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Exchange rate, remittances and expenditure of foreign-born households: evidence from Australia*

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Preliminary draft { please do not quote

Abstract

We examined the impact of the depreciation of the Australian dollar (AU$) during 2013-2015 on the expenditure of households with foreign-born members (HFBMs) in Australia. Employing the di erence-in-di erences method and 2013-2015 Nielson Homescan Panel Survey data, we found that HFBMs spent around 2.4 percent more on their food expenditure in 2014 and 4.0 percent more in 2015 compared to their native counterparts. Further investigation indicated that neither incomes nor food prices nor the expenditures on imported food items changed di erently for any group in that period, while an analysis with HILDA survey data indicates a similar pattern for total expenditures. With reduced outward aggregate remittances from Australia over the same time, we argue that falling AU$ induces HFBMs to substitute for consumption in the home country with that in the host nation. Our empirical results provide fresh insights on how changes in the exchange rate may a ect immigrants di erently than natives.

JEL-Classi cation: D12, D60, I30, Z13, Z18

Keywords: Australia, exchange rate, immigrant, consumption

*The data analysis for the project was conducted at the ANU Crawford School of Public Policy that owns the Nielson Homescan Panel Survey (NHPS) data for 2013-2015. NHPS data are only available with a subscription from Nielsen Australia. This paper also uses the general release le of the Household, Income and Labour Dynamics in

1. Introduction

Exchange rates a ect economic agents in many ways. At the macroeconomic level, it a ects the trade balance and the in ow of foreign capital in a country (Mankiw, 2015) and consequently, productivity across di erent sectors in the economy (

for weekly values and again drop observations belonging to the unbalanced panel (797,160), missing expenditure (305,800) and 2014 and 2015 wave of the data (662,721). Thus this analysis sample includes 330,023 observations. To check whether an analysis with the weekly exchange rate and the proportion of immigrant member makes any di erence, we construct a fourth sample following the steps of the third sample but now keep observations for 2014 and 2015 which gives a sample of size 991,060. Next, to check the robustness of our results with the unbalanced panel, we followed the process of selecting our main sample but this time retaining households not belonging to all panel years. This fth sample includes a total of 32,220 observations.

Finally, to check the pattern of total household expenditure, we use data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey { a nationally representative panel survey that has been collecting socioeconomic, demographic and labor market data of Australian households since 2001. HILDA is recognized as a good source of data on household expenditure pattern and employed in many important studies in Australian and internationally. With HILDA, we start with 9,555, 9,538 and 9,631 households for 2013, 2014 and 2015, respectively. From that, we drop 4,917 observations for missing or nil household expenditure to get our nal analysis sample of 23,807 households.[8]

Table 1 presents annual household food expenditure in our main analysis sample, separately for households with and without foreign-born member(s). Both mean and median expenditure indicates that household food expenditure increases between 2013 and 2014 and drops in 2015. The increase in 2014 is higher for HFBMs while the reduction in the next period is lower than their native counterpart indicating a di erential impact of exchange rate on the food expenditure of HFBMs and natives.

[Table 1]

3. Empirical framework and identification

For an Australian household with foreign-born member, let x_1 be a basket of (normal) goods consumed in the country of origin with price p_1 and x_2 be a basket of (normal) goods consumed

[8] Details of HILDA can be found from (Wilkins & Lass, 2018).

in Australia with price p_2 (all in AU$).[9] A fall (rise) in the value of AU$ would raise (reduce) p_1 as less (more) x_1 will be purchased by the endowment. Ignoring the effect of the fall in AU$ on the prices in Australia at this moment, this indicates that the consumption of x_1 will fall both due to the substitution and income effect.[10] On the other hand, the increase in p_1 will mean that the consumption of x_2 will reduce due to income effect but will increase due to the substitution effect. Thus the consumption of x_2 may increase or decrease depending on which of the income and substitution effect dominates.

However, the change in the exchange rate will cause the domestic prices in Australia to change through foreign trade. Therefore, for any analysis, it is important to exclude such effects. Thus, the impact of the change in exchange rate on a household with foreign-born members can be identified by $\frac{\partial x_1}{\partial p}$; $\frac{\partial x_1}{\partial p}$; $\frac{\partial x_2}{\partial p}$ and $\frac{\partial x_2}{\partial p}$. The first two terms give the direct and indirect impact of exchange rate on the consumption in the country of origin of foreign-born Australians while the last two terms give the direct and indirect impact of the exchange rate on their consumption in Australia, respectively. For a native Australian, the only relevant case is the last term as, for them, x_1 is zero and the exchange rate has no direct effect on their consumption (x_2).

Thus, comparing domestic consumption of foreign-born households with natives will offset the effect of domestic price changes in Australia and will identify the direct effect of exchange rate on the consumption of the former group in their host country ($\frac{\partial x_2}{\partial p}$). As a result, we use a difference-in-differences (DD) model to identify the impact of exchange rate on consumption of households with

where, for each household *i* and year *t*, *y* represents (the log of) household's food expenditure, *z* is a dummy indicating whether the household has a foreign-born member, *d* is a dummy taking the value of one for period *t* and zero for the reference period (i.e., 2013), X is a vector of control variables included in the regression and *u* is the error term.[11] The vector X includes variables like household size, annual household income, home type and home ownership status that can a ect households' food consumption behavior. We additionally control for the State xed e ects ($_s$) to net out the e ect of location-speci c factors (like employment opportunity and price level).

Thus, in our model, the coe cients $_t$ are the di erence-in-di erences estimates, indicating the impact of the depreciation of domestic currency on the food expenditure behavior of Australian HFBMs ($\frac{@x}{@p}$). Interestingly, the direct impact of the depreciation of domestic currency on the food consumption behavior of HFBMs can be divided into income and substitution e ect by using the Slutsky equation

$$\frac{@x_2}{@p_1} = \frac{@h_2}{@p_1} \quad \frac{@x_2}{@I} \quad \frac{@E}{@p_1} \quad ; \tag{2}$$

where, *h*, *I* and *E* indicate the compensated (or Hicksian) demand, income and expenditure, respectively. The rst part of the right-hand side of equation (2) indicates the positive substitution e ect while the second part exhibits the negative income e ect. Thus the DD estimates in our case indicate the resulting di erences between the two e ects.

It is possible that the HFBMs are di erent than their native counterpart. The longitudinal nature of our data allows us to control for individual heterogeneity and therefore we employ household xed e ects for our estimation technique.

The DD model relies on comparing the di erence in food expenditure between HFBMs and native households before and after the change in the exchange rate of the Australian dollar. The identifying assumption of this approach is that the di erence in food expenditure between HFBMs (treatment) and native households (control) would have remained the same without the change in the exchange rate of the Australian dollar.

We cannot test our identifying assumption directly but we are able to examine the historical trend for both the groups. In particular, if we use more disaggregated weekly food expenditure

[11] Immigrant households can also be identi ed by the country of birth of household head, as they usually allocate food expenditures. We repeated the entire analysis with that de nition of immigrant households and nd similar results which are available from the authors upon request. However, we presented the results with household member based de nition as we believe that members can indicatievfoedheir conme withfoedhh21(home)-463(coun)29(try)86.e

are presented in Table 3. We see signi cant di erences between those two types of households in some characteristics for all the years, 2013-2015. As a result, in examining the di erences in food expenditure between HFBMs and native households, we employ household xed e ects in our estimation. We further control for some important household characteristics in our models.

[Table 3]

The main set of results from our analysis is presented in Table 4. Column 1 presents the results that use the model in equation (1) but excludes both the variables listed in vector X and the State xed e ects. The results indicate that HFBMs have higher food expenditures in 2013 which increase in 2014 but reduce in 2015. However, as the DD coe cients indicate, HFBMs households' experience a positive impact on food expenditures in both periods, compared to that of their native counterpart.[12]

[Table 4]

As other variables may have a signi cant impact on food expenditure, we now incorporate them into the model. The corresponding results are presented in column 2 of Table 4 which indicate that, in the reference period, there is no signi cant di erence in food expenditure between HFBMs and native households. Also, food expenditure increases in 2014 but reduces in 2015. However, the DD estimates remain largely similar in both speci cations. Among other variables, a positive impact of household size reveals the fact that larger households are likely to spend more.

Next, we add the State xed e ects into model (1) to estimate our nal and preferred speci ca-tion. Our results largely remain unchanged with the modi cation in the speci cation (column 3). In that, while food expenditure increases in 2014, HFBMs' expenditure increases 2.4 percent more in that period compared to the native households. On the other hand, while food expenditure reduces in 2015 (compared to 2013) by 8.5 percent for the native households, it only reduces 4.5 percent for the households with foreign-born members making the overall change 4.0 percent higher for HFBMs. The reasonable F-stats in all cases indicate that our models explain the variation in the dependent variable reasonably well. Thus, the overall result in Table 4 indicates that the devaluation of the Australian dollar increases HFBMs' food expenditure.[13]

[12] All tests are conducted at the 5 percent signi cance level.

[13] We nd similar results when we use per capita food expenditure as the dependent variable in our model. This is due to the control for household xed e ects in our models.

Our ndings are valid only in case we can con rm the parallel trend assumption. One such validation can be done by doing a placebo test e.g., comparing food expenditure between 2012 and 2013 for both groups. Unfortunately, our data are not available earlier than 2013, restricting us to do such tests. Instead, we compare the weekly food expenditure pattern in 2013 for both the HFBMs and native households. Figure 4 plots the food expenditure of both groups together with their non-parametric local linear t. We have also presented the con dence interval of the non-parametric t for the food expenditure of native households. The gure reveals that there is no signi cant di erence between the food expenditures of the two groups. This is particularly so as the local linear t of HFBMs' food expenditure lies completely inside of the 95 percent con dence interval of the local linear t of that for native households. We have also employed a regression-

incomes of HFBMs and native households in Australia. One potential concern of this analysis with income can be the low F-stats for our models which are expected as our income data are reported only in (a total of 21) slabs. We also model income on the previous set of explanatory variables using an ordered logit model and arrive at similar conclusions.[15]

[Table 5]

Another reason for spending more on food by HFBMs can be their expenditure on imported food in a larger proportion, compared to the natives. Cultural and social backgrounds may induce migrant households to consume a larger proportion of imported goods from their country of origin. Since devaluation is likely to put upward pressure on the prices of imported goods, migrant households may end up spending more on food. Since we do not have any information about the imported food items, we examine this case by creating a proxy for imported food items using the commodity group that are inspected and tested by the Department of Agriculture.[16] The group is composed of beverages, cereals, ours and milled products, dairy, eggs, honey, horticulture, meat and seafood.

We use a triple di erence (DDD) model to examine whether there is any di erence in the expenditure pattern on imported goods (non-imported goods are the reference category) in 2014 and 2015 (against 2013) between HFBMs and native households.[17] In that model, the DDD estimate will be positive if expenditures on imported food items increase more for HFBMs.

Table 6 presents the results of our triple di erence model. Column 1 results are from the model that only uses basic DDD set up (and thus excludes State xed e ects and the explanatory variables listed in vector X). The results show a DDD estimate that is insigni cant at any conventional level of signi cance, indicating that over time changes in expenditures on imported goods are similar for both groups of households. Our results remain unchanged as we add other covariates (column 2) and, in addition, State xed e ects (column 3) in the model. In all cases, the high F-stats indicate that our models are reasonably strong. Since the classi cation of imported goods may appear subjective, we examine another categorization in which we make the imported food group by

[15] Results are available from the authors upon request.

