STRUCTURAL PARAMETER ESTIMATION BIAS IN WELFARE EFFECTS OF TAX POLICY

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ABSTRACT

A change in income tax policy can result in welfare loss to households and consequently reduce their consumption level. The government therefore gains benefit from welfare analysis and estimation to investigate the impact of its policy. However, welfare estimates are sensitive to calibrated or estimated parameter values. Significant biases in structural parameter estimates may lead to biases in welfare estimates and subsequently affect policy conclusions. Using a simple RBC model, we investigate the relationship between the bias in welfare cost estimates and the biases in structural parameter estimates and find the bias varies nonlinearly over the parameter space. Furthermore, the bias in welfare estimates depends upon the bias in different calibrated parameter values in very different ways. In our simple model, for example, bias in welfare estimation is increased if we assume too high a depreciation rate of capital or too low a capital share.

Keywords: Welfare Analysis, Welfare Estimates, Income Tax Policy, Structural Parameter Estimation Bias.

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Introduction

Studying the effect on welfare of different policy experiments is an important function of Dynamic Stochastic General Equilibrium (DSGE) models. Such Micro-founded models can be used, for example, to abstractly explain the behaviour of the economy and the effect of alternative policies upon welfare (Judd, 1987; Heer, 2003; Domeji & Heathcote, 2004; Mukoyama, 2010). Policy implications are then based on the estimated welfare cost expressed as a function of estimated structural parameters specified in DSGE models. As a consequence, any bias in structural parameter estimates naturally leads to the bias in welfare cost estimates, in turn leading to potentially misleading policy implications. In this paper, we illustrate the relationship between parameter and welfare cost estimation bias under a simple Real Business Cycle (RBC) framework. We make suggestions on how to calibrate and estimate structural parameters in order to ultimately reduce the bias in welfare cost estimates within this framework.

In previous work, Dolmas (1998), Tallarini (2000) and Lagos and Wright (2005) demonstrate the sensitivity of welfare estimates to structural parameter values in DSGE models. They show that welfare cost estimates can be varied substantially according to choices of parameter values specified in the model. However, they do not take parameter uncertainty into consideration. Levin, et al. (2006) and Pablo (2007) study the role of parameter uncertainty upon welfare analysis using a Bayesian approach. They estimate the posterior distribution of welfare cost to study the effect of parameter uncertainty on the estimated welfare cost of inflation. The results suggest that parameter uncertainty has a significant effect on the welfare estimates and can lead to the possibility of unreasonable or misleading results. In this paper, our contribution is to show how the biases in structural parameter estimates affect the bias in welfare cost estimates. Unlike Dolmas (1998), Tallarini (2000) and Lagos and Wright (2005), we do not assume all the parameters are known and, in contrast to Levin et al. (2006) and Pablo (2007), we consider the role of estimation bias upon welfare analysis rather than the role of parameter uncertainty.

In the case of a simple RBC framework, the structural parameters influencing households' intratemporal decisions, such as the utility of leisure, capital share and depreciation rate of capital, play an important role in quantifying the welfare of households. Hence, estimating these parameters raises concerns for policy makers, especially when these parameters
are converted into other quantities of interest such as welfare cost of alternative fiscal policies. The current challenges in the estimation of DSGE models and consequences to the structural parameter estimation have been discussed in detail by Schorfheide (2011). Other studies which examine related problems include Canova and Sala (2009) who consider identification issues and Ruge-Murcia (2007) discuss small sample properties. In this paper, we therefore set our model specification to explore the impact from small sample bias and parameter identification problems of key structural parameters to welfare cost estimation.

We estimate structural parameters in a simple RBC model using Maximum Likelihood Estimation (MLE) with artificial data sets and carry out a quantitative analysis of the welfare cost of fiscal policy changes. We design Monte Carlo experiments to compute the bias in estimation of both structural parameters and welfare costs under different fiscal schemes. In our policy experiments, we take the estimated RBC model as a representation of the economy and consider alternative values of the income tax rate to explore the impact of different fiscal policies upon welfare. To avoid the dependency of welfare cost estimates on the functional form of utility and any model misspecification, we assume we know true functional forms of both utility and trend specification in the model. Finally, we estimate Response Profiles to evaluate how the impact of structural parameter estimation bias on welfare changes over the parameter space and across alternative tax policies.

From the Response Profiles of bias in welfare cost estimates expressed as functions of biases in structural parameter estimators, we can make a number of conclusions. First, this relationship is not linear and the bias in welfare cost estimates responds very differently to the bias of different structural parameter estimates. For example, calibrating too high a depreciation rate of capital, and thus introducing a positive bias in this parameter, creates a large negative bias in welfare estimates. On the other hand, the bias in welfare estimates is relatively small specified in the model. A stochastic process which propagates a shock over time (i.e. AR(1) process in growth rates) will introduce a high cost associated with the elimination of the fluctuations in consumption.

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1 This is important as Otrok (2001) states that the welfare cost can be made as large as one wishes by changing the functional form of utility. Wincoop (1999) investigates alternative stochastic endowment processes and finds that the welfare estimates also depend on the stochastic process.
when we calibrate too high a capital share. Second, the identification of the key structural parameters is important. Due to the complexity and nonlinearity of the state space representation of the underlying DSGE model, not all the structural parameters are generally identified. As macroeconomists face a problem of parameter identification, they tend to calibrate or fix some parameters by, for example, using micro-evidence or a priori selection while estimating the rest. However, calibrating a value of a parameter too far from the unknown true value leads to a serious bias in other remaining parameter estimators and, more importantly, in welfare cost estimates. In our model, the capital share and the depreciation rate of capital are partially identified. Thus we have the choice to calibrate one and estimate the other. This choice, it turns out, matters for the bias in welfare cost estimates. Finally, the structural parameter estimation bias exacerbates the bias in welfare cost estimates due to the nonlinearity in the welfare cost function. Thus bias in structural parameter estimates subsequently leads to a reduction in the accuracy of estimated welfare cost and mislead policy advices. In this particular exercise, we find that calibrating the depreciation rate of capital too high, or the capital share too low, leads to a larger bias in welfare estimates. As a result, we can reduce the bias in welfare cost estimates by calibrating the depreciation rate of capital in a range of low values, or the capital share in a range of high values.

### A Real Business Cycle Model

The purpose of this study is to illustrate the potential bias in structural parameter estimates induced by the small sample bias and parameter identification problem. To maintain a tractable analysis, as a result, we consider a standard and small-sized RBC model that is a simple variation of Hansen (1985) as the Data Generating Process (DGP) used in our experiments.

The problem of the households can be written as follows.

\[
\max E_0 \sum_{t=0}^{\infty} \beta^t \{ U(C_t) + B_t A(1 - H_t) \}
\]

subject to

\[
C_t + I_t = (1 - \tau)(R_t K_t + W_t H_t) \tag{1}
\]
\[
I_t = K_{t+1} - (1 - \delta)K_t \tag{2}
\]
\[
\ln(B_{t+1}) = \rho_B \ln(B_t) + \epsilon_{B,t+1} \tag{3}
\]

where \(\beta \in (0,1)\) is a discount factor, \(A > 0\) is a utility of one unit of leisure, \(\delta \in (0,1)\) is a depreciation rate of capital and \(B_t\) is a stationary AR(1) exogenous process of the
preference shock governed by a measure of a persistence $\rho_B$ and a Gaussian shock $\epsilon_{B,t} \sim N(0, \sigma_B^2)$.

Households in this economy optimise their expected discounted life-time utility by choosing each period consumption ($C_t$), hours worked ($H_t$) and next-period capital holding ($K_{t+1}$) subject to their budget constraint (1), a capital accumulation equation (2) and a stationary AR(1) exogenous process of the preference shock ($B_t$) to households' labor supply (3). The endowment of time is normalised to be 1 which can be taken as leisure ($1 - H_t$) or used as hours worked ($H_t$). The sources of income for households are from supplying capital and labour services to the firms. Income in this setting is taxed at the rate of $\tau$. The after-tax income can then be either consumed or invested. Let $I_t$ be investment, $R_t$ be the rental rate of capital and $W_t$ be the wage rate at period $t$.

The values of the structural parameters specified in this problem govern the decision of the households. The discount factor ($\beta$) influences the intertemporal trade-off between the consumption this period and the consumption next period. A low discount factor implies that the future consumption is highly discounted and households prefer consuming more today. The intratemporal decisions, on the other hand, are governed by the utility of leisure ($A$) and the depreciation rate of capital ($\delta$). The utility of leisure affects the trade-off between the consumption and the leisure this period, while the depreciation rate of capital ($\delta$) governs how households allocate their after-tax income between the consumption and capital holdings. When the depreciation rate is low, households have more incentive to invest in long-lived capital goods and allocate less of their after-tax income to consumption goods. As we assume the preference persistence ($\rho_B$) is between 0 and 1, the preference shock to households' labor supply is transitory.

Tax revenue collected from households is used to finance exogenous government spending in which the government budget constraint is given by

$$\tau(R_tK_t + W_tH_t) = G_t$$

We can write the problem for firms as

$$\max \{Y_t - R_tK_t - W_tH_t\}$$

subject to

$$Y_t = K^\alpha_t (Z_tH_t)^{1-\alpha}$$

$$\ln(Z_{t+1}) = \rho_Z \ln(Z_t) + \epsilon_{Z,t+1}$$

where $\alpha \in (0,1)$ is a capital share and $Z_t$ is a stationary AR(1) exogenous process of the technology shock governed by a measure of
a persistence $\rho_Z$ and a Gaussian shock $\epsilon_{Z,t} \sim N(0, \sigma_Z^2)$.

