diversification policy should also include encouraging the development of new products and niches within the existing clusters where Chile already holds comparative advantage.

**CONCLUSION**

This study has attempted to shed light on the trade-employment and trade-inequality relationships in APEC economies. The research first quantitatively assessed how these relationships unfolded for the 21 APEC members through regression analysis. We found that, across APEC economies, increasing the volume of imports and exports as a ratio of GDP increases inequality before taxes and transfers. Our results also highlight that the effect of trade is larger in high income economies than in non high income economies. We further investigated a potential channel through which inequality occurs in APEC economies: employment opportunities. We found that workers with higher skills are getting more employment opportunities from trade openness, while workers with medium skills see their share of employment decreasing. Although we did not see any significant change in the share of low skilled employment, their static position could contribute to higher relative inequality. Our findings show that opening to trade has a bigger impact in high income economies on increasing inequality (pre-taxes and transfers). Regarding its effects on employment, we found that trade also had a bigger effect in reducing the share of the medium-skilled labour force in high income economies.

Second, we examined how policy variables mitigated or exacerbated these two relationships in two APEC economies: Viet Nam and Chile; the latter is a lower middle economy, while
the former is a high income economy. Our fieldwork in Viet Nam led us to choose three policy variables: education, social protection and governance. We found that education and governance contributed to higher or lower inequality in the two economies, while social protection was ineffective due to inadequate benefit levels. While Viet Nam benefits from a relatively well-educated work force, graduates are not equipped for the skills actually demanded by industries, particularly those that have expanded with trade openness. Chile on the other hand has an education system that exacerbates inequality. In terms of governance, the high levels of corruption in Viet Nam, exacerbated by the opportunities introduced with trade openness, acts as a barrier to opportunity, while inefficient state-owned enterprises divert precious government resources away from programs that could better support more equitable access to opportunity. In Chile, petty corruption is less of an issue, but the high concentration of wealth in relatively few hands serves as barrier to opportunity and contributes to the high level of inequality.

As both sections of the research emphasized, the skills-biased effect of trade on employment opportunities resulted in more inequality, even more so in high income economies. Therefore, the report suggests that APEC and national policy-makers focus on enhancing workers’ access to employment opportunity and security.

To conclude, APEC economies are extremely diverse, in many different ways - factor endowments, skill distribution of the labour force, institutions and policies, as well as income levels. Generalizations consequently need to be taken with this caveat in mind, as opening to trade will have very different effects on inequality and employment depending on the interaction between these factors. Yet, as APEC members contribute to half of the world’s economy and half of the world’s trade, studying these economies is necessary and significant. Policy-makers need to account for their specific contexts in both the choice of how they open up their economies, as well how they design social policy, education systems and their governance institutions, which will undoubtedly affect or be affected by the changes brought about by trade. In high income economies, where the political climate is tense, identifying which of these policies are most efficient to address the effects of trade is especially important. The APEC members below on the income scale, who see smaller effects of trade openness on inequality, also have the opportunity to use this example to
anticipate how their economies’ structure might change and which policies are best suited, before it reaches the same effects as in high income economies.


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———. 2015a. “Adult Literacy Rate, Population 15+ Years, Both Sexes (%) | Data.”


———. 2015c. “Tariff Rate, Applied, Weighted Mean, All Products (%) | Data.”


APPENDICES

Appendix A
Table: Number of interviewees by professions

<table>
<thead>
<tr>
<th>Serial number</th>
<th>Number</th>
<th>Profession</th>
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<tbody>
<tr>
<td>1.</td>
<td>3</td>
<td>Academics</td>
</tr>
<tr>
<td>2.</td>
<td>3</td>
<td>Economists</td>
</tr>
<tr>
<td>3.</td>
<td>16</td>
<td>Informal sector labours</td>
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<tr>
<td>4.</td>
<td>2</td>
<td>Factory workers</td>
</tr>
<tr>
<td>5.</td>
<td>3</td>
<td>Development organizations</td>
</tr>
<tr>
<td>6.</td>
<td>2</td>
<td>Industry representatives</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
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Appendix B
Table: Regression on Inequality (panel fixed effect estimation)