[16] For detail, see Table 1 in https://goo.gl/XVFhpc.

[17] The model can be written as $Y_{it} = + Z_{it} + I + Z_{it} \quad I + \sum_{t=2014}^{2015}({}_t D_t + {}_t Z_{it} \quad D_t + + {}_t I \quad D_t + {}_t Z_{it} I \quad D_t) + X_{it} + {}_s + u_{it}$, where, in addition to the notations described earlier, I is a dummy variable taking the value of 1 if the purchased good is imported and 0 otherwise.

using the fact that Thailand, China and Vietnam dominate in the frozen and processed seafood import while China dominates the fruit and vegetable imports to Australia.[18] We again obtain at a conclusion that the prices of imported food items cannot explain higher food expenditure by HFBMs.[19]

[Table 6]

Previous literature has found that, in times of crisis, people may spend more time on searching for better prices and thus can o set the impact of higher food prices.[20] As locals may have more information about the market price of food, they can be more e cient in buying food at cheaper prices. Such behavioral pattern will result in showing a relatively higher food expenditure for the HFBMs. Using the previous DD set up but now using our second analysis sample and price as the dependent variable, we examine whether HFBMs pay higher prices for the food items they purchase.[21] Results from the model are presented in Table 7. Column 1 indicates that HFBMs may pay a higher food price but the coe cient is signi cant only at the 10 percent level of signi cance. The coe cients for the two treatment years 2014 and 2015 indicates that food prices in Australia have increased in 2014 and more so in 2015. However, the DD estimate con rms that both groups experience price increases in the same way.

[Table 7]

Again, we add more control variables in the model. Results in column 2 of Table 7 indicate that, when we control for the household characteristics, HFBMs and native households pay similar prices for food items. Furthermore, prices increase over time but similarly for both groups. Column 3 presents results from our nal model that adds the State xed e ects into the speci cation. Again we observe similar results { while food prices increase on average 2.5 percent in 2014 and 3.0 percent in 2015 (compared to 2013), there are no overtime di erences in the prices paid by HFBMs and native households.[22] The F-stats also remain reasonable in all speci cations. Finally, as mean

[18] See https://goo.gl/Mnvjt4, for detail.

[19] Results are available from the authors upon request.

[20] Households a ected by economic shocks may reduce real food expenditure while maintaining calorie purchase and nutritional quality by adjusting shopping e ort and the characteristics of their shopping baskets (Gri th et al., 2016; Hasan, 2019).

[21] We control for the category xed e ects into the model to net out the di erences in prices across categories.

[22] Against such large depreciation of AU$ between 2013 and 2015, these price increases appear low but not unlikely as, for many countries, retail prices of traded goods are sticky in national currencies (Chen et al., 2018).

price can be a ected by extreme values, we repeated the same analysis with median price and obtain similar results.[23] Overall, our analysis with prices o ers support to reject the hypothesis that HFBMs in Australia pay higher food prices compared to the native households.

Next, we examine whether increases in the purchase of food items are responsible for the higher food expenditure of HFBMs. We again use the previous DD set up but now use the quantity of food consumption as the dependent variable and include the category xed e ects to net out the di erences in the purchase of di erent categories. Results from this analysis are presented in Table 8. Again, column 1 presents results with the basic DD set up. It indicates that HFBMs purchase more food items in 2013 and the food consumption of native households signi cantly reduces in both 2014 and 2015. However, for HFBMs, food consumption increases in 2014 while the reduction in food consumption is much lower in 2015 compared to the natives, resulting in signi cantly positive DD estimates.

[Table 8]

Adding other control variables in the model (column 2) and further adding State xed e ects in the speci cation (column 3) provide similar results. The nal and preferred model indicates that native households consume 2.3 percent less food in the reference period. Their consumption reduces 0.3 percent in 2014 and 7.5 percent in 2015. The DD coe cients indicate that HFBMs purchase 1.5 percent more food items in 2014 and 2.1 percent more in 2015, when we compare theirs over time increase in food purchases with that of the native households. The F-stats in all cases validate our models. Thus we conclude that HFBMs increase their food consumption compared to their native counterpart, as a result of the reduction in the value of the Australian dollar.

We conduct our nal analysis to con rm whether total consumption of HFBMs, compared to that of natives, also increase in 2014 and 2015 against 2013. To do so, we repeat our main analysis in Table 4 with HILDA survey data but now using (log of) total household expenditure as the dependent variable. Results from that analysis, presented in Table 9, are similar to our previous analysis with food expenditure. In column 1, when we use no control other than the basic DD setting, we nd that household expenditures of the natives increase signi cantly in 2014 and insigni cantly in 2015, compared to the reference period. On the other hand, HFBMs has

[23] Results are available from the authors upon request.

higher household expenditures than natives in the reference period that signi cantly increases both

send lower remittances to their country of origin. Lower outward remittances and higher expenditure locally may mean that they substituted home country consumption with that of the host country.[26] Unfortunately, our data or any other Australian household level data we are aware of, do not include information on remittances that restricts us to empirically con rm the fact with microdata. However, we observe this case in the aggregate data, as presented in Figure 3. Since microdata must be congruent with this macroeconomic fact, we argue that this is su cient to con- rm that migrant households increase their expenditure by reducing remittances to their country of origin.

5. Conclusion

We investigated the impact of currency depreciation on the expenditure of households with foreign-born members in Australia. Our investigation revealed that the depreciation of the Australian dollar in 2014 and 2015 increased the food expenditure of immigrant households compared to the native households. Our analysis further revealed that the increased food expenditures by migrants are not due to higher food prices or incomes but for the higher consumption of food items. A similar pattern is also observed in the case of total expenditure.

Our analysis is the rst study to empirically con rm that, the increase in the relative price of consumption (and/or investment) in the home country resulting from the falling exchange rate in the host country, induces migrants to consume more in their destination/host country and less in the country of origin. This indicates that the expenditure and consumption can be a poor measure of welfare for migrant households. This is because, while depreciation of host country currency will always lower migrant households' welfare by reducing their real income, higher consumption relative to their native counterpart may indicate otherwise. With the expectation of more immigrant population around the world, we contribute to the migration literature by highlighting how macroeconomic shocks can a ect natives and non-natives di erently.

[26] Which of course, more than o sets the opposing income e ect.

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Figures and Tables

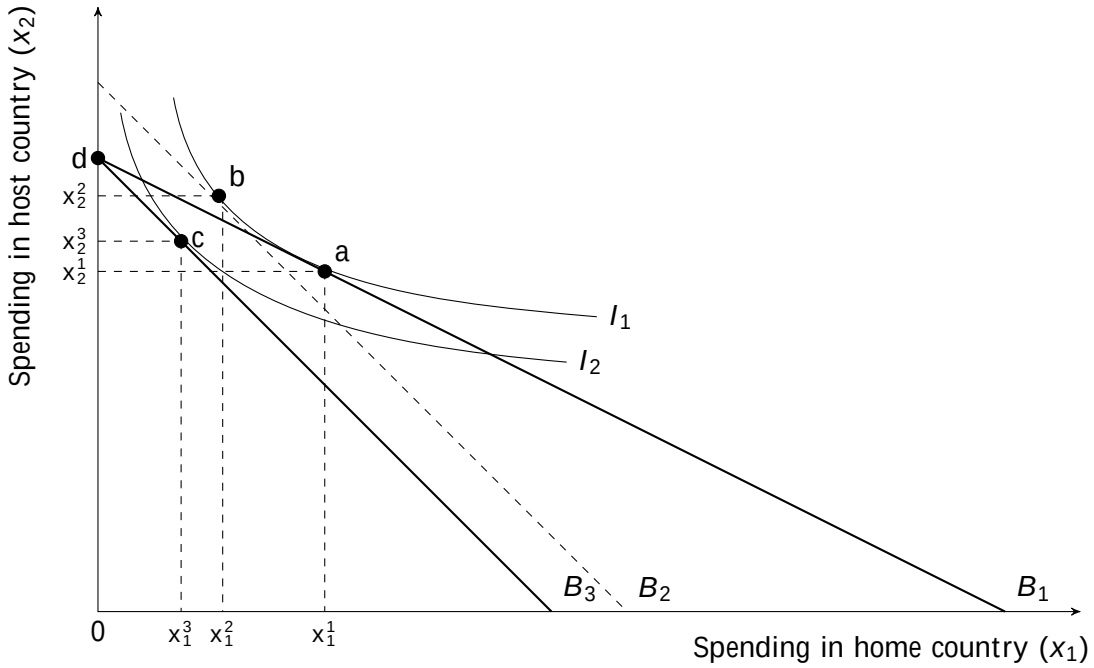
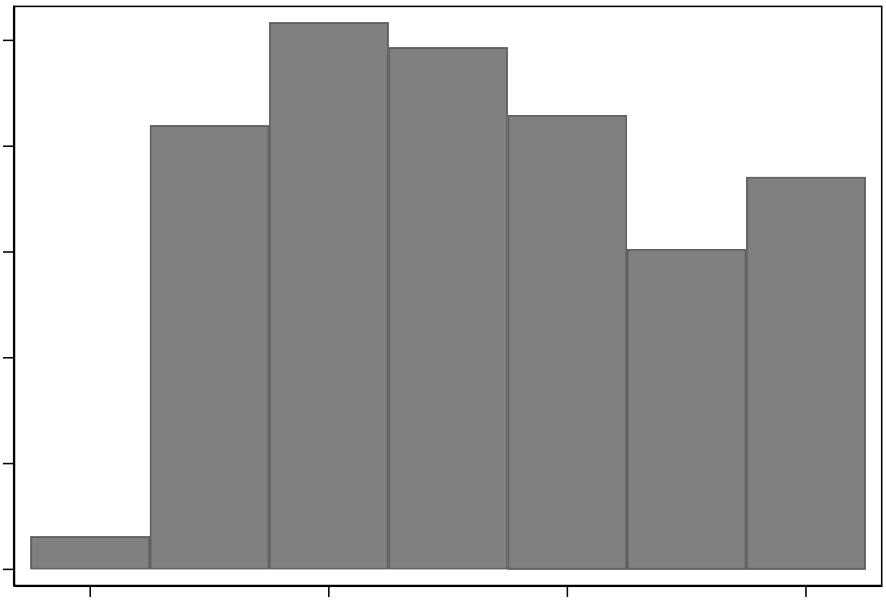