The firms maximise their profit subject to the labor-augmenting Cobb-Douglas production function using capital and labor as inputs (4) and a stationary AR(1) technology ($Z_t$) process (5). Here the revenue is obtained by selling goods, denoted by $Y_t$, to the households while the costs are incurred from renting households' capital and labor services. In this problem, the capital share ($\alpha$) represents the share of total output paid to capital services. The technology shock to the production function is assumed to be transitory as the technology persistence ($\rho_Z$) is set between 0 and 1.

The First Order Conditions (FOCs) for households’ utility maximisation and firms’ profit maximisation problems are as follows.

$$U'(C_t)\equiv \beta \mathbb{E}_t[U'(C_{t+1})((1-\tau)R_{t+1} + 1 - \delta)]$$

$$U'(C_t) = \frac{B_tA}{(1-\tau)W_t}$$

$$R_t = \alpha K_t^{\alpha-1}(z_tH_t)^{1-\alpha}$$

$$W_t = (1-\alpha)z_t^{1-\alpha}K_t^\alpha H_t^{-\alpha}$$

These necessary conditions characterise the equilibrium decision rules for the households and firms. Equation (6) is an Euler equation for consumption stating that the marginal rate of substitution between the consumption at period $t$ and the consumption at period $t+1$ equals the after-tax return of capital. Equation (7) is a labor supply equation stating that the marginal rate of substitution between consumption and leisure must equal to the after-tax wage rate. Equations (8) and (9) come from the firms’ problem implying that the rental rate of capital and wage rate are set equal to the marginal productivity of an additional capital and labor respectively.

In the equilibrium, households will choose allocations of $\{C_t, H_t, K_{t+1}\}_{t=0}^{\infty}$ whereas firms will choose allocations of $\{K_t, H_t\}_{t=0}^{\infty}$ such that, given a sequence of prices $\{W_t, R_t\}_{t=0}^{\infty}$ and a tax policy $\{\tau\}$, households and firms optimise their utility and profit respectively, government’s budget constrain is satisfied and all markets clear, or equivalently in equilibrium such that $Y_t = C_t + I_t + G_t$.

We define $\Omega \equiv \{\rho_Z, \sigma_Z, \rho_B, \sigma_B, \beta, A, \alpha, \delta\}$ as a set of structural parameters. We then have all steady-state variables as a function of structural parameters and the tax policy; $C_*(\Omega; \tau)$, $H_*(\Omega; \tau)$, $K_*(\Omega; \tau), H_*(\Omega; \tau)$. By deriving a state-
space representation from FOCs, the model can then be estimated using the Maximum Likelihood Estimation (MLE). We denote a set of estimated structural parameters as $\tilde{\Omega}$.

**Welfare Cost Calculation**

Given the estimated RBC model, we compute the deterministic welfare cost estimate by calculating how much consumption in the steady state households are willing to give up in order to be indifferent between two economies with different levels of income tax rate. This is the well-known concept of compensation variation.

At the income tax rate of $\tau_*$, we can write the expected life-time welfare of households at the steady state as

$$(1 - \hat{\beta})W(\tilde{\Omega}; \tau_*) = U\left(C_* (\tilde{\Omega}; \tau_*)\right) + \hat{\lambda}(1 - H_* (\tilde{\Omega}; \tau_*)).$$

If there is a deviation in the income tax rate from $\tau_*$ to $\tau$, households’ consumption at the steady state changes by a factor $\Delta$ of the initial consumption level and hours worked reaches a new steady-state level, denoted by $H_s (\tilde{\Omega}; \tau)$. The expected life-time welfare of households under this new tax policy can be written as

$$(1 - \hat{\beta})W_{\Delta}(\tilde{\Omega}; \tau) = U\left(C_* (\tilde{\Omega}; \tau_*)\Delta\right) + \hat{\lambda}(1 - H_s (\tilde{\Omega}; \tau)).$$

We measure the welfare cost of a change in the income tax rate as the value of $\Delta$ which solves $W(\tilde{\Omega}; \tau_*) = W_{\Delta}(\tilde{\Omega}; \tau)$. The property of the deterministic welfare cost is illustrated in Figure 1 and we can interpret the value of $\Delta$ as follows. When there is a decrease in the income tax rate from $\tau_*$ to $\tau$ ($\tau_* > \tau$), households benefit from this policy change and are willing to give up $1 - \Delta$ percent of their initial consumption to stay under this policy. On the other hand, if there is an increase in the income tax rate ($\tau_* < \tau$), households suffer from a welfare loss and require compensation of $1 - \Delta$ of their initial consumption to stay under the new tax rate.

By solving for the analytical solution for the welfare cost estimate, we obtain

$$W_{\Delta}(\tilde{\Omega}; \tau) = e^{\alpha \Delta \hat{\beta}}$$

$$\Delta(\tilde{\Omega}; \tau_*, \tau) = \exp \left\{ \frac{\nu(1 - \hat{\alpha})(\tau_* - \tau)}{(\nu - (1 - \tau)\kappa)(\nu - (1 - \tau_*)\kappa)} \right\}$$

where $\kappa = \hat{\alpha} \hat{\delta} \hat{\beta}$ and $\nu = 1 - \hat{\beta} + \hat{\beta} \hat{\delta}$. 


Here the welfare cost estimate is expressed as a nonlinear function of estimated structural parameters and the two income tax rates of interest. Hence, the magnitude of estimated welfare cost depends on the values of these structural parameter estimates. Intuitively, for example, when the depreciation rate is high, households have less incentive to invest in short-lived capital goods and allocate more of their after-tax income to consumption goods. Any change in the income tax rate therefore changes consumption levels more than the one when the depreciation rate is high. In this situation, the changes in consumption are costly and imply a larger welfare cost of fiscal policy. This is similar to the case when the capital share is low as households have less incentive to invest in low-return capital goods. Any bias in structural parameter estimates may therefore induce the bias in welfare cost estimate and impact the results of policy experiments.

Notes: The baseline fiscal policy is $\tau_\star = 30\%$.

Fig. 1: Welfare Cost of a Variation in Income Tax Rates ($\tau$)

**Estimation Issues**

Canova and Sala (2009) and Schorfheide (2011) consider the difficulties in the estimation routine of DSGE models and the consequences for parameter estimation. As the welfare cost estimates are sensitive to the values of estimated structural parameters, the estimation issues have important implications for welfare analysis. In this paper, we investigate the importance of small sample bias and parameter identification for welfare analysis. We do not consider the issue of misspecification and failure in shock identification as we assume that the estimated model is the same as the true model we use to generate the artificial data.
set. To fix ideas, we provide a few comments on these estimation issues below.

**Small Sample Biases.** Data sets typically used in macroeconomics tend to be relatively small. Even when using consistent estimators, sample sizes are often too small for the estimators to be a useful approximation of the asymptotic estimators.

**Parameter Identification Problem.** DSGE Models tend to suffer from parameter identification issues that cause a reduction in our ability to draw inference about key structural parameters specified in the model. Kim (2003), Beyer and Farmer (2004) and Iskrev (2010), for example, provide cases of the unidentified DSGE models. There are many sources of parameter nonidentification which can be defined as follows. Observational equivalence occurs when two (or more) values of the parameters, $\Omega$ and $\Omega^*$, give the same likelihood value for all data sets. That is, $L(\Omega) = L(\Omega^*)$ for all $y$. One example of observational equivalence is when some structural parameters are separable unrecoverable. By simultaneously changing these parameters by the right amount, the likelihood function is roughly unchanged and has the same height across some range of the parameter values. We refer these parameters as partially identified parameters. In addition, as the solution to the DSGE models tend to be in a log-linearised form, some structural parameters may disappear from the solution. The likelihood function in this case is noninformative over these parameters. As a result, the parameters are not identified and the parameter values cannot be estimated from the likelihood maximisation routine without any additional information.

**Monte Carlo Experiments**

We design Monte Carlo experiments to examine the implications of estimation issues in DSGE models and approximate the size of biases of the structural parameter and welfare cost estimation. The Monte Carlo experiments is as follows. Given the framework defined in Section 2, we have $\Omega \equiv \{\rho_z, \sigma_z, \rho_B, \sigma_B, \beta, A, \alpha, \delta\}$ as a set of true structural parameters. As the deterministic welfare cost estimate is derived as a function of behavioural parameter estimates, our focus in this paper is then on the group of parameters governing agents’ behavior and the ones that suffer from identification issues and, in turn, are difficult to estimate. This group contains the utility of leisure ($A$), the capital share ($\alpha$) and the depreciation rate of capital ($\delta$). The range of true structural parameter values we consider for the DGP is as follows. We investigate a
sensible range of the capital share \( \alpha \in [0.2,0.4] \) and the depreciation rate of capital \( \delta \in [0.005,0.05] \) in which cover common calibrated and estimated values in the literature. We then fix the remaining parameters as \( A = 3, \beta = 0.99, \rho_{Z} = 0.95, \sigma_{Z} = 0.007, \rho_{B} = 0.8 \) and \( \sigma_{B} = 0.007 \).

Denote a set of true parameter values in an experiment \( i = \{1,2,\ldots,M\} \) by \( \Omega^{i} \). For each value of \( \Omega^{i} \), we compute the true welfare cost, denoted by \( 1 - \Delta(\Omega^{i}; \tau^{*}, \tau) \), when there is a change in the income tax rate \( \tau = \{10\%, 20\%, 30\%, 40\%, 50\%\} \) with the baseline fiscal policy of \( \tau^{*} = 30\% \). Next, given a set of true parameter values \( \Omega^{i} \), we generate a data set of \( y_{t} \equiv \{C_{t}(\Omega^{i}), H_{t}(\Omega^{i})\}_{t=1}^{T} \) and estimate the structural parameters \( \hat{\Omega}^{i} \) via MLE. We replicate this process \( N \) times.