<table>
<thead>
<tr>
<th></th>
<th>Inequality (Theil index)</th>
<th>Inequality (Theil index)</th>
<th>Inequality (Theil index)</th>
<th>Gini-coefficient</th>
<th>Gini-coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade openness</td>
<td>50.047***</td>
<td>49.435***</td>
<td>45.699**</td>
<td>4.190*</td>
<td>4.804**</td>
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<tr>
<td></td>
<td>(15.386)</td>
<td>(15.864)</td>
<td>(17.911)</td>
<td>(2.229)</td>
<td>(2.060)</td>
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<tr>
<td>Govt. effectiveness</td>
<td>1.436</td>
<td>10.751</td>
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</tr>
<tr>
<td></td>
<td>(11.470)</td>
<td>(14.315)</td>
<td>(2.627)</td>
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<td></td>
</tr>
<tr>
<td>Control of corruption</td>
<td>-21.652*</td>
<td>-24.886**</td>
<td>-2.930</td>
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</tr>
<tr>
<td></td>
<td>(10.438)</td>
<td>(11.669)</td>
<td>(1.995)</td>
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<tr>
<td>Population growth rate</td>
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<td>-11.432*</td>
<td>-1.036</td>
<td></td>
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<tr>
<td></td>
<td>(5.430)</td>
<td>(6.197)</td>
<td>(0.632)</td>
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<tr>
<td>GDP growth rate</td>
<td>-0.035</td>
<td>-0.264</td>
<td>-0.083**</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>(0.300)</td>
<td>(0.427)</td>
<td>(0.039)</td>
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<tr>
<td>Inflation rate</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Economic globalization</td>
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<td>-0.117</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.069)</td>
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</tr>
<tr>
<td>Overall globalization index</td>
<td>1.647</td>
<td></td>
<td></td>
<td>0.173</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.093)</td>
<td></td>
</tr>
<tr>
<td>Social globalization</td>
<td>-1.542*</td>
<td></td>
<td></td>
<td>-0.015</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.745)</td>
<td></td>
<td></td>
<td>(0.087)</td>
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</tr>
<tr>
<td>_cons</td>
<td>54.128***</td>
<td>80.947***</td>
<td>63.841**</td>
<td>35.388***</td>
<td>37.255***</td>
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<tr>
<td></td>
<td>(13.998)</td>
<td>(8.555)</td>
<td>(25.533)</td>
<td>(2.048)</td>
<td>(3.254)</td>
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<tr>
<td>$R^2$</td>
<td>0.25</td>
<td>0.29</td>
<td>0.31</td>
<td>0.11</td>
<td>0.26</td>
</tr>
<tr>
<td>N</td>
<td>211</td>
<td>209</td>
<td>192</td>
<td>202</td>
<td>179</td>
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</tbody>
</table>

Note: Robust standard errors are reported in parenthesis. Significance level: * p<0.1; ** p<0.05; *** p<0.01
**Appendix C**

Table: First stage regression results

<table>
<thead>
<tr>
<th></th>
<th>Trade openness</th>
<th>Upper middle income*trade openness</th>
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</thead>
<tbody>
<tr>
<td>Lagged values of trade openness</td>
<td>1.003***</td>
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<tr>
<td>Control of corruption</td>
<td>0.056</td>
<td>0.049</td>
</tr>
<tr>
<td></td>
<td>(0.042)</td>
<td>(0.066)</td>
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<tr>
<td>Government effectiveness</td>
<td>-0.053</td>
<td>0.159*</td>
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<td></td>
<td>(0.056)</td>
<td>(0.088)</td>
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<tr>
<td>Population growth rate</td>
<td>0.008</td>
<td>-0.032</td>
</tr>
<tr>
<td></td>
<td>(0.016)</td>
<td>(0.025)</td>
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<tr>
<td>GDP growth rate</td>
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<td>-0.002</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.004)</td>
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<tr>
<td>Inflation rate</td>
<td>-0.000</td>
<td>-0.000</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
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<tr>
<td>Economic globalization</td>
<td>-0.001</td>
<td>-0.002</td>
</tr>
<tr>
<td></td>
<td>(0.001)</td>
<td>(0.002)</td>
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<tr>
<td>Restrictions</td>
<td>0.002</td>
<td>0.007***</td>
</tr>
<tr>
<td></td>
<td>(0.001)</td>
<td>(0.002)</td>
</tr>
<tr>
<td>Overall globalization index</td>
<td>-0.003</td>
<td>-0.006**</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.003)</td>
</tr>
<tr>
<td>Upper middle income*lagged</td>
<td>0.249***</td>
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<tr>
<td>values of trade openness</td>
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<td>_cons</td>
<td>0.138**</td>
<td>0.198**</td>
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<td></td>
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<td>$R^2$</td>
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<td>$N$</td>
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<td>195</td>
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</table>

* $p<0.1$; ** $p<0.05$; *** $p<0.01$