Figure 1: Impact of a host country currency depreciation

Source: Reserve Bank of Australia, Web: https://goo.gl/UH27Pt

Figure 2: Exchange Rate of Australian dollar, 2010-2016



Source: World Bank, Web: https://goo.gl/V5Au26

Figure 3: Migrant Remittance Out ow from Australia, 2010-2016

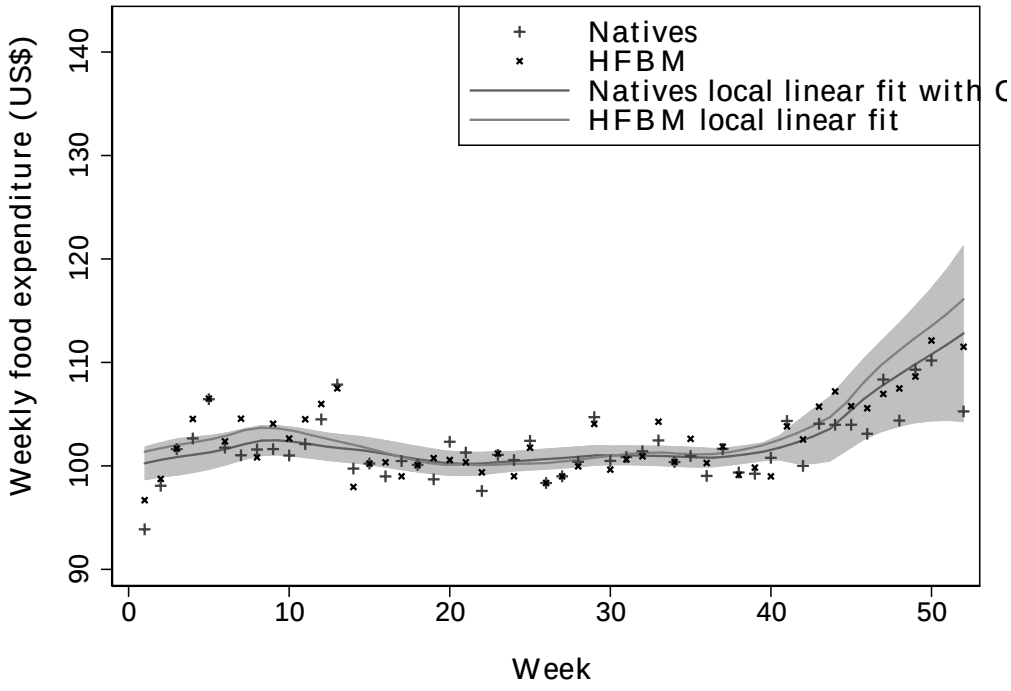


Figure 4: Food expenditure weekly trend by household type in 2013

Table 3: Household characteristics

Variable	2013			2014			2015		
	HFBMs (1)	Natives (2)	*p*-val. (3)	HFBMs (4)	Natives (5)	*p*-val. (6)	HFBMs (7)	Natives (8)	*p*-val. (9)
Household size	2.889 (1.243)	2.647 (1.310)	0.00	2.871 (1.249)	2.635 (1.316)	0.00	2.886 (1.261)	2.639 (1.315)	0.00
Free Standing House	0.773 (0.419)	0.831 (0.375)	0.00	0.776 (0.417)	0.836 (0.370)	0.00	0.780 (0.415)	0.834 (0.372)	0.00
Terrace/townhouse/ villa/semi detached	0.114 (0.318)	0.094 (0.292)	0.01	0.116 (0.320)	0.090 (0.286)	0.00	0.117 (0.321)	0.091 (0.287)	0.00
Low-rise ats/units (2 or 3 storeys)	0.077 (0.266)	0.060 (0.238)	0.00	0.071 (0.256)	0.059 (0.236)	0.05	0.067 (0.250)	0.060 (0.238)	0.24
High rise ats/units (4 or more storeys)	0.031 (0.172)	0.012 (0.107)	0.00	0.031 (0.174)	0.011 (0.106)	0.00	0.031 (0.174)	0.012 (0.109)	0.00
Mobile or improvised dwelling	0.005 (0.069)	0.003 (0.052)	0.13	0.006 (0.077)	0.003 (0.053)	0.04	0.006 (0.074)	0.003 (0.058)	0.15
Owned outright	0.306	0.37d/8(0.37d		[(0.773)-34132(0.01)-218(0.37d			[(0.306)-2478(0.059)-2632(0.00)]T		
Ownewith-333(oas/units)]TJ 0 -11.95r0.306 38500.321) 23500.321)0.005							0.04	0.0600.1140.060	

Table 4: Impact of exchange rate on HFBMs' food expenditure

	(1)	(2)	(3)
HFBMs	0.1314	0.0473	0.0473
	(0.0544)	(0.0569)	(0.0570)
Year 2014	0.0555	0.0557	0.0557
	(0.0053)	(0.0053)	(0.0053)
HFBMs	0.0233	0.0238	0.0238
Year 2014	(0.0099)	(0.0100)	(0.0100)
Year 2015	-0.0845	-0.0849	-0.0849
	(0.0090)	(0.0091)	(0.0091)
HFBMs	0.0395	0.0401	0.0399
Year 2015	(0.0156)	(0.0156)	(0.0156)
Log(household size)		0.1601	0.1588
		(0.0252)	(0.0251)
Terrace/townhouse/		-0.0238	-0.0222
villa/semi detached		(0.0404)	(0.0404)
Low-rise ats/units		0.0360	0.0358
(2 or 3 storeys)		(0.0401)	(0.0399)
High rise ats/units		0.0357	0.0334
(4 or more storeys)		(0.0511)	(0.0517)
Mobile or improvised		0.0100	0.0102
dwelling		(0.1302)	(0.1303)
Owned outright		-0.0074	-0.0074
		(0.0230)	(0.0230)
Owned with a		-0.0217	-0.0246
mortgage		(0.0225)	(0.0225)
Constant	8.0833	7.8734	7.9262
	(0.0180)	(0.0609)	(0.0806)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	24,972	24,972	24,972
F	136.2	23.5	19.4

Notes: 1. All models control for the household xed e ects.
2. Robust standard errors are in parentheses.
3. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Table 5: Impact of exchange rate on HFBMs' income

	(1)	(2)	(3)
HFBMs	0.1359	0.0781	0.0785
	(0.0355)	(0.0366)	(0.0366)
Year 2014	0.0121	0.0132	0.0132
	(0.0037)	(0.0037)	(0.0037)
HFBMs	-0.0063	-0.0057	-0.0059
Year 2014	(0.0064)	(0.0064)	(0.0064)
Year 2015	0.0139	0.0155	0.0156
	(0.0046)	(0.0045)	(0.0045)
HFBMs	-0.0065	-0.0061	-0.0064
Year 2015	(0.0081)	(0.0080)	(0.0080)
Log(household size)		0.1133	0.1131
		(0.0186)	(0.0186)
Terrace/townhouse/		-0.0656	-0.0643
villa/semi detached		(0.0285)	(0.0284)
Low-rise ats/units		-0.0414	-0.0409
(2 or 3 storeys)		(0.0447)	(0.0442)
High rise ats/units		-0.0208	-0.0187
(4 or more storeys)		(0.0380)	(0.0381)
Mobile or improvised		-0.1336	-0.1337
dwelling		(0.1122)	(0.1122)
Owned outright		-0.1074	-0.1067
		(0.0291)	(0.0291)
Owned with a		-0.0464	-0.0487
mortgage		(0.0220)	(0.0219)
Constant	10.9486	10.9253	10.9169
	(0.0119)	(0.0225)	(0.0401)
State xed e ect	No	No	Yes
N	24,972	24,972	24,972
F	5.3	8.2	5.7

Notes: 1. All models control for the household xed e ects.
2. Robust standard errors are in parentheses.
3. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Table 6: Impact of exchange rate on HFBMs' expenditure of imported food

	(1)	(2)	(3)
HFBMs	0.0820	0.0047	0.0050

Table 7: Impact of exchange rate on HFBMs' food price

	(1)	(2)	(3)
HFBMs	0.0094	0.0036	0.0037
	(0.0049)	(0.0050)	(0.0050)
Year 2014	0.0251	0.0249	0.0249
	(0.0007)	(0.0007)	(0.0007)
HFBMs	-0.0010	-0.0009	-0.0009
Year 2014	(0.0013)	(0.0013)	(0.0013)
Year 2015	0.0302	0.0301	0.0301
	(0.0008)	(0.0008)	(0.0008)
HFBMs	-0.0003	-0.0001	-0.0001
Year 2015	(0.0014)	(0.0014)	(0.0014)
Log(household size)		0.0083	0.0080
		(0.0023)	(0.0023)
Terrace/townhouse/		-0.0044	-0.0041
villa/semi detached		(0.0036)	(0.0036)
Low-rise ats/units		-0.0046	-0.0041
(2 or 3 storeys)		(0.0048)	(0.0048)
High rise ats/units		-0.0015	-0.0011
(4 or more storeys)		(0.0076)	(0.0077)
Mobile or improvised		-0.0103	-0.0103
dwelling		(0.0178)	(0.0178)
Owned outright		-0.0042	-0.0041
		(0.0029)	(0.0029)
Owned with a		0.0041	0.0034
mortgage		(0.0025)	(0.0025)
Constant	1.0303	1.0110	1.0246
	(0.0016)	(0.0056)	(0.0073)
Control for incol21y0.tl9o0.tl9o0.tl9o0.tl9o			-0.0042 -0.0041
		(0.06trolc110Cons9550073e938 4531 159.4o	
		0.0036	0.0037

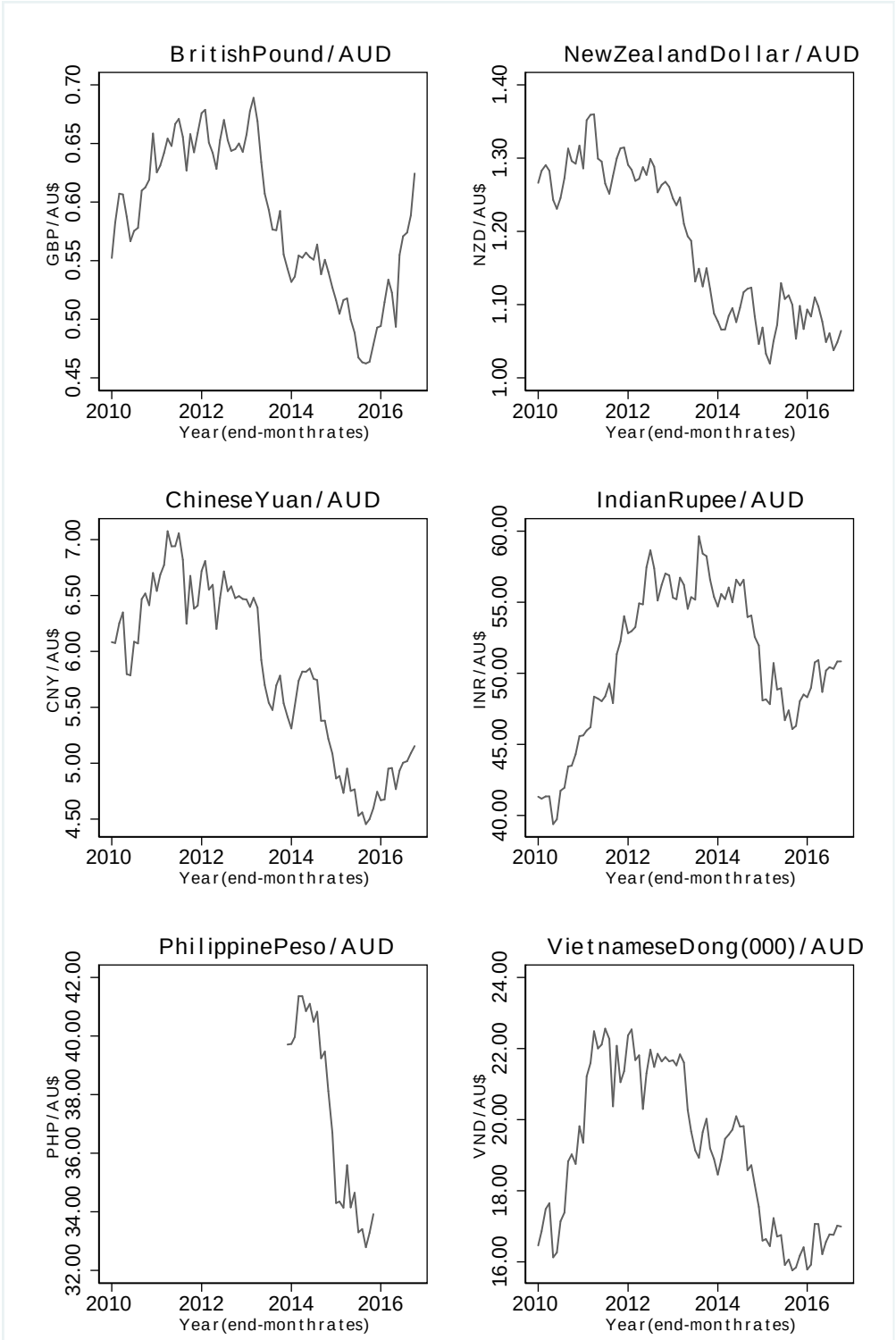
Table 8: Impact of exchange rate on HFBMs' food consumption