To explore the impact of small sample biases, we simulate the artificial data sets with a different sample size of \( T = \{100, 200, 1000\} \), which are equivalent to 25-, 50- and 250-years of quarterly data. The problem of parameter identification under this framework can be seen through the relationship between the capital share and the depreciation rate where they are only partially identifiable. One way to solve the partial identification issue is to fix or calibrate one of the parameters and estimate others. We thus question how we should fix one of the parameters and how sensitive other related estimates, especially welfare cost estimate, are to the values of this fixed parameter. In reality, even if we as econometricians may assume the knowledge of the structure of the DGP, not being able to precisely calibrate/parameterise additional parameters like the capital share and/or a depreciation rate in this example results in varying degrees of estimation bias. To incorporate the problem into our analysis, we consider two cases. First, we fix \( \delta^{i} \) at a value in \( [0.005,0.05] \) and estimate \( \hat{\Omega}^{i} \equiv \{\hat{A}^{i}, \hat{\alpha}^{i}\} \). We will refer this case as the \( \delta \)-Parameterised case. By considering a range of values of the depreciation rate, we can investigate the sensitivity of the estimated parameters to the fixed parameter. In the second approach, we fix \( \alpha^{i} \) at a value in \( [0.2,0.4] \) and estimate \( \hat{\Omega}^{i} \equiv \{\hat{A}^{i}, \hat{\delta}^{i}\} \). We will refer this case as the \( \alpha \)-Parameterised case. The biases in structural parameter estimates in these two cases are then induced by setting the fixed parameter value higher or lower than the true value as can happen in empirical applications.

After obtaining the estimates of structural parameters, we calculate the estimated welfare cost, denoted by
1 − Δ(Ω̂_j^i; τ_*, τ). of each replication \( j \) and each experiment \( i \). The bias is defined as the difference between the estimated value and the true value. For example, the bias in the structural parameter estimate for a replication \( j \) in an experiment \( i \) is \( B_j^i = \Omegâ_j^i - Ω^i \). For each experiment \( i \), we also compute the mean bias which is defined as \( MB^i = \frac{1}{N} \sum_{j=1}^{N} B_j^i \) and use this statistic in the Response Profiles discussed in the next section.

**Response Profile Estimation**

We estimate the Response Profiles of the bias in welfare cost estimate to summarise the results of Monte Carlo experiments and examine the relationship between the biases in structural parameter and welfare cost estimates. Details on alternative applications of Response Profiles can be found in Hendry (1984) and Davidson and MacKinnon (1993).

By treating the result of each Monte Carlo experiment as a single observation, we can estimate the true response function by some low order polynomial function, \( Ψ(\cdot) \). Each experiment is replicated \( N \) times and we use mean bias \( MB^i \) as the estimator of a bias in each experiment. By including simulation results of all tax policies we consider, we have 4,000 observations. Note that we estimate the Response Profiles separately for the estimation results from the \( δ \)-Parameterised case and the \( α \)-Parameterised case. The dependent variable in the Response Profile is the mean bias of welfare cost estimates \( MB_W^i \) and the explanatory variables are the mean biases of structural parameter estimates: a utility of one unit of leisure \( MB_λ^i \), a capital share \( MB_α^i \) and a depreciation rate of capital \( MB_δ^i \). We include up to a third degree of polynomial for all explanatory variables to allow for a flexibility in the Response Profiles function. We also introduce dummy variables \( \{d, dp_1, dp_2, dp_3, dp_4\} \) into the regression to capture interesting features of the Response Profiles. The dummy variable \( d \) takes the value of 1 if the mean bias of welfare cost estimates is negative and takes value of 0 otherwise. This dummy variable allows us to capture any asymmetric response of the bias in welfare cost estimates to the biases in structural parameter estimates. That is, we found that the bias in structural parameter estimates of the same magnitude with opposite signs result in quantitatively different impacts upon the bias in welfare cost estimate. The remaining dummy variables, \( \{dp_1, dp_2, dp_3, dp_4\} \), are assigned to each tax policy to capture the possibility of
the change in responses of bias in welfare cost estimate across all tax policies.

Finally, we are tentatively led to the following general specification of the form, $\Psi(MB^i_A, MB^i_\alpha, MB^i_\delta)$. The coefficients corresponding to each explanatory variable in the fitted equation can be estimated by Ordinary Least Squares.

$$MB^i_W = \Psi(MB^i_A, MB^i_\alpha, MB^i_\delta)$$

$$= \sum_{j=1}^{4} dp_j \left\{ \mu_j + \sum_{i=1}^{3} \theta_{j,i} MB^i_A + \sum_{i=1}^{3} \theta_{j,i+3} MB^i_\alpha + \sum_{i=1}^{3} \theta_{j,i+6} MB^i_\delta + d \left( \mu_{j,0} + \sum_{i=1}^{3} \theta_{j,0i} MB^i_A + \sum_{i=1}^{3} \theta_{j,0i+3} MB^i_\alpha + \sum_{i=1}^{3} \theta_{j,0i+6} MB^i_\delta \right) \right\}$$

where

$$d = 1 \text{ if } MB^i_W < 0$$

$$dp_1 = 1 \text{ if } \Delta\tau = -20\%$$

$$dp_2 = 1 \text{ if } \Delta\tau = -10\%$$

$$dp_3 = 1 \text{ if } \Delta\tau = +10\%$$

$$dp_4 = 1 \text{ if } \Delta\tau = +20\%$$

and equal to zero otherwise.

We use Bayesian Information Criterion (BIC) to select the specification as this measures the relative goodness of fit of the response function while also penalizing over parameterisation. After estimating several different models, we choose the one which minimizes BIC.

Given the estimated Response Profiles, we can obtain useful information on the relationship between the structural parameter and welfare cost estimation biases. The slopes of the estimated Response Profiles help us identify which structural parameter estimation bias induces the most impact to the bias in welfare cost estimate, assuming other biases in structural parameters are constant. Moreover, the gradient of the estimated Response Profiles represents the steepness and direction of the slope. The magnitude of the gradient provides how fast the bias in welfare cost estimate increases in the direction. We can use this representation to identify the portion of parameterised parameter space that induce the least impact to the bias in welfare cost estimate.
Results and Discussion

This section begins with a discussion of the impact of small sample bias on the bias in welfare cost estimates. We then concentrate our analysis to the impact of parameter identification issues. Finally, we make suggestions on how to calibrate and estimate structural parameters given this framework to reduce the bias in welfare cost estimate. Note that we focus our analysis on the experiments of the $\delta$-Parameterised case and do not elaborate the results of the $\alpha$-Parameterised case as the implications are similar.

Impact from the Small Sample Bias

Table 1 summarises means of the mean bias in welfare cost estimate for each tax policy given data of different sample sizes in the $\delta$-Parameterised Case. The $z$-values show the evidence that there are significant spill overs from the biases in structural parameter estimates to the bias in welfare cost estimates. With a sample size of 100, we obtain the largest bias in welfare cost estimates for all tax policies. Interestingly, even though we obtain a smaller mean of the mean bias in welfare cost estimate by increasing the sample size from 100 to 200, there is a little difference when we increase the sample size from 200 to 1000. Hence, we can simply say that the impact from the small sample bias to the bias in welfare cost estimate is eliminated when the sample size is at least 200. However, it is evident that the bias in welfare cost estimate is still significantly different from zero. Recall that, together with the small sample bias, our parameter estimates also suffer from the lack of identification. Consistent with Canova and Sala (2009), the bias present in partially and non-identified parameters would spill to the welfare cost estimate and remain significant even in the large sample. This shows how important the parameter identification issue is to the estimation of the welfare cost.

<table>
<thead>
<tr>
<th>$\delta$-Parameterised Case</th>
<th>Sample Size (T)</th>
<th>The mean of $MB_W$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\Delta \tau = -20%$</td>
<td>$\Delta \tau = -10%$</td>
</tr>
<tr>
<td>100</td>
<td>0.187% (10.735)</td>
<td>0.091% (14.763)</td>
</tr>
<tr>
<td>200</td>
<td>0.128% (7.336)</td>
<td>0.054% (8.643)</td>
</tr>
</tbody>
</table>
Notes: The standardized z-value in parentheses is \( z = \frac{MB}{\sqrt{\frac{MSD}{N*M}}} \).

Table 1: The Mean of Mean Biases in Welfare Cost Estimates with Different Sample Sizes

<table>
<thead>
<tr>
<th>Sample Size</th>
<th>Mean Bias</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000</td>
<td>0.127%</td>
<td>(7.263)</td>
</tr>
<tr>
<td></td>
<td>0.053%</td>
<td>(8.502)</td>
</tr>
<tr>
<td></td>
<td>-0.028%</td>
<td>(-9.742)</td>
</tr>
<tr>
<td></td>
<td>-0.0260%</td>
<td>(-9.342)</td>
</tr>
</tbody>
</table>

Importance of Parameter Identification Problems

For the nonidentified parameter, the utility of leisure \((A)\), we encounter serious biases in the utility of leisure estimates as the likelihood is noninformative on this parameter. However, the welfare cost estimate does not depend on the value of utility of leisure and hence the biases in utility of leisure do not translate into the bias in welfare cost estimates. The functional form of utility specified in the model therefore plays an important role in determining which structural parameter is important for the estimation of welfare costs. It is possible that, by deviating from this functional form, the biases in utility of leisure estimates might matter and cause a greater impact to the bias in welfare cost estimate than what we have in this particular exercise.

The capital share \((\alpha)\) and the depreciation rate of capital \((\delta)\), on the other hand, play an important role in estimating welfare cost as they enter directly into the welfare cost function. Figures 2 and 3 illustrate the Response Profiles of biases in capital share and welfare cost estimates respectively. The surface plots display mean bias of parameter estimates for each experiment where we fix the depreciation rate at the values along the x-axis against the true values along the y-axis. The right (left) area of the diagonal indicates a negative (positive) bias in the depreciation rate estimate as we fix a value of the depreciation rate lower (higher) than a true value. Within the same diagrams, the dot plots display estimation results of each replication and depict the variation of biases in parameter estimates resulting in each experiment. From these figures, we can make the following observations.

As one would expect, if we correctly fix the value of the depreciation rate, we can pin down the estimated capital share correctly with only a small variation. As can be seen from the diagonal of the surface plot in Figure 2, fixing a value of the depreciation rate without bias leads to no bias in the estimated capital share. On the other hand, by observing the off-diagonal area of the surface plot, a
nonzero bias in the depreciation rate, in turn, induces a nonzero bias in the estimated capital share. In particular, a negative (positive) bias in the depreciation rate gives a negative (positive) bias in capital share estimate. Hence, the Response Profile suggests that there is a positive relationship between the capital share and depreciation rate of capital estimation bias.

Due to the problem of identification in the key structural parameters, the Response Profiles of bias in welfare cost estimates in Figure 3 illustrate how the biases in these structural parameter estimates translate into the bias in welfare cost estimate across all tax policies. Similar to Figure 2, no bias in structural parameter estimates leads to no bias in welfare cost estimates. Once we induce biases in structural parameter estimates, the Response Profiles of bias in welfare cost estimates suggest the following. When the income tax rate declines below the baseline tax rate; $\Delta \tau = -10\%$ and $\Delta \tau = -20\%$, there is a negative nonlinear and asymmetric relationship between the structural parameter and welfare cost estimation bias. This pattern is displayed by top panels in Figure 3. On the other hand, we have a positive nonlinear and asymmetric impact of the biases in structural parameter estimates to the bias in welfare cost estimates when the income tax rate rises above the baseline tax rate; $\Delta \tau = +10\%$ and $\Delta \tau = +20\%$. This pattern is displayed by bottom panels in Figure 3. Here the asymmetric relationship means that, for instance, a negative bias in the depreciation rate estimate of 0.04 only produces an upward bias in the welfare cost estimate of 2% whereas having a positive bias in the depreciation rate estimate of the same size pulls the bias in welfare cost estimate as low as -3% when the income tax rate decreases by 10%.

Another interesting feature we can observe from the Response Profiles of bias in welfare cost estimate is the change in the slopes of bias in welfare cost estimates to the biases in structural parameter estimates across tax policies. Table 2 summarises the Monte Carlo experiments for each tax policy as the range of mean biases of welfare cost estimates. We can see that the ranges become wider as the income tax rate deviates further away from the baseline tax policy. Recall Equation (8), the multiplicitive terms between a new tax rate and estimated structural parameters amplify the impact of the biases in structural parameter estimates to the bias in welfare cost estimate. Consequently, even with only small biases in structural parameter estimates caused by the lack of identification, they can reduce the accuracy of welfare estimates.
In sum, the problem of parameter identification is not only crucial for the estimation of the structural parameters but also for the estimation of welfare cost as this is a function of these structural parameter estimates. Consequently, the lack of identification of key structural parameters specified in the model can bias the welfare cost estimates and eventually mislead policy implications.

Implications from Response Profile Estimation
Recall we included several dummy variables into the Response Profile functions and estimate the coefficients using Ordinary Least Squares. Given the estimated Response Profile functions of both cases, we can make the following implications.

In the $\delta$-Parameterised case, tests on the coefficients suggest that the slopes of the bias in welfare cost estimate to biases in structural parameter estimates change across all tax policies and there are asymmetric responses of the bias in welfare cost estimate. Figures 4 and 5 plot the slopes and the gradients of the Response Profiles respectively. We can see that, in this particular framework, the bias in welfare cost estimates is most sensitive to the bias in the depreciation rate of capital estimate.

Fig. 2: Response Profile of Biases in Capital Share ($B_\alpha$) to Biases in Depreciation Rate ($B_\delta$)
### \( \delta \)-Parameterised Case

<table>
<thead>
<tr>
<th>Tax Policies</th>
<th>The Range of Mean Bias of Welfare Cost Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \Delta \tau = -10% )</td>
<td>-3.077% - 1.940%</td>
</tr>
<tr>
<td>( \Delta \tau = -20% )</td>
<td>-8.784% - 5.394%</td>
</tr>
<tr>
<td>( \Delta \tau = +10% )</td>
<td>-0.903% - 1.464%</td>
</tr>
<tr>
<td>( \Delta \tau = +20% )</td>
<td>-1.163% - 1.919%</td>
</tr>
</tbody>
</table>

Note: The baseline fiscal policy is \( \tau^* = 30\% \)

**Table 2: The Range of Mean Biases in Welfare Cost Estimates**

The slopes also display a greater impact of biases in structural parameter estimates on bias in welfare cost estimates when the tax rate deviates further away from the baseline tax policy. Furthermore, as we investigate the sensitivity of the parameterised values of depreciation rate in this case, the magnitudes of the gradients of the Response Profiles show that the bias in welfare cost estimates becomes less sensitive to biases in structural parameter estimates in the area where we fix values of the depreciation rate lower than the true values; shown as the southeast area of the Response Profiles in Figure 5.

We repeat the same exercises for the \( \alpha \)-Parameterised case in which we fix a parameter value of the capital share (\( \alpha \)) and obtain the estimated Response Profiles. The experiment also suggests that the bias in depreciation rate estimates induce the most significant bias in welfare cost estimate and the impact of biases in structural parameter estimates becomes larger when the tax rate deviates away from the baseline tax policy. However, in this case, the bias in welfare cost estimate become less sensitive to biases in structural parameter estimates when fixing values of the capital share higher than true values.

The estimated Response Profiles for both cases then suggest that fixing the depreciation rate of capital too high, or the capital share too low, leads to a larger bias in welfare estimates. We can therefore exploit this additional information regarding the relationship by imposing priors on these two parameters to improve the estimation of welfare cost estimate.

### Conclusion

Welfare cost estimates depend on the structural parameter estimates specified in a
DSGE model. This paper studies the implications for welfare analysis of structural parameter estimate bias. We implement Monte Carlo experiments and estimate Response Profiles to approximate the size of biases and study the relationship between structural parameter and welfare cost estimation biases. The findings can be summed up as follows. The relationship is not linear and the bias in welfare cost estimates respond very differently to the bias of different structural parameter estimates. The problem of parameter identification is important as it can distort the parameter estimates even in a large sample size. Moreover, the nonlinearity of the welfare cost function amplifies the impact of parameter estimation bias on welfare cost estimation bias and reduces the accuracy of policy experiments. In this particular exercise, the estimated Response Profiles suggest that we can reduce the bias in welfare cost estimates by setting the depreciation rate of capital too low or setting the capital share too high.
Fig. 3: Response Profiles of Biases in Welfare cost ($B_W$) to Biases in Structural Parameter Estimates for each Tax Policy in the $\delta$–Parameterised Case

Fig. 4: The Slopes of Response Profiles with respect to each Structural Parameter
Fig. 5: The Gradient of Response Profiles for each Tax Policy in the $\delta$-Parameterised Case
REFERENCES


INVENTION AND ORGANIZING OF THAI BODIES—MAKING NEW MARKETS WHERE NONE WERE BEFORE

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ABSTRACT

This article seeks to make a contribution to our understanding of organizing innovation, entrepreneurship and the making of a market inside a social practice that consists of multiple markets. The article takes a “new sociology of economics” and actor network theory perspective to the study of an entrepreneurial and innovative franchise organization in Thailand.

The study shows that despite the official and generally agreed-on existence of a potential large but abstract market for fitness services, where both the aggregated supply and demand are expected to grow, the franchise has never met this market. Instead, franchises found themselves in multiple markets consisting of restaurants, movie theatres, shopping malls, cafés, and friendship groups, i.e., the markets that have more in common with Weber’s minimalistic definition of markets as competition for opportunities of exchange.

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From this initial competition for opportunities of exchange, the article seeks to show how the franchise organizes the embedding of ‘clients’ into a network of practices and relations that create a Thai trained body, which is toned, shaped, strong, mindful and aesthetic, in enjoyable ways that the clients did not perceive previously.

It is argued that to create a market, the franchise has to enlist, train and discipline agents into a new regime where pain is experienced differently, where connection to the music in the class will be tools for strength and endurance, where the aesthetics of the body is seen differently, where toning and leanness is the measure of success and weight is seen as problematic.

The organizing and the reorganizing of markets and organization through innovation are argued to be the keys to becoming a successful entrepreneur.

Keywords: Market creation; Entrepreneurship, Health services; Lifestyle; Value cocreation; Service Dominant logic; Agencement, Assemblage
Introduction

“I don’t have any competitors in the fitness industry, my customers are choosing between going to the movies, going out to eat at a restaurant, concerts, meeting friends, family and us,” says the founder of Physique 57 Bangkok.