	(1)	(2)	(3)
HFBMs	0.0829	0.0223	0.0228
	(0.0111)	(0.0114)	(0.0114)
Year 2014	-0.0033	-0.0027	-0.0027
	(0.0015)	(0.0015)	(0.0015)
HFBMs	0.0152	0.0154	0.0154
Year 2014	(0.0028)	(0.0028)	(0.0028)
Year 2015	-0.0749	-0.0746	-0.0745
	(0.0018)	(0.0018)	(0.0018)
HFBMs	0.0208	0.0211	0.0208
Year 2015	(0.0032)	(0.0032)	(0.0032)
Log(household size)		0.1249	0.1234
		(0.0053)	(0.0052)
Terrace/townhouse/		-0.0237	-0.0224
villa/semi detached		(0.0083)	(0.0083)
Low-rise ats/units		0.0233	0.0241
(2 or 3 storeys)		(0.0105)	(0.0105)
High rise ats/units		0.0456	0.0456
(4 or more storeys)		(0.0162)	(0.0163)
Mobile or improvised		0.0429	0.0431
dwelling		(0.0352)	(0.0352)
Owned outright		-0.0021	-0.0018
		(0.0062)	(0.0062)
Owned with a		-0.0123	-0.0144
mortgage		(0.0055)	(0.0055)
Constant	2.0278	1.8954	1.8986
	(0.0037)	(0.0128)	(0.0169)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	1,598,334	1,598,334	1,598,334
F	670.3	127.4	105.6

Notes: 1. All models control for the household and category xed e ects.
2. Robust standard errors are in parentheses.
3. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Table 9: Impact of exchange rate on HFBMs' total expenditure
(Using HILDA data)

Appendix A: Supplementary figures and tables



Source: Reserve Bank of Australia, Web: https://goo.gl/UH27Pt

Figure A.1: Exchange rate of Australian dollar, 2010-2016

Figure A.2: Distribution of DD coefficients across weeks of 2013

Table A.1: Movement of exchange rates of major currencies against AU$

Years	United States Dollar	British Pound	New Zealand Dollar	Chinese Yuan	Indian Rupee	Philippine Peso	Vietnamese Dong(000)
2010	0.85	0.57	1.23	5.79	39.73	.	16.26
2011	1.07	0.67	1.30	6.94	48.04	.	22.11
2012	1.02	0.65	1.28	6.48	57.46	.	21.30
2013	0.93	0.61	1.19	5.70	55.36	.	19.67
2014	0.94	0.55	1.08	5.85	56.59	41.10	20.10
2015	0.77	0.49	1.13	4.77	48.95	34.65	16.75
2016	0.74	0.55	1.05	4.93	50.19	.	16.56

Source: Reserve Bank of Australia, Web: https://goo.gl/UH27Pt
Notes: 1. End-June rates.

Table A.2: Distribution of households over years

Years available	No of households
All 2013, 2014 & 2015	8,026
Only 2013 &2014	1,032
Only 2013 & 2015	1
Only 2013	1,382
Only 2014 & 2015	1,281
Only 2014	235
Only 2015	1,253

Table A.3: Food categories in the NHPS data

1	Arti cial Sweeteners	65	Frozen Meat and Poultry
2	Asian/japan Cooking Misc.	66	Frozen Pastry
3	Baby Food	67	Frozen Pizza
4	Baby Rusks	68	Frozen Rice
5	Baked Beans and Spaghetti	69	Frozen Snacks
6	Baking Powder	70	Frozen Vegetables
7	Biscuits	71	Fruit Juices and Drinks
8	Bottled and Canned Sauces	72	Gelatine
9	Bread	73	Golden Syrup/treacle/molasses
10	Breadcrumbs/coating and Stu ng	74	Herbs and Spices/curry Pwd/pepp
11	Breakfast Cereals	75	Honey
12	Butter and Margarine	76	Ice Cream
13	Cake Decorations	77	Ice Cream Cones and Wafers
14	Cakes/pies and Pasties Fresh	78	Icings and Marzipan
15	Canned Beans/salads	79	Indian Foods
16	Canned Corned Meats	80	Infant Formulas
17	Canned Fish and Seafood	81	Jam and Marmalade
18	Canned Fruit/fruit Snacks	82	Marinades
19	Canned Hams/franks and Hot Dogs	83	Meat and Fish Pastes
20	Canned Meals	84	Mexican Food
21	Canned Vegetables	85	Milk Additives/tonic Food Drink
22	Carbonated Beverages	86	Milk White Fresh and Longlife
23	Carbonated Fruit Juice	87	Mixes and Batters
24	Cheese	88	Mustard
25	Chewing Gum and Bubble Gum	89	New Age Beverges
26	Chilled Cream	90	Non Carbonated Bev Cordial Syrup
27	Chilled Meals	91	Non Carbonated Mineral Water
28	Chilled Meat and Poultry	92	Oils and Fats
29	Chilled Pasta	93	Packaged and Prepared Meals
30	Chilled Savoury Pastry	94	Pasta/noodles
31	Chilled Seafood	95	Pastry Sheets
32	Chilled Vegetable Protein	96	Pate
33	Chocolate Confectionery	97	Peanut Butter
34	Christmas Confectionery	98	Pickles and Relishes
35	Citric Acid/baking Soda/crm Tar	99	Prepacked Smallgoods
36	Cocoa and Cooking Chocolate	100	Prepared Dips
37	Coconut	101	Processed Milk Products
38	Coconut Crm and Milk	102	Ready Made Custard
39	Co ee	103	Rice
40	Co ee Substitutes	104	Salad Dressings
41	Cooking Wine	105	Salt
42	Dr Ck/pudd/chsck Mixes	106	Sauce and Gravy Mixes
43	Dried Fruit	107	Savoury Spreads
44	Dried Vegetables	108	Shelf Stable Desserts
45	Drink Mixers	109	Snack Foods
46	Drink Whiteners	110	Soup
47	Easter Confectionery	111	Soup Mix and Pulses
48	Eggs	112	Stocks and Flavourings
49	Essences and Colourings	113	Sugar
50	Flavoured Milk	114	Sugar Confectionery
51	Flour	115	Sweet Spreads
52	Fresh Bulk Nuts/dried Fruits	116	Tea
53	Fresh Chilled Soup	117	Tomato Juice
54	Fresh Convenience Produce	118	Tomato Paste and Puree
55	Fresh Fruit	119	Toppings
56	Fresh Herbs and Sprouts	120	Unprocessed and Baking Nuts
57	Fresh Salad Produce	121	Vegetable and Yeast Extracts
58	Fresh Seafood	122	Vegetable Juice
59	Fresh Vegetables	123	Vinegar
60	Frozen Chilled Desserts	124	Whole Pickles
61	Frozen Drinks	125	Wrapped Health Snacks
62	Frozen Fish/seafood	126	Yogurt and Dairy Dessert
63	Frozen Fruit	127	Yogurt Drinks
64	Frozen Meals		

Table A.4: Test of difference in weekly food expenditures between HFBMs and native households in 2013

		(1)	(2)	(3)
HFBMs	week=1	-0.0051	-0.0051	-0.0051
		(0.0286)	(0.0286)	(0.0286)
HFBMs	week=2	-0.0280	-0.0280	-0.0280
		(0.0274)	(0.0274)	(0.0274)
HFBMs	week=3	-0.0332	-0.0332	-0.0332
		(0.0275)	(0.0275)	(0.0275)
HFBMs	week=4	-0.0105	-0.0105	-0.0105
		(0.0274)	(0.0274)	(0.0274)
HFBMs	week=5	-0.0262	-0.0262	-0.0262
		(0.0272)	(0.0272)	(0.0272)
HFBMs	week=6	-0.0213	-0.0213	-0.0213
		(0.0265)	(0.0265)	(0.0265)
HFBMs	week=7	0.0110	0.0110	0.0110
		(0.0270)	(0.0270)	(0.0270)
HFBMs	week=8	-0.0221	-0.0221	-0.0221
		(0.0256)	(0.0256)	(0.0256)
HFBMs	week=9	-0.0022	-0.0022	-0.0022
		(0.0274)	(0.0274)	(0.0274)
HFBMs	week=10	0.0009	0.0009	0.0009
		(0.0263)	(0.0263)	(0.0263)
HFBMs	week=11	-0.0026	-0.0026	-0.0026
		(0.0269)	(0.0269)	(0.0269)
HFBMs	week=12	-0.0254	-0.0254	-0.0254
		(0.0262)	(0.0262)	(0.0262)
HFBMs	week=13	-0.0409	-0.0409	-0.0409
		(0.0282)	(0.0282)	(0.0282)
HFBMs	week=14	-0.0241	-0.0241	-0.0241
		(0.0261)	(0.0261)	(0.0261)
HFBMs	week=15	-0.0100	-0.0100	-0.0100
		(0.0273)	(0.0273)	(0.0273)
HFBMs	week=16	-0.0025	-0.0025	-0.0025
		(0.0263)	(0.0263)	(0.0263)
HFBMs	week=17	-0.0254	-0.0254	-0.0254
		(0.0271)	(0.0271)	(0.0271)
HFBMs	week=18	-0.0169	-0.0169	-0.0169
		(0.0259)	(0.0259)	(0.0259)
HFBMs	week=19	-0.0014	-0.0014	-0.0014
		(0.0274)	(0.0274)	(0.0274)
HFBMs	week=20	-0.0240	-0.0240	-0.0240
		(0.0260)	(0.0260)	(0.0260)
HFBMs	week=21	-0.0300	-0.0300	-0.0300
		(0.0269)	(0.0269)	(0.0269)
HFBMs	week=22	-0.0058	-0.0058	-0.0058
		(0.0262)	(0.0262)	(0.0262)
HFBMs	week=23	-0.0310	-0.0310	-0.0310
		(0.0273)	(0.0273)	(0.0273)
HFBMs	week=24	-0.0519		

week=24

Table A.4: Test of difference in weekly food expenditures between HFBMs and native households in 2013 (Contd.)