At the first interview with the founder of the franchise Physique 57 Bangkok, approximately 15 months after the doors were opened for the New York-based barre/fitness chain, she challenged the general academic, textbook economic and organizational discourse on markets, organization and value. According to all statistical and economical categorizations, her business would be classified as belonging to the fitness and service industry. As a matter of fact, she and her partners had applied the same logic earlier when they pitched for and found external investors and the capital needed to start the business. However, 15 months later, due to her practical experience, she has reversed this categorization and reformulated ‘the multiple market problem’ from the branches of the sociology of economics and organization theory (e.g., Frankel, 2015; Winroth, et al. 2010; Pollock & D’Adderio, 2012, Christophers, 2013). The multiple market problem being that a business can simultaneously be part of several different markets, as Frankel illustrates with the good, milk. “Milk sold in a supermarket is part of a supermarket and part of a part of a milk market, a beverage market, a market of agricultural products, and so forth” (Frankel, 2015, p. 538). Marshall, in his Principle of Economics, argues that the categorization of market is a matter of convenience and the product in question:

“The question where the lines of division between different commodities should be drawn, must be settled by convenience of the particular discussion. For some purposes it may be best to regard Chinese and Indian teas, or even Souchong and Pekoe teas, as different commodities; and to have a separate demand schedule for each of them. While for other purposes, it may be best to group together commodities as distinct as beef and mutton, or even as tea and coffee, and to have a single list to represent the demand for the two combined; but in such a case, of course, some convention must be made as to the number of ounces of tea which are taken as equivalent to a pound of coffee.” (Marshall, 1962, pp. 84–85)

The immediate problem that emerge here is both theoretical and very practical, i.e., how are the equivalents between a 57-minute workout class, a restaurant visit, a visit to the movie theatre, and ‘hanging out with friends and family’ made? Certainly, the equivalence
is made in practice between different activities, services and goods. There is, as Weber in his minimalistic approach defines a market, a competition for exchange. However, it does not seem to follow the economist abstract space or territory where the intercourse between economic agents will level out prices easily and promptly (Cournot, 1838, p.55 in Callon & Muniesa, 2005, p. 1240).

In contrast, the equivalence that the above quote hints at includes, but is not limited to, prices, time, social relations, aesthetic experiences of bodies, feelings of fun and closeness. The equivalence is multidimensional and contains both practically located and abstractly compared dimensions.

The quote from the founder illustrates the entrepreneurs’ and innovators’ very first practical business dilemma: How do I make my products and services relevant and valuable for potential customers? Which dimensions will my products and services be judged on? That is, provided that the surroundings will judge them in the first place and not ignore them and me!

These entrepreneurial dilemmas are conceptualized in the qualitative data provided in this article. The entrepreneurs, in the beginning of their endeavor, follow an almost Schumpeterian (1934) thinking, where it is assumed that the entrepreneur and innovation are “a novel recombination of preexisting elements,” and “the art of recombination extends to the moral, cultural, and social organizational spheres as well” (Peterson & Berger, 1971, pp. 103, 104), which leads to a claim that the entrepreneurs are making an offering of services that are novel and new in the market niche that they are trying to make/enter. The ‘customers’ are expected to recognize a certain value for them, supported by the traditional means of marketing and advertising. The advertisement should then lead to an exchange of value between the company and the customers. This value can, in principle, either be conceptualized as a need or lack in the customer’s life. Alternatively, it can be conceptualized as a “want” – the word want has its roots in Scandinavian languages in the word “vänta”, which means to wait for something that is not there yet, or maybe, could be there in the future (Aspers, 2012). This implies that, to want something in these terms relates to the possibility of expecting a future. This expectation means that the only way to achieve it is to do something or, in other words, to create something that has value in our lives. The product or service might be produced, expected, and marketed to be something else, but the purchaser will only purchase the product or service if it
could be an answer to something in their future endeavors.

In this article, this distinction of creating an imagined future will become a major distinction that has implications for how we conceptualize, organize and deliver a service. What we want or imagine in our business might be radically different from what our future customers want.

The claim in this article is that in researching an entrepreneurial process, it is both theoretically and practically constructive to approach the participants and the object of research from a ‘want’ perspective, where the imagined customer’s need or aggregate demand is the final product of a process. This approach implies that we should follow the emergence of ‘want’. Theoretically, the article follows Deleuze and Guattari’s (1994) discussion of desires as not an individual lack but as a distributed undecided passion. The passions are both attached and disconnected from other entities, relations and matters. The desires become a result when the actors imagine a future near or far that includes their passions, i.e., powers of ‘things’. Those customer’s need would be the result if this “imagined want” and its temporary stabilization in a specific actor network (Muller & Schurr, 2016).

**Empirical case – Physique 57 Bangkok**

This case follows the establishment of the New York-based barre franchise concept for exercising. Physique 57 was established in New York in 2006. Physique 57 is a continuously updated version of the Lotte Berg Method. The Fitness program has, almost since its inception, promised that “...this bar method exercise, is truly unique and has assisted various women and men of all ages to transform their bodies and maintain optimal health and fitness.” The method, which was started by Lotte Berg, originally consisted of a combination of ballet exercises and rehabilitation exercises, taken from Lotte Berg’s own exercises, to recover from her back injury. However, the method has continuously developed with new insights from sport sciences and other exercise practices. The establishment of the original concept for what is currently called Physique 57 coincides with the development of exercise as part of the American and European way of life. Exercise for women, however, which began in the 1950s, has been an increasingly integrated part of the American new healthy lifestyle. It can therefore be argued that when Physique 57 was founded, there was an existing and well-established market. The growth of barre exercises in the United States offered an alternative, particularly for some women who
wanted both an exercise and lifestyle, that was not focused around the traditional fitness center.

Physique 57 Bangkok was established as a Franchise in Bangkok in 2016. The Physique 57 franchise concept offered, among other things, a business model, a service concept, and training of franchisee employees. In theory, what the Bangkok branch needed to do was to find the right people (with supported VDO from the US), find locations around the upper end consumption and work areas, and build a workable local organization, i.e., largely copy and adapt already existing marketing concepts. The training of instructors would initially have to occur in New York, but would be supported by an American instructor, who would live and work in Bangkok, Thailand for 1 year. The second generation and the first years continued the development of all local instructors and the second generation of instructors was then overseen by the expat instructor. From a traditional entrepreneurial and business plan perspective, the implementation and annexation of the concept should be a relatively simple task, with normal practical issues to be solved on the way. As an entrepreneurial enterprise, it falls inside the traditional description of entrepreneurship, as a heroic discovery of an inefficient or market gap. This is because the franchise is supposed to ‘just’ transfer, translate, and adapt pre-existing knowledge and practice (Kellow, et al., 2006; Bruni, et al. 2004). The Physique 57 practices in New York are perceived to be directly translated to Bangkok. In other terms, the pre-existing market is assumed, for all practical purposes, to be the same in terms of opportunities and needs, i.e., the franchise only expands the reach.

The Bangkok Physique 57 branch was established by 4 Thai-born women educated in United States. When they started to discuss starting a business together ‘back home’ in Thailand, they were distributed across the United States. These 4 women all work in the finance field, their positions vary from risk managers, financial consultants in a major accounting firm, to senior accountants in different companies. All of them have lived, studied and worked in US for +10 years. When the project of Physique 57 started to take shape, one of the participants had taken on a role as an investment relation manager for a listed company in Thailand, 2 in the group were not able to move to Thailand at that time due to other social and work obligations. The fourth member of the group quit her job and brought her family back to Thailand to start the project, even before the final contracts were actually signed.
From a very early start in their Sunday skype conversations, it became clear that all of them like the idea of investing in the fitness industry in Thailand. It was generally believed that the fitness and health industry was an interesting and potentially fast-growing industry in Thailand. During their research in the early stages, they found data showing that only 1% of Thais have a fitness membership. They noticed from afar that running events were increasing in numbers and in numbers of participants. Particularly, some women in Thailand seemed to have a strong and new interest in health and fitness. Previously, running events had primarily been organized by and for the expat community. The running events primarily happened early in the morning to avoid the heat.

To start Physique 57 in Bangkok, representatives from New York needed to come to Thailand to approve potential locations, to have an audition for potential instructors and build the necessary relations with the coming franchisees. If the Bangkok group was accepted as franchisees, a specific contract had to be negotiated and signed. Part of the final contract was that 4 new instructors and one of the business partners would have to train in New York. Thereafter, a New York Instructor would come to Thailand to continue the training of the 4 instructors, train a second batch of instructors in Thailand and provide general support for the establishment of the Physique 57 studio(s) in Bangkok.

At the time of writing this article, Physique 57 is successful and has opened 3 outlets in the high-end localities around Rathchaprasong (major shopping area), Sathorn/Silom (business and banking district), and ThongLor (high end residential area) and are returning a surplus. However, the process of reaching this point has been quite different from the original plan and has challenged the franchisees, the New York office, local trainers and potential customers. These challenges occurred despite the participants having followed the projected strategy and business model. The number of customers increased according to plan for the first 4 months, then the growth curve started to flatten and did not meet the projection target. This article specifically discusses and interprets the period from the flattening of the curve to its transformation and rise again.

Theoretical framework –
Heterogenous network of desires, markets and organizations

This paper follows the “practice turn” towards a more anthropological and sociological conceptualization of economics, markets and heterogeneous actors. The
practice turn is an attempt to leave methodological individualism behind. The methodological individualism has traditionally had a starting point in a view that the individual actor had certain intentions and characteristics, which could include economical rationality, individualized emotions and intentions, and specific desires. On the other hand, society, culture and the institution have the power to shape the individual’s intentions and/or needs. The perspective is that they focus on individual or organizational intentions as the assumed driving force (Chia & Holt, 2009, Hernes, 2014). The practice turn implies that what needs to be explained is the process of constituting the intentions and needs of the individual, organization or customer. Several authors and researchers have attempted to accomplish this by examining the process and relations that create certain markets, such as fashion (Entwistle, 2009), entrepreneurship (Garud, et al., 2013, Garud, et al., 2016, Gehman & Souliere, 2017) entrepreneurship in developing countries (Elyashars, 2015), organizational change and identity (Hernes, 2014). These approaches breakaway from the methodological individualism or “Robinson Crusoe economics” by not conceptualizing the individual, the CEO, the entrepreneur, or the organization as conceptualized inside an environmental opportunity gap (Steyaert, 2007).