		(1)	(2)	(3)
HFBMs	week=31	-0.0120	-0.0120	-0.0120
		(0.0275)	(0.0275)	(0.0275)
HFBMs	week=32	-0.0198	-0.0198	-0.0198
		(0.0263)	(0.0263)	(0.0263)
HFBMs	week=33	-0.0213	-0.0213	-0.0213
		(0.0269)	(0.0269)	(0.0269)
HFBMs	week=34	-0.0215	-0.0215	-0.0215
		(0.0260)	(0.0260)	(0.0260)
HFBMs	week=35	0.0119	0.0119	0.0119
		(0.0273)	(0.0273)	(0.0273)
HFBMs	week=36	0.0009	0.0009	0.0009
		(0.0255)	(0.0255)	(0.0255)
HFBMs	week=37	-0.0176	-0.0176	-0.0176
		(0.0270)	(0.0270)	(0.0270)
HFBMs	week=38	-0.0132	-0.0132	-0.0132
		(0.0260)	(0.0260)	(0.0260)
HFBMs	week=39	-0.0041	-0.0041	-0.0041
		(0.0271)	(0.0271)	(0.0271)
HFBMs	week=40	-0.0310	-0.0310	-0.0310
		(0.0267)	(0.0267)	(0.0267)
HFBMs	week=41	-0.0371	-0.0371	-0.0371
		(0.0269)	(0.0269)	(0.0269)
HFBMs	week=42	0.0137	0.0137	0.0137
		(0.0257)	(0.0257)	(0.0257)
HFBMs	week=43	0.0039	0.0039	0.0039
		(0.0267)	(0.0267)	(0.0267)
HFBMs	week=44	0.0047	0.0047	0.0047
		(0.0255)	(0.0255)	(0.0255)
HFBMs	week=45	-0.0237	-0.0237	-0.0237
		(0.0272)	(0.0272)	(0.0272)
HFBMs	week=46	0.0160	0.0160	0.0160
		(0.0254)	(0.0254)	(0.0254)
HFBMs	week=47	-0.0293	-0.0293	-0.0293
		(0.0268)	(0.0268)	(0.0268)
HFBMs	week=48	0.0095	0.0095	0.0095
		(0.0265)	(0.0265)	(0.0265)
HFBMs	week=49	-0.0070	-0.0070	-0.0070
		(0.0270)	(0.0270)	(0.0270)
HFBMs	week=50	0.0060	0.0060	0.0060
		(0.0263)	(0.0263)	(0.0263)
HFBMs	week=51	0.0083	0.0083	0.0083
		(0.0279)	(0.0279)	(0.0279)
HFBMs	week=52	0.0329	0.0329	0.0329
		(0.0295)	(0.0295)	(0.0295)
State xed e ect		No	No	Yes
Other controls		No	Yes	Yes
N		330,023	330,023	330,023
F		14.1	14.1	14.1

Notes: 1. HFBMs are identi ed by birth country of members.

2. Week 26 is the reference week.

3. Robust standard errors are in parentheses.

4. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Table A.5: Impact of exchange rate on HFBMs' expenditure on food
(with unbalanced panel data)

	(1)	(2)	(3)
HFBMs	0.0996	0.0088	0.0091
	(0.0568)	(0.0597)	(0.0597)
Year 2014	-0.0963	-0.0966	-0.0966
	(0.0085)	(0.0086)	(0.0086)
HFBMs	0.0191	0.0192	0.0192
Year 2014	(0.0152)	(0.0152)	(0.0152)
Year 2015	-0.1125	-0.1138	-0.1139
	(0.0096)	(0.0097)	(0.0097)
HFBMs	0.0401	0.0401	0.0403
Year 2015	(0.0167)	(0.0167)	(0.0167)
Log(household size)		0.1681	0.1662
		(0.0271)	(0.0270)
Terrace/townhouse/		-0.0711	-0.0692

vT0.249 3.615 Td mo(tgan)-312 -3.11
626 T rispea27d [(Y)83(ea267738 T0.249 3
v1d [(-0.0692)]T0/F13 6m5a/se49 662.06 c

For the referees:

Robustness check results

(Not intended for publication)

Appendix B: Results with head based definition

Table B.1: Mean and median food consumption

Table B.3: Household characteristics

Variable	2013			2014			2015		
	HFBMs (1)	Natives (2)	*p*-val. (3)	HFBMs (4)	Natives (5)	*p*-val. (6)	HFBMs (7)	Natives (8)	*p*-val. (9)
Annual household income	77,689	72,582	0.00	79,105	73,471	0.00	79,836	73,766	0.00
	(47,100)	(44,587)		(48,390)	(45,551)		(49,649)	(46,080)	
Free Standing House	0.732	0.835	0.00	0.734	0.840	0.00	0.737	0.839	0.00
	(0.443)	(0.372)		(0.442)	(0.367)		(0.441)	(0.368)	
Terrace/townhouse/ villa/semi detached	0.128	0.093	0.00	0.131	0.089	0.00	0.132	0.090	0.00
	(0.334)	(0.290)		(0.338)	(0.285)		(0.339)	(0.286)	
Low-rise ats/units (2 or 3 storeys)	0.095	0.057	0.00	0.089	0.056	0.00	0.086	0.055	0.00
	(0.293)	(0.232)		(0.285)	(0.230)		(0.281)	(0.229)	
High rise ats/units (4 or more storeys)	0.038	0.012	0.00	0.038	0.012	0.00	0.037	0.013	0.00

Table B.5: Impact of exchange rate on HFBMs' income

	(1)	(2)	(3)
HFBMs	0.1157	0.0652	0.0661
	(0.0509)	(0.0519)	(0.0519)
Year 2014	0.0092	0.0106	0.0106
	(0.0035)	(0.0035)	(0.0035)
HFBMs	0.0025	0.0025	0.0024
Year 2014	(0.0072)	(0.0071)	(0.0072)
Year 2015	0.0107	0.0127	0.0127
	(0.0043)	(0.0042)	(0.0042)
HFBMs	0.0030	0.0029	0.0027
Year 2015	(0.0091)	(0.0090)	(0.0090)
Log(household size)		0.1166	0.1164
		(0.0182)	(0.0182)
Terrace/townhouse/		-0.0663	-0.0650
villa/semi detached		(0.0286)	(0.0285)
Low-rise ats/units		-0.0394	-0.0389
(2 or 3 storeys)		(0.0447)	(0.0442)
High rise ats/units		-0.0228	-0.0206
(4 or more storeys)		(0.0378)	(0.0379)
Mobile or improvised		-0.1340	-0.1340
dwelling		(0.1119)	(0.1119)

Table B.6: Impact of exchange rate on HFBMs' expenditure on imported food

	(1)	(2)	(3)
HFBMs	-0.0164	-0.0871	-0.0885
	(0.0622)	(0.0642)	(0.0639)
Year 2014	0.0304	0.0311	0.0310
	(0.0056)	(0.0056)	(0.0056)
Year 2015	-0.1220	-0.1221	-0.1221
	(0.0091)	(0.0092)	(0.0092)
Imported items	0.7094	0.7094	0.7094
	(0.0063)	(0.0063)	(0.0063)
HFBMs	0.0166	0.0160	0.0159
Year 2014	(0.0128)	(0.0128)	(0.0128)
HFBMs	0.0275	0.0271	0.0265
Year 2015	(0.0188)	(0.0188)	(0.0187)
HFBMs	0.1246	0.1246	0.1246
imported items	(0.0144)	(0.0144)	(0.0144)
Year 2014	-0.0265	-0.0265	-0.0265
imported items	(0.0039)	(0.0039)	(0.0039)
Year 2015	-0.0377	-0.0377	-0.0377
imported items	(0.0049)	(0.0049)	(0.0049)
HFBMs Year 2014	0.0034	0.0034	0.0034
imported items	(0.0092)	(0.0092)	(0.0093)
HFBMs Year 2015	0.0072	0.0072	0.0072
imported items	(0.0112)	(0.0112)	(0.0112)
Log(household size)		0.1622	0.1606
		(0.0258)	(0.0257)
Terrace/townhouse/		-0.0077	-0.0058
villa/semi detached		(0.0440)	(0.0440)
Low-rise ats/units		0.0381	0.0381
(2 or 3 storeys)		(0.0423)	(0.0421)
High rise ats/units		0.0606	0.0587
(4 or more storeys)		(0.0589)	(0.0593)
Mobile or improvised		0.0196	0.0198
dwelling		(0.1520)	(0.1521)
Owned outright		-0.0015	-0.0015
		(0.0251)	(0.0251)
Owned with a		-0.0409	-0.0436
mortgage		(0.0246)	(0.0245)
Constant	6.3438	6.1493	6.1747
	(0.0143)	(0.0624)	(0.0834)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	49,944	49,944	49,944
F	1761.9	512.9	433.6

Notes: 1. HFBMs are identi ed by head's country of birth.
2. All models control for the household xed e ects.
3. Robust standard errors are in parentheses.
4. Number of observations is twice of the main sample as food expenditure is divided into imported and non-imported food categories.
5. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Table B.7: Impact of exchange rate on HFBMs' food price

	(1)	(2)	(3)
HFBMs	0.0026	-0.0023	-0.0021
	(0.0056)	(0.0057)	(0.0057)
Year 2014	0.0246	0.0246	0.0245
	(0.0007)	(0.0007)	(0.0007)
HFBMs	0.0003	0.0003	0.0004
Year 2014	(0.0015)	(0.0015)	(0.0015)
Year 2015	0.0299	0.0299	0.0298
	(0.0007)	(0.0007)	(0.0007)
HFBMs	0.0010	0.0010	0.0011
Year 2015	(0.0016)	(0.0016)	(0.0016)
Log(household size)		0.0088	0.0084
		(0.0023)	(0.0023)
Terrace/townhouse/		-0.0044	-0.0041
villa/semi detached		(0.0036)	(0.0036)
Low-rise ats/units		-0.0045	-0.0039
(2 or 3 storeys)		(0.0048)	(0.0048)
High rise ats/units		-0.0014	-0.0011
(4 or more storeys)		(0.0077)	(0.0077)
Mobile or improvised		-0.0104	-0.0104
dwelling		(0.0178)	(0.0178)
Owned outright		-0.0042	-0.0041
		(0.0029)	(0.0029)
Owned with a		0.0041	0.0034
mortgage		(0.0025)	(0.0025)
Constant	1.0329	1.0122	1.0258
	(0.0013)	(0.0055)	(0.0072)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	1,598,334	1,598,334	1,598,334
F	520.0	84.8	70.7

Notes: 1. HFBMs are identi ed by head's country of birth.

Table B.8: Impact of exchange rate on HFBMs' food consumption

	(1)	(2)	(3)
HFBMs	0.0771	0.0210	0.0204
	(0.0128)	(0.0131)	(0.0131)

Table B.9: Impact of exchange rate on HFBMs' total expenditure
(Using HILDA data)

	(1)	(2)	(3)
HFBMs	0.0041	0.0273	0.0353
	(0.0981)	(0.0951)	(0.0941)
Year 2014	0.0393	0.0367	0.0367
	(0.0063)	(0.0063)	(0.0063)
HFBMs	0.0283	0.0294	0.0292
Year 2014	(0.0132)	(0.0132)	(0.0132)
Year 2015	0.0287	0.0238	0.0240
	(0.0067)	(0.0067)	(0.0067)
HFBMs	0.0058	0.0063	0.0058
Year 2015	(0.0149)	(0.0147)	(0.0147)
Ln(household size)		0.2336	0.2355
		(0.0219)	(0.0219)
Terrace/townhouse/		-0.0323	-0.0308
villa/semi detached		(0.0209)	(0.0209)
Low-rise ats/units		-0.0497	-0.0504
(2 or 3 storeys)		(0.0209)	(0.0209)
High rise ats/units		-0.0487	-0.0481
(4 or more storeys)		(0.0335)	(0.0336)
Mobile or improvised		-0.0915	-0.0826
dwelling		(0.0729)	(0.0726)
Owned outright		0.0792	0.0791
		(0.0235)	(0.0234)
Owned with a		0.0756	0.0752
mortgage		(0.0179)	(0.0179)
Constant	10.2516	10.2994	10.2801
	(0.0228)	(0.1077)	(0.1133)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	19,356	19,356	19,356
F	14.9	12.7	10.3

Notes: 1. All models control for the household xed e ects.
2. Robust standard errors are in parentheses.
3. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Appendix C: With 2013 & 2014 data & member based definition

Table C.1: Mean and median food expenditure

Household type	2013 (1)	2014 (2)	All (3)
Natives			
Mean consumption	4,084	4,258	4,171
Median consumption	3,618	3,783	3,715
N	[5,580]	[5,610]	[11,190]
HFBMs			
Mean consumption	4,063	4,296	4,178
Median consumption	3,628	3,859	3,749
N	[2,744]	[2,714]	[5,458]
All			

Mean4.0633-1756(4,258)-2005(4,171)]TJ 0 -11

Table C.3: Household characteristics

Variable	2013			2014		
	HFBMs (1)	Natives (2)	*p*-value (3)	HFBMs (4)	Natives (5)	*p*-value (6)
Annual household income	79,647	70,787	0.00	80,410	71,946	0.00
	(47,231)	(43,877)		(48,389)	(44,915)	
Free Standing House	0.773	0.831	0.00	0.776	0.836	0.00
	(0.419)	(0.375)		(0.417)	(0.370)	
Terrace/townhouse/ villa/semi detached	0.114	0.094	0.01	0.116	0.090	0.00
	(0.318)	(0.292)		(0.320)	(0.286)	
Low-rise ats/units (2 or 3 storeys)	0.077	0.060	0.00	0.071	0.059	0.05
	(0.266)	(0.238)		(0.256)	(0.236)	
High rise ats/units (4 or more storeys)	0.031	0.012	0.00	0.031	0.011	0.00
	(0.172)	(0.107)		(0.174)	(0.106)	
Mobile or improvised dwelling	0.005	0.003	0.13	0.006	0.003	0.04
	(0.069)	(0.052)		(0.077)	(0.053)	
Owned outright	0.306	0.332	0.02	0.323	0.341	0.11
	(0.461)	(0.471)		(0.468)	(0.474)	
Owned with a mortgage	0.258	0.254	0.73	0.244	0.244	0.99
	(0.438)	(0.436)		(0.430)	(0.430)	
Rented	0.435	0.414	0.07	0.433	0.415	0.12
	(0.496)	(0.493)		(0.496)	(0.493)	
N	2,744	5,580		2,714	5,610	

Notes: 1. HFBMs are identi ed by birth country of members.
2. Standard deviations are in parentheses.
3. p-values indicate the signi cance level of the di erence in means between treatment and control group.

Table C.4: Impact of exchange rate on HFBMs' food expenditure

	(1)	(2)	(3)
HFBMs	0.0916	0.0363	0.0322
	(0.0499)	(0.0532)	(0.0533)
Post	0.0547	0.0553	0.0554

Table C.5: Impact of exchange rate on HFBMs' income

	(1)	(2)	(3)
HFBMs	0.1566	0.1012	0.1009
	(0.0415)	(0.0430)	(0.0431)
Post	0.0122	0.0132	0.0132
	(0.0037)	(0.0037)	(0.0037)
HFBMs Post	-0.0063	-0.0059	-0.0058
	(0.0064)	(0.0063)	(0.0063)
Log(household size)		0.1063	0.1056
		(0.0217)	(0.0217)
Terrace/townhouse/		-0.0376	-0.0347
villa/semi detached		(0.0355)	(0.0357)
Low-rise ats/units		-0.0487	-0.0453
(2 or 3 storeys)		(0.0503)	(0.0507)
High rise ats/units		-0.0224	-0.0188
(4 or more storeys)		(0.0545)	(0.0547)
Mobile or improvised		-0.2593	-0.2594
dwelling		(0.1321)	(0.1322)
Owned outright		-0.0617	-0.0617
		(0.0383)	(0.0384)
Owned with a		-0.0151	-0.0165
mortgage		(0.0274)	(0.0274)
Constant	10.9418	10.8991	10.9445
	(0.0137)	(0.0272)	(0.0499)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes

Table C.7: Impact of exchange rate on HFBMs' food price

	(1)	(2)	(3)
HFBMs	0.0019	-0.0039	-0.0040
	(0.0061)	(0.0063)	(0.0063)
Post	0.0252	0.0251	0.0251
	(0.0007)	(0.0007)	(0.0007)
HFBMs Post	-0.0013	-0.0011	-0.0011
	(0.0013)	(0.0013)	(0.0013)
Log(household size)		0.0058	0.0056
		(0.0032)	(0.0032)
Terrace/townhouse/		0.0014	0.0013
villa/semi detached		(0.0048)	(0.0048)
Low-rise ats/units		0.0058	0.0066
(2 or 3 storeys)		(0.0063)	(0.0063)
High rise ats/units		-0.0005	-0.0000
(4 or more storeys)		(0.0110)	(0.0110)
Mobile or improvised		-0.0132	-0.0130
dwelling		(0.0249)	(0.0249)
Owned outright		-0.0066	-0.0068
		(0.0040)	(0.0040)
Owned with a		0.0003	-0.0008
mortgage		(0.0034)	(0.0034)
Constant	1.0323	1.0091	1.0159
	(0.0020)	(0.0076)	(0.0112)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	1,079,311	1,079,311	1,079,311

Table D.3: Household characteristics

Variable	2013			2014		
	HFBMs (1)	Natives (2)	*p*-value (3)	HFBMs (4)	Natives (5)	*p*-value (6)
Annual household income	77,689	72,582	0.00	79,105	73,471	0.00
	(47,100)	(44,587)		(48,390)	(45,551)	
Free Standing House	0.732	0.835	0.00	0.734	0.840	0.00
	(0.443)	(0.372)		(0.442)	(0.367)	
Terrace/townhouse/ villa/semi detached	0.128	0.093	0.00	0.131	0.089	0.00
	(0.334)	(0.290)		(0.338)	(0.285)	
Low-rise ats/units (2 or 3 storeys)	0.095	0.057	0.00	0.089	0.056	0.00
	(0.293)	(0.232)		(0.285)	(0.230)	
High rise ats/units (4 or more storeys)	0.038	0.012	0.00	0.038	0.012	0.00
	(0.192)	(0.110)		(0.192)	(0.110)	
Mobile or improvised dwelling	0.005	0.003	0.08	0.008	0.003	0.00
	(0.074)	(0.053)		(0.087)	(0.053)	
Owned outright	0.309	0.327	0.14	0.323	0.339	0.21
	(0.462)	(0.469)		(0.468)	(0.473)	
Owned with a mortgage	0.265	0.253	0.31	0.246	0.244	0.89
	(0.441)	(0.435)		(0.431)	(0.430)	
Rented	0.425	0.419	0.66	0.431	0.417	0.28
	(0.494)	(0.493)		(0.495)	(0.493)	
N	1,835	6,489		1,824	6,500	

Notes:

Table D.4: Impact of exchange rate on HFBMs' food expenditure

	(1)	(2)	(3)
HFBMs	-0.0159	-0.0612	-0.0658
	(0.0683)	(0.0706)	(0.0705)
Post	0.0575	0.0585	0.0587
	(0.0050)	(0.0050)	(0.0050)
HFBMs Post	0.0234	0.0242	0.0236
	(0.0113)	(0.0113)	(0.0113)
Log(household size)		0.1029	0.1035
		(0.0255)	(0.0255)
Terrace/townhouse/		-0.0591	-0.0574
villa/semi detached		(0.0480)	(0.0482)
Low-rise ats/units		0.0627	0.0655
(2 or 3 storeys)		(0.0446)	(0.0440)
High rise ats/units		-0.0176	-0.0213
(4 or more storeys)		(0.0651)	(0.0641)
Mobile or improvised		-0.1298	-0.1293
dwelling		(0.2124)	(0.2124)
Owned outright		-0.0520	-0.0536
		(0.0245)	(0.0246)
Owned with a		-0.0183	-0.0213
mortgage		(0.0237)	(0.0236)
Constant	8.1301	7.9488	7.9630
	(0.0150)	(0.0614)	(0.0969)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	16,648	16,648	16,648
F	66.2	8.3	.

Notes: 1. HFBMs are identi ed by head's country of birth.
2. All models control for the household xed e ects.
3. Robust standard errors are in parentheses.
4. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Table D.5: Impact of exchange rate on HFBMs' income

	(1)	(2)	(3)
HFBMs	0.0807	0.0290	0.0283
	(0.0574)	(0.0588)	(0.0589)
Post	0.0093	0.0106	0.0105
	(0.0035)	(0.0034)	(0.0034)
HFBMs Post	0.0019	0.0023	0.0026
	(0.0072)	(0.0071)	(0.0071)
Log(household size)		0.1157	0.1150
		(0.0213)	(0.0214)
Terrace/townhouse/		-0.0383	-0.0353
villa/semi detached		(0.0356)	(0.0359)
Low-rise ats/units		-0.0461	-0.0427
(2 or 3 storeys)		(0.0503)	(0.0506)
High rise ats/units		-0.0250	-0.0213
(4 or more storeys)		(0.0544)	(0.0545)
Mobile or improvised		-0.2606	-0.2608
dwelling		(0.1315)	(0.1315)
Owned outright		-0.0633	-0.0633
		(0.0383)	(0.0383)
Owned with a		-0.0152	-0.0167
mortgage		(0.0275)	(0.0275)
Constant	10.9756	10.9183	10.9639
	(0.0127)	(0.0272)	(0.0499)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	16,648	16,648	16,648
F	4.1	5.4	.

Notes: 1. HFBMs are identi ed by birth country of members.
2. All models control for the household xed e ects.
3. Robust standard errors are in parentheses.
4. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Table D.6: Impact of exchange rate on HFBMs' expenditure on imported food

	(1)	(2)	(3)
HFBMs	-0.0441	-0.0891	-0.0941
	(0.0680)	(0.0705)	(0.0704)
Post	0.0555	0.0565	0.0566
	(0.0053)	(0.0053)	(0.0053)
Imported items	0.3150	0.3150	0.3150
	(0.0046)	(0.0046)	(0.0046)
HFBMs Post	0.0171	0.0179	0.0174
	(0.0119)	(0.0119)	(0.0119)
HFBMs	0.0564	0.0564	0.0564
imported items	(0.0108)	(0.0108)	(0.0108)
Post	0.0037	0.0037	0.0037
imported items	(0.0030)	(0.0030)	(0.0030)
HFBMs post	0.0094	0.0094	0.0094
imported items	(0.0075)	(0.0075)	(0.0075)
Log(household size)		0.1024	0.1029
		(0.0258)	(0.0258)
Terrace/townhouse/		-0.0642	-0.0626
villa/semi detached		(0.0490)	(0.0493)
Low-rise ats/units		0.0521	0.0551
(2 or 3 storeys)		(0.0450)	(0.0444)
High rise ats/units		-0.0130	-0.0169
(4 or more storeys)		(0.0662)	(0.0652)
Mobile or improvised		-0.1527	-0.1521
dwelling		(0.1990)	(0.1990)
Owned outright		-0.0549	-0.0567
		(0.0253)	(0.0254)
Owned with a		-0.0159	-0.0194
mortgage		(0.0240)	(0.0239)
Constant	7.2492	7.0663	7.0809
	(0.0152)	(0.0633)	(0.0974)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	33,296	33,296	33,296
F	1013.8	210.8	.