Instead of starting from the individual, this method seeks to explain what it means to become, for instance, a customer, organization, or entrepreneur. This approach breaks from what has been called the figure of the male knight in armor entrepreneur that personally conquers the world (for a critical discussion, see Johnsen & Sorensen (2017)) inside an individual-opportunity nexus. Inside methodological individualism it is typically assumed that both the opportunity and the individual(s) and how they make their exchange is the primary relation we should look at, to understand the emerging market and the exchange between individual actors with separate interests. The turn to methodological relationism is a turn in which the organization is both in constant flux and, at the same time, constituted a thing, i.e., an actor, inside which strategic processes and exchanges can occur. This finding also implies that it is our task to explain what affects the customer, by asking how the entrepreneur or customer was constituted in the first place; how they came to this point where they have an interest in looking at our services and products; then asking how the service can be applied in their lives. The claim is that the customer’s ‘needs’ and ‘wants’ are part of the very process we need to research. How were they created in the first place? What are their experiences of using the service to stabilize and to practice in a network of
relations (Entwistle & Slater, 2013)? These assumptions follow Latour (2005) in arguing that the approach cannot use the concept of the social environment, the economy, the individual, the market, the customer or the service, or how it was provided to explain the case. Gherardi (2016) claims that it is with the rediscovery of Wittgenstein within practice studies that the connection between the linguistic and the practice turn is founded:

“In fact, in wider acceptation of the linguistic turn, the taken-for-granted distinction between ontology and epistemology collapses once we recognize the role of language in the constructing the object of being. In other words, it is through epistemic practices that researchers construct both the object of knowledge – ontology – and the methods for producing knowledge, that is, epistemology. Researchers are inside the practices that they study.” (Gherardi, 2016, p. 684).

A practice turn or actor network perspective can be formulated tentatively in 8 principles or basic assumption based on which we can approach the field in new ways (Nieburh, 2016). The principles are as follows:

1. Agency in businesses and markets is sociotechnical distributed between human and non-human actants.
2. Desire or emotion is a relational phenomenon. They are connected through a process of agencement.
3. The constitution, construction and continuous flow in businesses and markets are collective effects.
4. Businesses and markets are always emerging.
5. Businesses and market-making are about translations of objects, humans and processes.
6. Businesses and market-making have disciplinary effects, in the sense that they will settle in specific localized relations.
7. Businesses and markets are therefore relational constructions.
8. Business and markets are performative effects and do not exist outside of specific relations.

The basic assumption is those that businesses and markets are constituted through and by a practice, which leads to the first assumption, as follows:

Agency in businesses and markets is considered a sociotechnical distributed cognition. The practices are considered to be processes that are intertwined and entangled in relations between human and nonhuman
actants. This means that a business or a market can be an actor when it is stabilized, just as an individual entrepreneur. However, as an actor, the constituted individual entrepreneur or business or market is “made up of human bodies but also prostheses, tools, equipment, technical devices, algorithms, etc. – in other words, is made up of agencement” (Callon, 2005, p. 4). The concept of agencement is traditionally translated into English as assemblage, which denotes a level of fixation in time and space. A more recent conceptualization of agencement stresses that agencement, as a processual term, underlines the continued connection between heterogeneous elements and a process, each of which contributes to the constitution of the specific business or market (Gherardi, 2016). This part leads us directly to the second assumption.

In the concept of agencement, Deleuze’s concept of desire is a central building block or metaphor for the establishment of ‘wants’ and ‘needs’ (Gaoia et al., 2013) It is expressed in the following way:

“Platonic logic of desire forces us to make a choice between production and acquisition. From the moment that we place our desire on the side of acquisition, our desire makes an idealistic (dialectical, nihilistic) conception, which causes us to look upon it as primarily a lack: a lack of an object.”

The point here is that desire, of course, can be conceptualized as a lack, when it is formed, changed and connected with relations and materials. However, this lack perspective misses the unshaped part of the forming and developing aspect of desire, which is based on the creation of new relations and new imagination. The drivers of what we “want” means that we are waiting for something to happen and this is shaped in the ongoing processes. In that sense, the desire is similar to an energy that is connecting ‘things’ into a network, which means that what they want does not come into existence before the desire, either in a positive way or negative way, it becomes connected or related to other objects. Furthermore, desire connects or constitutes what the individual is, and what the specific community is in each given situation. Finally, it is in its nature innovative, as it opens the way for new imagination and new ways of wanting (see Kozinetts, Patterson, & Ashman 2016). The concept of the driver here is rather abstract and the connecting concept of the desire-machine, Body without Organs (BwO), can be rather complicated to discuss. Therefore, an alternative version is to speak of emotion as the sociotechnical driver.
Illouz (2009, p. 382) argues that the concept of emotion is a more effective tool to analyze consumption, as it: 1. is anchored in cultural and social practices, 2. is an evaluation of a relation or an object, 3. is a bodily reaction that can run from mild to severe, 4. is an affect or feeling that can explain both the way we relate or purchase out of pain and pleasure, and 5. contains a possibility to act in the ‘want’ way for a difference in the near or far future. In this text, the concept of emotion, desire-machine and BwO will be used to grasp the dynamic relations.

The designing of businesses and markets is a collective project. With the concept of practice, it is from the outset assumed that the business and the market are the result of many actants’ activities and agency negotiated, contested and carved out through continuous interactions. As such, a business and a market are always collectively constituted.

Businesses and markets are always in the making. This idea is summarized in Law’s (1994, p. 101) fundamental conclusion in his research of an organization, where he states that: “There is no social order. Rather, there are endless attempts at ordering.” This concept has strong similarities to the organizational theoretical frame argued by Hernes (2014). In this frame, it is assumed that organization and implicitly markets are always on the move, meaning that the perceived stable arrangements have a fundamental perishability in the flow of time. “The Essene of persisting in a world on the move is not change (as change goes on all the time), but tentative ongoing stabilization of past experiences and future possibilities in view of their possibilities of becoming otherwise” (Hernes, 2014, p. 189).

Businesses and market-making are about translations that focus our view of the process of aligning things and processes that were previously different. Translation focuses our view on how activities are organized and set up as organizational activities that provide services and how in the process the business translates otherwise not related actants into customers for that business. It is through the translation and agencement that the assemblage of a successful business and its markets is, for a while stabilized in time and space.

Businesses and market-making have disciplinary effects. By disciplinary effects, what is considered is what Foucault coined the “microphysics of power”, which points towards how actants, such as entrepreneurs, trainers, instructors, office staff, and customers, are disciplined in assuming and identifying with certain positions and relations.
in the business and market. The disciplinary powers question asks how certain procedures, “experiences”, and services are imposed upon the business and its markets of customers.

Businesses and markets materialize in (traveling) policies. Reports, training programs, and figures are materialized in order for them to be possible to travel around the globe. The question here is how these become materialized and become the form of “immutable mobiles” (Latour 2013). As a case in point ensures that the customer will have the same or a similar experience when they purchase a fitness class in New York, Los Angeles, Bangkok, Dubai, etc. Given that the entrepreneurs are establishing a franchise, this issue becomes fundamental for the whole idea of the market and the value that they are claiming to provide to otherwise very different people.

Entrepreneurship is assumed to be a matter of creating relations of multiple processes, actants, and locations in short distributed practices that are always on the move. An entrepreneur should research a way of relating in a way that they can hopefully create value.

Hence, businesses and markets are performative effects. The premise in this prism of observation and theorizing is that the very businesses and markets are entities that come to life through the performance of practices. It is established through agency, agencement, heterogeneity and translations that make it possible, at specific time, to see an entrepreneurial business, out of otherwise seemingly unconnected activities and ways of living.

For the creation of a new business or entrepreneur, we can summarize the thinking in applying Garud’s theoretical framework as shown in Figure 1.
The analytical concept asks the following: 1. how the agency associates the relationality between heterogenous elements of social and material actants and thus, for instance, creates markets, services, etc.; 2. how the agency performs the conditions required for making progress and strong connections; 3. how temporality is performed and, thus, the past, present, and future is constituted through narratives; and 4. How the concept claims that contexts are made in real time and overtime. The claim here is that by applying these assumptions to analyze the case, we can find and describe the establishment of the business.

The data analyzed consist of ethnographic data reports, interview transcripts, marketing material, postings on Facebook and Instagram for the period from generating the idea of making a business to the end of the first year, a period in which the business changed significantly. At the present state of the development of the data set, the majority of observations from the customer site only contain ethnographic data, no formal and traditional interviews were gathered at this stage. However, the founders, and employees in Bangkok have been extensively interviewed.

Methods
The research data presented here is part of an ongoing project on female managers and entrepreneurs in Thailand. The research was conducted through participant observation for more than 3 years (since the prestart), semi structured interviews, and gathering of commercial data from the business.
The data have been analyzed using a grounded theory approach (Glaser & Strauss, 1967; Glaser, 1978; Strauss, 1987; Strauss & Corbin, 2008). The grounded theory methodology has historically been split between the two original founders. The approach taken here relies more on the Corbin & Strauss (2008) approach, in which the analyst simultaneously moves between a first order coding of events and process based on the preassumption taken in the study and second order coding in the form of memo writing and conceptualization. The memos and conceptualization are then gathered to aggregate theoretical concepts. The connections between the different levels are illustrated in Figure 2a, 2b, and 2c:
Figure 2a
The first order codes emerge from the application of the theoretical frame of assumptions and basic categories. The codes emerge from asking questions, where the answers were captured in the form of the ‘texts”, pictures, and notes. They are grouped together in themes through a process of categorizing, comparing and rejecting events/statements. Based on these events the process of memo writing occurs; in this process, the themes and underlying codes are explained by advanced notes that were taken, considering how the different ‘statements’ are connected. The purpose of this process is to develop new aggregate concepts and theoretical dimensions that can discover new connections, relations and processes (Locke, 2001; Gioia, et al. 2013). The key modification of previous methods here is that in the interpretation and coding of events, it is understood that the recognition process is based on pre-established metaphors, categories and concepts (Dopping & Morsing, 1998). The assumptions thus function as guidelines for asking questions about events and processes. The key element in this process is also to be able to recognize when the coder is forcing certain categories on the material and taking precautions to ensure that this type of forcing is avoided as much as possible (Glaser, 1978).
It all went great in the start, the sales curve was just on target, but after 4 month it went flat, and declined for some weeks.

I just could not understand why nobody wanted our service. I truly enjoyed it, and I used to go to Physique in New York.

I thought we just had to push on, make higher levels, as in New York.

Thai people are just not used to exercising. They think if they went to the gym once in the last month, they exercise.

Yes, I remembered how on the first day in New York, I sat down and did not think I could do it. I wanted to quit.

The clients went out of class and were dead tired, but not in a good way.

The clients do not truly know their bodies. They get scared when the muscles start shaking.

Thais are here for fun. They choose between friends, restaurants, the movies and Physique.

We needed to find a new way to connect to the clients.

Figure 2b
Like Bloop curl! How you have to feel the tension right here... Or touching and asking if they could feel it right there.

When they started to feel the “bum,” we had to tell them that this is what makes you stronger. Don’t be afraid of the shaking.

So many are so afraid of building-up, which is not true; we make lean muscles.

“Make your best self!” (part of an advertising that became a standard phrase in class).

Talking with client about NOT looking at their weight but looking at their shape.

Presenting another toned and lean body image.

We train your body and your mind. If you can do physique, you can do anything.

Making sure the clients feel good and have fun. For them to go to the next level.

I don’t like pop music. I had to learn to feel the rhythm, and get the clients to feel and use the music.

The music has to change with the body and the exercise. The music is so important for the clients to use the music in the movements.

You can breathe with the music, and then you can suddenly do twice as much.

Creating a new body image

Body making

New kind of fun and awareness of their body

Attachment of aesthetic experiences

Music as sense giving

Figure 2c.
Findings

This section is divided into two parts. The first part seeks to describe the second order themes in chronological order according to when the observations and the informants’ viewpoints occurred. The second part seeks to describe and relate the theoretical concepts and dimensions into a model for the process of recovering from what could be interpreted as a market failure, in the sense that there was a very limited to nonexistent market to start with. The intention is to not only to give a realistic description but to seek transparency in the development of the theoretical model.

Themes and ordering over time

The team and management had acquired enough economic strength to make sure that they had a prime location close to major business areas, public transport, and major shopping malls, all of which was believed would make it convenient for potential clients to use the services provided. The New York trained instructors, managers and staff created a soft opening, where every personal connection was invited in to try Physique 57 before the official opening. In the first 6 months, a considerable traditional marketing effort was made to create a high level of awareness about the training through interviews in magazines, on television, warm-up activities at half-marathons, and outdoor advertising at prominent places. If measured, the buzz created given the amount of resources used was significant. Even students at a campus outside of the city had heard about Physique, even though they were not a main target group, which also meant that from early on significant groups tried Physique. However, many of the market activities were later rejected as “not worth it! Bad exposure because the articles do not give the feeling of the fun, the lifestyle of healthiness, etc.” that Physique 57 wants to present.

The first 4 months perform exactly as planned in their financial model; however, after 4 months, the financial model and the actual client numbers start to separate from each other. The graph starts showing a flat line for client growth. This flat line of growth does become more visible in this organization as the clients fail to purchase subscriptions; instead, they are purchasing training by the hour, either as individual hours or as packages of 2, 8, 15 or 50 hours.

Theme 1:

Rejection of services already paid for

To get the clients to return, the organization begins calling clients and suggesting a new appointment for the second class or extension of the package so that the clients
have a reasonable time to use the already purchased number of hours. During these calls, the staff experienced that clients simply hung-up despite the fact that the organization in principle owes them a second free class, or when the clients do answer, they tell the staff “you can keep the money, I am not coming back – it is too hard!” or “no, it is not for me, it is too hard, I hurt so bad after the first time”.

One of the managers asked a male friend, why do people not return to her classes. This male friend had taken private class once and never wanted to comeback – with the reason it hurt too much. His answer was as follows:

“Because it is too hard, think about it, you know only 1% of Thais go to the gym (him being one of them), of those 1 percent, only 10% can take your beginner class, and all the others feel like me that they failed”.

This quote points towards the 2 next themes that consistently occur, i.e., the theme of a. the unpleasant feeling of the body and feeling sick after the class, and b. bodily rejection. Both of which points towards the clients’ increased detachment from the offering they previously wanted to experience.

**Theme 2: Unpleasant feeling of the body and feeling sick after the class**

The observation data and interview data have several examples of the following comments: “next day I could hardly walk down the stairs”; “my body was so sore that I had to stay away from work for two days”; and “I was so sore that I needed my mother to help me out of bed”. Several of the remaining clients told stories about how their friends had been ‘sick’ a whole week after the training, describing in detail how they apparently never had experienced pain similar to this before, and most importantly, that they interpreted this pain as something extremely negative, unpleasant and certainly not part of anything that could be described by the word health.

**Theme 3: Bodily rejection**

The bodily rejection was described by one of the instructors who went to New York. She described how she, on the one hand, truly had to fight for getting the job, sending several video auditions before she could actually be included in the group. However, after one of the first classes in New York she sat down and wanted to quit. Several clients describe how after the warm-up (12 minutes) they already felt they could not continue. A common comment was, “It felt like an eternity and my
legs just started shaking uncontrollably, it was scary”, here implying that they have never experienced the overload of the body before, where the body reacted to the training or stretching by shaking.

Theoretical conceptualization and dimension: detachment and/or resisting attachment

The above themes of rejection of service paid for, the unpleasant feeling of the body, and bodily rejection to exercising and the new regime of Physique 57’s idea of “being your best self (body) ever” can both be conceptualized as resistance to attachment or detachment from an existing practice. In this case, it is argued that there has already been an exchange and purchase of services. There was a willingness to engage in the exercise, which was partly encouraged by traditional advertisement and marketing, and partly by an increased fashion for being healthy in the broader Thai context, where women in particular are increasingly participating in health and sports related activities. However, the experience of both the in-class activities, the categorization of sore muscles as a general sickness, and the active rejection of the follow up class implies that after the class, there was a strong tendency to actively detach from the training. The common experiences of losing one’s breath and experiencing soreness during exercise were classified as sicknesses and not as the normal results of starting any kind of exercise. For these reasons, the interpretation is that it is not only an avoidance of attachment but an active detachment from the exercise.

The detachment process can be seen as a sense making process, where there is a detachment from a categorization of the body as an object of training and thus a discipline that might hurt towards a return to bodily concept where feelings of pleasure and unnoticed stress are unknown to the body. Further, what we see in this process is that the detachment across time and space draw experiences in the class, where the body ‘acts’ in unexpected ways at home, which leads to a general detachment from any future purchases of exercise with Physique 57. This detachment from a categorization does have some similarities to the process described by Demestri & Greenwood (2016). Here, it is just the other way around, the agency of clients, their bodies, are detaching themselves from an otherwise ‘attractive category’ of a fit, slim and well-trained body. This detachment from the category of training people is understandable when Physique 57 reviewed the clients’ statements at the beginning. Most clients saw themselves as training, healthy, or maybe on the way to improve their physical well-being. However,
very few clients have actually trained or exercised in the manner it is taken for granted in New York and by the founders. The detachment shows that there was an abstract idea of exercise by the clients. Therefore, from a business perspective, it resembles a promising market as an “abstract” economic market. However, it only looks promising when it is assumed that much of the population wants to be fit and healthy – “with your best self (body) ever” (slogan Physique 57). The actual embedding of clients into the relations of exercise as Physique is both resisted and a big group of clients actively seek to avoid the category after they tried it. We see that the desire as an unspecified passion or ‘want’ for fitness achievement in the embedding is judged as being too hard. When the exercise causes “the muscles to burn”, you are shaking and do not feel that you are improving, but rather that you are failing. The same connection is made when muscle aches are experienced after the first training.

Theme 4: Keeping the goal

The entrepreneurs, managers, staff and trainers keep pushing on, inviting clients in, thinking about expanding the types of classes offered, meaning classes for people who want to participate in creating results by increasing the level of exercise. This approach is described as just continuing to push on with the strategy, supporting each other in the view that the flattening sales curve was more a result of meeting some unexpected challenges.

Theme 5: Doubting the goal

The entrepreneurs, managers and trainers start to notice that “people come out of the classes and they were tired, but most of them were not tired in a good way... you know, like tired smiling, happy – they were just tired”. Some trainers started to doubt the goals, not because of Physique 57’s concept and direction, but because “Thais think that just because they went to the gym 2 times a month they were training”. Other trainers start remembering how hard they found it and how they were close to giving up when they received the training in New York. The doubts materialize in many different and competing narratives, where the organizational members try to make sense of the present situation.