Notes: 1. HFBMs are identi ed by head's country of birth.
2. All models control for the household xed e ects.
3. Robust standard errors are in parentheses.
4. Number of observations is twice of the main sample as food expenditure is divided into imported and non-imported food categories.
5. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Table D.7: Impact of exchange rate on HFBMs' food price

	(1)	(2)	(3)
HFBMs	0.0060	0.0031	0.0028
	(0.0069)	(0.0070)	(0.0070)
Post	0.0249	0.0248	0.0248
	(0.0007)	(0.0007)	(0.0007)
HFBMs Post	-0.0004	-0.0004	-0.0003
	(0.0015)	(0.0015)	(0.0015)
Log(household size)		0.0051	0.0048
		(0.0031)	(0.0031)
Terrace/townhouse/		0.0014	0.0013
villa/semi detached		(0.0048)	(0.0048)
Low-rise ats/units		0.0058	0.0065
(2 or 3 storeys)		(0.0063)	(0.0063)
High rise ats/units		-0.0005	0.0000
(4 or more storeys)		(0.0110)	(0.0110)
Mobile or improvised		-0.0132	-0.0131
dwelling		(0.0249)	(0.0249)
Owned outright		-0.0066	-0.0068
		(0.0040)	(0.0040)
Owned with a		0.0003	-0.0008
mortgage		(0.0034)	(0.0034)
Constant	1.0317	1.0078	1.0148
	(0.0015)	(0.0076)	(0.0111)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	1,079,311	1,079,311	1,079,311
F	598.0	62.5	51.3

Notes: 1. HFBMs are identi ed by head's country of birth.
2. All models control for the household and category xed effects.
3. Robust standard errors are in parentheses.
4. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Table D.8: Impact of exchange rate on HFBMs' food consumption

	(1)	(2)	(3)
HFBMs	0.0279		

Table D.9: Impact of exchange rate on HFBMs' total expenditure
(Using HILDA data)

	(1)	(2)	(3)
HFBMs	0.2165	0.2258	0.2356
	(0.1152)	(0.1125)	(0.1086)
Post	0.0395	0.0381	0.0380
	(0.0063)	(0.0063)	(0.0063)
HFBMs Post	0.0289	0.0299	0.0298
	(0.0132)	(0.0131)	(0.0131)
Ln(household size)		0.2149	0.2176
		(0.0314)	(0.0314)
Terrace/townhouse/		-0.0061	-0.0057
villa/semi detached		(0.0293)	(0.0293)
Low-rise ats/units		-0.0235	-0.0269
(2 or 3 storeys)		(0.0272)	(0.0273)
High rise ats/units		0.0073	0.0033
(4 or more storeys)		(0.0462)	(0.0462)
Mobile or improvised		-0.0849	-0.0901
dwelling		(0.0754)	(0.0740)
Owned outright		0.0401	0.0413
		(0.0361)	(0.0363)
Owned with a		0.0433	0.0444
mortgage		(0.0279)	(0.0280)
Constant	10.2028	10.3273	10.3731
	(0.0267)	(0.1581)	(0.1644)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	12,904	12,904	12,904
F	25.3	7.2	6.1

Notes: 1. HFBMs are identi ed by head's country of birth.
2. All models control for the household xed e ects.
3. Robust standard errors are in parentheses.
4. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Appendix E: With 2013 & 2015 data & member based definition

Table E.1: Mean and median food consumption

Household type	2013 (1)	2015 (2)	All (3)
Natives			
Mean consumption	4,084	3,999	4,041
Median consumption	3,618	3,568	3,588
N	[5,580]	[5,611]	[11,191]
HFBMs			
Mean consumption	4,063	4,061	4,062
Median consumption	3,628	3,691	3,666
N	[2,744]	[2,713]	[5,457]
All			
Mean consumption	4,077	4,019	4,048
Median consumption	3,623	3,608	3,613
N	[8,324]	[8,324]	[16,648]

Notes: 1. HFBMs are identi ed by birth country of members.
2. Number of observations are in square brackets.

Table E.2: The effect of exchange rate changes

	Household type		
	Natives (1)	HFBMs (2)	Di erence (3)
January-December, 2013	8.147	8.053	-0.094
	(0.008)	(0.017)	(0.017)
	[6,489]	[1,835]	[8,324]
January-December, 2014	8.204	8.138	-0.066
	(0.008)	(0.015)	(0.017)
	[6,500]	[1,824]	[8,324]
2014 2013	0.056	0.084	0.028
	(0.011)	(0.023)	(0.024)
	[12,989]	[3,659]	[16,648]

Note: 1. HFBMs are identi ed by birth country of members.
2. Number of observations are in square brackets.

Table E.3: Household characteristics

Variable	2013			2015		
	HFBMs (1)	Natives (2)	*p*-value (3)	HFBMs (4)	Natives (5)	*p*-value (6)
Annual household income	79,647	70,787	0.00	80,934	72,277	0.00
	(47,231)	(43,877)		(49,223)	(45,548)	
Free Standing House	0.773	0.831	0.00	0.780	0.834	0.00
	(0.419)	(0.375)		(0.415)	(0.372)	
Terrace/townhouse/ villa/semi detached	0.114	0.094	0.01	0.117	0.091	0.00
	(0.318)	(0.292)		(0.321)	(0.287)	
Low-rise ats/units (2 or 3 storeys)	0.077	0.060	0.00	0.067	0.060	0.24
	(0.266)	(0.238)		(0.250)	(0.238)	
High rise ats/units (4 or more storeys)	0.031	0.012	0.00	0.031	0.012	0.00
	(0.172)	(0.107)		(0.174)	(0.109)	
Mobile or improvised dwelling	0.005	0.003	0.13	0.006	0.003	0.15
	(0.069)	(0.052)		(0.074)	(0.058)	
Owned outright	0.306	0.332	0.02	0.336	0.349	0.26
	(0.461)	(0.471)		(0.472)	(0.477)	
Owned with a mortgage	0.258	0.254	0.73	0.234	0.240	0.57
	(0.438)	(0.436)		(0.423)	(0.427)	
Rented	0.435	0.414	0.07	0.430	0.412	0.11
	(0.496)	(0.493)		(0.495)	(0.492)	
N	2,744	5,580		2,713	5,611	

Notes: 1. HFBMs are identi ed by birth country of members.
2. Standard deviations are in parentheses.
3. p-values indicate the signi cance level of the di erence in means between treatment and control group.

Table E.4: Impact of exchange rate on HFBMs' food expenditure

Table E.5: Impact of exchange rate on HFBMs income

	(1)	(2)	(3)
HFBMs	0.1325	0.0612	0.0612
	(0.0399)	(0.0414)	(0.0414)
Post	0.0137	0.0154	0.0155
	(0.0046)	(0.0045)	(0.0045)
HFBMs Post	-0.0061	-0.0057	-0.0062
	(0.0082)	(0.0081)	(0.0081)
Log(household size)		0.1484	0.1486
		(0.0231)	(0.0232)
Terrace/townhouse/		-0.0859	-0.0845

Table E.6: Impact of exchange rate on HFBMs' expenditure on imported food

	(1)	(2)	(3)
HFBMs	0.1612	0.0605	0.0609
	(0.0844)	(0.0877)	(0.0877)
Post	-0.0851	-0.0863	-0.0865
	(0.0096)	(0.0098)	(0.0098)
Imported items	0.3105	0.3105	0.3105
	(0.0050)	(0.0050)	(0.0050)
HFBMs Post	0.0385	0.0393	0.0390
	(0.0164)	(0.0164)	(0.0164)
HFBMs	0.0514	0.0514	0.0514
imported items	(0.0091)	(0.0091)	(0.0091)
Post	-0.0011	-0.0011	-0.0011
imported items	(0.0042)	(0.0042)	(0.0042)
HFBMs post	-0.0013	-0.0013	-0.0013
imported items	(0.0080)	(0.0080)	(0.0080)
Log(household size)		0.2003	0.1992
		(0.0408)	(0.0408)
Terrace/townhouse/		-0.0081	-0.0068
villa/semi detached		(0.0561)	(0.0561)
Low-rise ats/units		0.0300	0.0280
(2 or 3 storeys)		(0.0610)	(0.0613)
High rise ats/units		0.0180	0.0132
(4 or more storeys)		(0.0723)	(0.0731)
Mobile or improvised		0.1489	0.1491
dwelling		(0.1216)	(0.1219)
Owned outright		-0.0053	-0.0052
		(0.0341)	(0.0340)
Owned with a		-0.0441	-0.0474
mortgage		(0.0322)	(0.0323)
Constant	7.1863	6.9776	7.0162
	(0.0279)	(0.0920)	(0.1157)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	33,296	33,296	33,296
F	998.5	208.6	173.2

Notes: 1. HFBMs are identi ed by birth country of members.
2. All models control for the household xed e ects.
3. Robust standard errors are in parentheses.
4. Number of observations is twice of the main sample as food expenditure is divided into imported and non-imported food categories.
5. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Table E.8: Impact of exchange rate on HFBMs' food consumption

	(1)	(2)	(3)
HFBMs	0.0816	0.0060	0.0067
	(0.0148)	(0.0153)	(0.0153)
Post	-0.0733	-0.0730	-0.0729
	(0.0018)	(0.0019)	(0.0019)
HFBMs Post	0.0203	0.0206	0.0203
	(0.0033)	(0.0033)	(0.0033)
Log(household size)		0.1645	0.1629
		(0.0071)	(0.0071)
Terrace/townhouse/		-0.0161	-0.0155
villa/semi detached		(0.0106)	(0.0106)
Low-rise ats/units			

Table E.9: Impact of exchange rate on HFBMs' total expenditure
(Using HILDA data)

	(1)	(2)	(3)
HFBMs	0.0827	-0.0282	-0.0269
	(0.0236)	(0.0244)	(0.0244)
Post	0.0070	0.0033	0.0035
	(0.0090)	(0.0090)	(0.0090)
HFBMs Post	0.0448	0.0393	0.0391
	(0.0125)	(0.0123)	(0.0124)
Ln(household size)		0.2303	0.2297
		(0.0284)	(0.0283)
Terrace/townhouse/		-0.0558	-0.0543
villa/semi detached		(0.0282)	(0.0282)
Low-rise ats/units		-0.0408	-0.0424
(2 or 3 storeys)		(0.0271)	(0.0269)
High rise ats/units		-0.0433	-0.0392
(4 or more storeys)		(0.0437)	(0.0441)
Mobile or improvised		-0.1207	-0.1056
dwelling		(0.1082)	(0.1081)
Owned outright		0.0989	0.0990
		(0.0302)	(0.0302)
Owned with a		0.1010	0.1007
mortgage		(0.0226)	(0.0227)
Constant	10.2097	10.2904	10.2190
	(0.0126)	(0.1353)	(0.1427)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	12,904	12,904	12,904
F	20.5	11.3	9.3

Notes: 1. HFBMs are identi ed by birth country of members.
2. All models control for the household xed e ects.
3. Robust standard errors are in parentheses.
4. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Appendix F: With 2013 & 2015 data & head based definition

Table F.1: Mean and median food consumption

Household type	2013 (1)	2014 (2)	All (3)
Natives			
Mean consumption	4,123	4,054	4,088
Median consumption	3,675	3,641	3,656
N	[6,489]	[6,497]	[12,986]
HFBMs			
Mean consumption	3,913	3,898	3,905
Median consumption	3,390	3,462	3,429
N	[1,835]	[1,827]	[3,662]
All			
Mean consumption	4,077	4,019	4,048
Median consumption	3,623	3,608	3,613
N	[8,324]	[8,324]	[16,648]

Notes: 1. HFBMs are identi ed by head's country of birth.
2. Number of observations are in square brackets.

Table F.2: The effect of exchange rate changes

	Household type		
	natives (1)	HFBMs (2)	Di erence (3)
January-December, 2013	8.147	8.053	-0.094
	(0.008)	(0.017)	(0.017)
	[6,489]	[1,835]	[8,324]
January-December, 2014	8.066	8.012	-0.054
	(0.010)	(0.020)	(0.022)
	[6,497]	[1,827]	[8,324]
2014 2013	-0.081	-0.041	0.040
	(0.013)	(0.026)	(0.028)
	[12,986]	[3,662]	[16,648]

Notes: 1. HFBMs are identi ed by head's country of birth.
2. Number of observations are in square brackets.

Table F.3: Household characteristics

Variable	2013			2014		
	HFBMs (1)	Natives (2)	*p*-value (3)	HFBMs (4)	Natives (5)	*p*-value (6)
Annual household income	77,689 (47,100)	72,582 (44,587)	0.00	79,836 (49,649)	73,766 (46,080)	0.00
Free Standing House	0.732 (0.443)	0.835 (0.372)	0.00	0.737 (0.441)	0.839 (0.368)	0.00
Terrace/townhouse/ -value						

Table F.4: Impact of exchange rate on HFBMs' food expenditure

	(1)	(2)	(3)
HFBMs	0.1118	0.0262	0.0248
	(0.0783)	(0.0808)	(0.0808)
Post	-0.0795	-0.0799	-0.0800
	(0.0084)	(0.0086)	(0.0086)
HFBMs Post	0.0341	0.0337	0.0330
	(0.0178)	(0.0178)	(0.0178)
Log(household size)		0.2122	0.2113
		(0.0393)	(0.0393)
Terrace/townhouse/		-0.0039	-0.0026
villa/semi detached		(0.0554)	(0.0555)
Low-rise ats/units		0.0416	0.0397
(2 or 3 storeys)		(0.0602)	(0.0605)
High rise ats/units		0.0176	0.0128
(4 or more storeys)		(0.0721)	(0.0729)
Mobile or improvised		0.1497	0.1500
dwelling		(0.1260)	(0.1262)
Owned outright		-0.0004	-0.0002
		(0.0338)	(0.0337)
Owned with a		-0.0445	-0.0480
mortgage		(0.0318)	(0.0319)
Constant	8.1019	7.8657	7.9053
	(0.0175)	(0.0887)	(0.1121)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	16,648	16,648	16,648
F	33.5	5.0	4.1

Notes: 1. HFBMs are identi ed by head's country of birth.
2. All models control for the household xed e ects.
3. Robust standard errors are in parentheses.
4. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Table F.5: Impact of exchange rate on HFBMs' income

	(1)	(2)	(3)
HFBMs	0.1009	0.0398	0.0408
	(0.0575)	(0.0587)	(0.0587)
Post	0.0109	0.0130	0.0130
	(0.0043)	(0.0042)	(0.0042)
HFBMs Post	0.0022	0.0020	0.0014
	(0.0091)	(0.0090)	(0.0090)
Log(household size)		0.1516	0.1518
		(0.0225)	(0.0225)
Terrace/townhouse/		-0.0863	-0.0850
villa/semi detached		(0.0315)	(0.0311)
Low-rise ats/units		-0.0496	-0.0541
(2 or 3 storeys)		(0.0494)	(0.0474)
High rise ats/units		-0.0121	-0.0100
(4 or more storeys)		(0.0473)	(0.0474)
Mobile or improvised		-0.1425	-0.1425
dwelling		(0.1621)	(0.1623)
Owned outright		-0.1174	-0.1176
		(0.0309)	(0.0310)
Owned with a		-0.0557	-0.0605
mortgage		(0.0250)	(0.0249)
Constant	10.9712	10.9168	10.8816
	(0.0128)	(0.0267)	(0.0510)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	16,648	16,648	16,648
F	4.1	9.8	6.4

Notes: 1. HFBMs are identi ed by birth country of members.
2. All models control for the household xed e ects.
3. Robust standard errors are in parentheses.
4. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Table F.6: Impact of exchange rate on HFBMs' expenditure on imported food

	(1)	(2)	(3)

Table F.7: Impact of exchange rate on HFBMs' food price

	(1)	(2)	(3)		
HFBMs	-0.0032	-0.0079	-0.0080		
	(0.0073)	(0.0074)	(0.0074)		
Post	0.0298	0.0296	0.0296		
	(0.0007)	(0.0007)	(0.0007)		
HFBMs Post	0.0011	0.0011	0.0013		
	(0.0017)	(0.0017)	(0.0017)		
Log(household size)		0.0094	0.0091		
		(0.0030)	(0.0030)		
Terrace/townhouse/		-0.0077	-0.0076		
villa/semi detached		(0.0045)	(0.0045)		
Low-rise ats/units		-0.0073	-0.0065		
(2 or 3 storeys)		(0.0059)	(0.0060)		
High rise ats/units		0.0033	0.0032		
(4 or more storeys)		(0.0094)	(0.0094)		
Mobile or improvised		-0.0032	-0.0031		
dwelling		(0.0225)	(0.0225)		
Owned outright		-0.0021	-0.0019		
		(0.0035)	(0.0035)		
Owned with a		0.0045	0.0039		
mortgage		(0.0030)	(0.0031)		
Constant	1.0340	1.0167	1.027832	-0.0031	
			dwelling		(0.05I< (0.0

Table F.8: Impact of exchange rate on HFBMs' food consumption

	(1)	(2)	(3)
HFBMs	0.1122	0.0462	0.0464
	(0.0171)	(0.0174)	(0.0174)
Post	-0.0699	-0.0693	-0.0693
	(0.0017)	(0.0017)	(0.0017)
HFBMs Post	0.0139	0.0141	0.0138
	(0.0038)	(0.0038)	(0.0038)
Log(household size)		0.1628	0.1613
		(0.0071)	(0.0071)
Terrace/townhouse/		-0.0161	-0.0155
villa/semi detached		(0.0106)	(0.0106)
Low-rise ats/units		0.0150	0.0165
(2 or 3 storeys)		(0.0139)	(0.0139)
High rise ats/units		0.0528	0.0532
(4 or more storeys)		(0.0211)	(0.0212)
Mobile or improvised		0.1478	0.1481
dwelling		(0.0487)	(0.0487)
Owned outright		-0.0009	-0.0002
		(0.0080)	(0.0080)
Owned with a		-0.0199	-0.0213
mortgage		(0.0071)	(0.0071)
Constant	2.0361	1.8678	1.8643
	(0.0037)	(0.0174)	(0.0224)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	1,057,512	1,057,512	1,057,512
F	667.9	90.5	74.0

Notes: 1. HFBMs are identi ed by head's country of birth.
2. All models control for the household and category xed effects.
3. Robust standard errors are in parentheses.
4. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Table F.9: Impact of exchange rate on HFBMs' total expenditure
(Using HILDA data)

	(1)	(2)	(3)
HFBMs	0.0105	0.0455	0.0550
	(0.1163)	(0.1139)	(0.1130)
Post	0.0285	0.0219	0.0221
	(0.0067)	(0.0067)	(0.0067)
HFBMs Post	0.0068	0.0076	0.0073
	(0.0150)	(0.0147)	(0.0147)
Ln(household size)		0.2298	0.2298
		(0.0254)	(0.0254)
Terrace/townhouse/		-0.0564	-0.0549
villa/semi detached		(0.0281)	(0.0282)
Low-rise ats/units		-0.0423	-0.0438
(2 or 3 storeys)		(0.0270)	(0.0269)
High rise ats/units		-0.0446	-0.0403
(4 or more storeys)		(0.0440)	(0.0443)
Mobile or improvised		-0.1234	-0.1084
dwelling		(0.1094)	(0.1092)
Owned outright		0.0986	0.0988
		(0.0301)	(0.0301)
Owned with a		0.1006	0.1004
mortgage		(0.0226)	(0.0227)
Constant	10.2501	10.2676	10.1931
	(0.0269)	(0.1370)	(0.1442)
Control for income	No	Yes	Yes
State xed e ect	No	No	Yes
N	12,904	12,904	12,904
F	8.3	10.8	8.9

Notes:

Appendix G: Other robustness checks

Table G.1: Impact of exchange rate on HFBMs' income
(dependent variable: income category, model: ordered logit)

	(1)	(2)	(3)
Annual houehold income			
HFBMs	0.3207	0.1542	0.1507
	(0.0401)	(0.0410)	(0.0411)
Year 2014	0.0331	0.0495	0.0498
	(0.0322)	(0.0325)	(0.0324)
HFBMs	-0.0212	-0.0262	-0.0259
Year 2014	(0.0574)	(0.0579)	(0.0579)
Year 2015	0.0362	0.0571	0.0575
	(0.0324)	(0.0325)	(0.0325)
HFBMs	-0.0161	-0.0249	-0.0247
Year 2015	(0.0580)	(0.0582)	(0.0582)
Log(household size)		1.1781	1.1808
		(0.0235)	(0.0235)
Terrace/townhouse/		0.2518	0.2432
villa/semi detached		(0.0390)	(0.0388)
Low-rise ats/units		0.3402	0.3280
(2 or 3 storeys)		(0.0517)	(0.0521)
High rise ats/units		1.0648	1.0515
(4 or more storeys)		(0.0966)	(0.0980)
Mobile or improvised		-0.8571	-0.8644
dwelling		(0.1533)	(0.1522)
Owned outright		-0.9701	-0.9689
		(0.0279)	(0.0279)
Owned with a		-1.1955	-1.1969
mortgage		(0.0295)	(0.0294)
State xed e ect	No	No	Yes
N	24,972	24,972	24,972
Psedo R^2	0.001	0.040	0.041

Notes: 1. HFBMs are identi ed by birth country of members.
2. All models control for the household xed e ects.
3. Robust standard errors are in parentheses.
4. $p < 0.10$, $p < 0.05$, $p < 0.01$.

Table G.2: Impact of exchange rate on HFBMs' food expenditure

	(1)	(2)	(3)
Proportion of foreign born	0.0211	0.0757	0.0788
members in household (PFBMH)	(0.0758)	(0.0714)	(0.0707)
Trade-weighted Index	0.0020	0.0020	0.0020
value of AU$ (TWIAUD)	(0.0003)	(0.0003)	(0.0003)
PFBMH TWIAUD	-0.0010	-0.0010	-0.0010
	(0.0008)	(0.0007)	(0.0007)
Log(household size)		0.1691	0.1681
		(0.0154)	(0.0153)
Terrace/townhouse/		-0.0322	-0.0314
villa/semi detached		(0.0225)	(0.0226)
Low-rise ats/units		0.0126	0.0130
(2 or 3 storeys)		(0.0283)	(0.0283)
High rise ats/units		0.0112	0.0112
(4 or more storeys)		(0.0384)	(0.0385)
Mobile or improvised		0.0243	0.0242
dwelling		(0.0898)	(0.0898)
Owned outright		-0.0081	-0.0078
		(0.0152)	(0.0152)
Owned with a		-0.0116	-0.0134
mortgage		(0.0140)	(0.0139)
Constant	8.1334	7.9237	7.9418
	(0.0224)	(0.0376)	(0.0517)
State xed e ect	No	No	Yes
Other controls	No	Yes	Yes
N	991,060	991,060	991,060
F	19.5	7.7	6.3

Notes: 1. All models control for the household xed e ects.
2. Robust standard errors are in parentheses.
3. $p < 0.10$, $p < 0.05$, $p < 0.01$.