Theoretical conceptualization and dimension: Organizational narratives of client detachment

The themes of keeping and doubting the goals illustrate that the organizational narratives about the clients, the markets, the embedding of clients into the network of
agencement from very early on are disputed, unsettled and partial. The narratives are based on what Downing (2005, p. 193) calls a storyline, which is defined as: “emotional resonant stories that are remembered and repeated. They reflect the actors’ positioning of individual and collective identities and understanding of actions and events.” These storylines are inscribed into the way the organization classifies statements and deals with upcoming issues on a daily basis (Douglas 1986). Client statements like, “it was really hard and it hurt so much”, was the statement that (entrepreneur Y) had to deal with, by thinking “what did you expect? If it hurt, it means your muscle has been working” and later added “you know, the reason why I like the pain is that it was a sign that I was getting rid of the ‘cellulite’, yes, all those things we, as women, do not like”. The narratives of pushing on and doubting collectively interprets the situation as a scenario where clients do not really want to do the work and do not live their lives in a healthy way. The narratives create causality in the flow of processes by connecting statements and practices (Czarniawska, 1997). Part of the same narrative of causality can be seen in another statement connected to this collective story: “I have friends who say that they work out, and they want to have a healthier body, but at the same time, they just eat unbelievable amounts, and the kind of stuff they eat is just like …. you know!” The storylines and plots were gathered in competing narrative structures that are experienced, contested and negotiated between instructors, trainers, entrepreneurs and clients (Downing, 2005).

The competing narratives and their story lines became different ways of making sense of the situation. In Chia and Holt’s (2009, p. 139) words: “instead of being something explicitly and boldly stated upfront, it emerges organically, takes shape and infuses itself into the everyday actions of individuals and institutions.” We are seeing a process of way finding, where the entrepreneurs, instructors and trainers and clients get to know as they go, but in significantly different directions. For the potential customers, the way finding is “this is definitely not for me” – their desires and emotional judgement goes in an opposite direction, as they cannot connect the experience and concept of training to their existing lives. Meanwhile, the managers, trainers, expats and “well-trained clients” tell a narrative where they see a need for even more advanced classes.

**Theme 6:**

**Sense creating**

After the 6 month period, the instructors, entrepreneurs, managers and other staff realized that when the “potential targets”
said they worked out, the truly mean they worked out “not more than 2 times per two weeks”. Working out sometimes means something similar to approximately once a month. Which, in the context of a fitness lifestyle similar to the ones the entrepreneurs, the instructors, and the trainers embodied, truly means “I have never truly trained”. Seen from an “outside Asia perspective”, this lack of training and exercise is surprising, as the ideal body, presented in advertising, discussions, and everyday practice, is very slender and thin. It can be argued that the ideal Thai female body has similarities to the western ballerina. As stated by a continuous customer, “I danced ballet when I was 5 until 20, so when I read about Physique that was built from ballet, yoga and strength, I immediately came ... I truly wanted to get that strength and body back”. However, in the same breath, she also explained that none of her colleagues, friends and family truly understood what it would take. Despite that, it is not unusual between friends to openly touch a stomach and state “ughh, you have gained weight (bumbui)” – in ways that for most non-Thais would be found to be extremely intimidating and stepping over most personal boundaries. At the same time, it is increasingly realized that the clients do not choose between this or that exercise, but rather, they choose between going to the movies, eating with friends or doing other fun social activities. As the senior manager and entrepreneur stated, “I compete with other entertainment outlets, not other exercise or fitness centers”. This increasingly led to the idea of finding new ways of connecting to the clients. Therefore, they began to insist that everybody start with what at first was called fundamentals, a program designed to have a different purpose from a traditional beginner level.

Theoretical conceptualization and dimension: Recategorizing Thai bodies

The sense creating process leads to a recategorization and categorization of Thai bodies. Thai bodies are conceptualized as much more social, pleasure seeking and fun loving than the original Physique 57 concept stipulated. Through this recategorization, the team does not give up on their goal of creating a new strong, lean and attractive body. However, the recategorization opens up new ways of finding potential attachments to clients, by assuming Thai uniqueness and difference from the more western ideal for women’s appearance. The ideal body image presented in most of the corporate Physique 57 advertising materials is still in many ways the same; however, the actual meaning of the body image is significantly different. It is similar to a boundary object (Bowker, et al., 2015), which is flexible enough to be placed in different practices and used for local
purposes; at the same time, it is strong enough to keep the different practices together and make the ideal workable for its different usage. One way of interpreting these different narratives is that the managers try to provide conditions for Thai clients to attach with the Physique 57 regime of exercising, creating bodily experiences of both good and bad pain. However, the Thai bodies are so unfamiliar with the pain, that despite seeing themselves as training, they actively try to detach themselves from the categories of training, pain and reinstate a more pleasurable bodily life.

Theme 7: Learning to feel the body

The approach to feeling the body is first to focus on the form, meaning the exact way of doing the exercise, where the pressure should be on how it should look and feel. This is illustrated by one of the key instructors that describes how she even instructed how to perform a traditional bicep curl with dumbbell. In this instruction, she described in detail and showed how to hold a dumbbell, how to stand, where on the muscle they should feel a tension. She would walk around and touch the place they are supposed to feel it. Where a traditional training would focus on creating the “burn,” these classes would try and prepare the client for a “burn”, explaining how and why it is good when a muscle starts shaking and how it should feel.

Theme 8: Creating a new body image

In the classes and between the clients there existed a constant concern, which was becoming or being ‘boggy’ – meaning to muscular. As soon as they see the dumbbells and weights, they start to fear that they will be masculinized, develop large muscles, etc. From very early on in the creation of the “fundamental class,” this concern is constantly addressed by claiming that it takes male hormones to build masculine muscles, so female clients would never develop large muscles. They are told how to keep long and lean muscles through a constant change between stretching and overloading the muscles. The male trainer often claims that even when they use dumbbells at the same size as him, they would, due to the hormones, never be able to achieve his muscle size.

At the same time, as there is a constant talk about being lean and not bulking up, there is, for all exercises, an almost mantra repeating how to build strength and tone muscles and emphasizing how they should look. This creates an image, together with the mirrors on the wall, that stresses and encourage the client to find her improvements and see them as small victories. This practice also means
that even though it is a very uncompetitive environment, they are developing an ideal that includes creating six packs, toning, and a female form that is not too slender and not bulky.

Theme 9: New kind of fun and awareness of their body

The fundamental class is made to be fun, humorous and relaxing. It is, according to the instructors, the way to connect to somebody who has actually never trained. This also means that the instructors make an extra effort to be present, aware, and always certain that they know all the names of the people in the class, and that they have time to chat and talk after the class, creating small victories especially for the new clients, to ensure that they would try Physique classes 2-4 times per week.

After the introduction of the fundamentals class, all the instructors say: “Thank you for your energy! If you have any questions, please come and ask me!” They also proactively increasingly go and ask the new clients how their bodies feel. The most outgoing instructors also start explaining what they should feel in their body, and why it is important to return.

After the introduction of the fundamental classes, a statement such as “at Physique we not only train your body, we also train your mind, so (name of typically a new customer) you can do it, just keep it up and take charge!”. This narrative has both a connection to a modern version of feminism, where women are described as strong, but the statement can be directly compared to the Theravada Buddhist tradition, where mind over body and letting go of the pain is a standard theme. It also builds on a Physique tradition, where the instructors without mentioning names state that, when the exercise is getting hard, “you can take a break, but the important thing is that you should comeback as quickly as you can”. This sentence was primarily used at the beginning and is often used in the American trainer’s classes. Those are connected to other general discourses that the clients are familiar with and generally like.

Theoretical conceptualization and dimension: Body making – the new Thai body

Educating and disciplining the client’s body is important, creating an idea of a new Thai body with an increased awareness of bodily sensations, feelings, where the client know the difference between good pain and bad pain (injuries). Soreness, as a proof of determination, taking charge of ‘your best body ever’ shows that you are building
strength and burning fat. However, bad pain means injuries and that bad pains must be taken care of in such a way you can keep on training, while good pain creates a new strong, healthy, toned, slender and aesthetic body. The process we are seeing is a specific kind of formative process, where bodies, minds, and instruction are gathered together in a new way of doing/knowing. By creating this formative process of the clients, starting with the fundamental class, where untrained bodies are required to be for a minimum of 3 times so that the clients are slowly introduced to the pain, they learn to differentiate good and bad pain, and increasingly feel that they can now handle it. They finally become tired but successful and smiling customers that still speak about how hard the fundamental classes are, and quickly gain pride regarding what they have accomplished.

It can be argued that the creation of the fundamentals class and the constant advice have created confidence, by stating that we are not only here to train your body but also your mind. Therefore, we are starting to be more positive in relation to a new way of living, where the “customers” can use the Physique 57’s way of thinking in a much more detailed way.

Theme 10:
Music as sense giving

“I don’t like pop music, I had to learn to feel the rhythm, and get the clients to feel and use the music”. Music is, from the beginning a vital element in the training. Pop music has different tempos and different beats that the instructor can use to guide the clients to achieve a much higher performance and not feel the pain in the same way or as an instructor said, “You can breathe with the music, and then you can suddenly do twice as much”. The music is created and used to give sense to the exercise, to create a focus on using and experiencing the body as accomplishing the rhythm and the bodily movement. It is intended to ensure that the body and the exercises are used and felt together. “The music has to change with the body and the exercise. The music is so important for the clients to use the music in all their movements”. Pop music is chosen to make it easier for the clients to instantly connect with songs they generally already know. This connection to the music, its tempo and changes, can attach the client’s body movements more instantly, and by being trained to do that, the music works as both an enhancer of the exercises but also as a means to prolong and take the awareness away from the pain.
Theoretical conceptualization and dimension: Attachment of aesthetic experiences

The music, the imagination of another body and, the bodily sensation works as an attachment and embedding of the client into a network, which goes beyond the mere exercise. By embedding and attaching different movements, exercises, and aesthetic experiences, the clients seem to live and connect with their trained bodies in new ways, which creates a need for the clients to come back and be part of the class. The music, the movement, the bodily pain, the instructors voice and other clients become a network that are strongly attached to the individual’s experience of a “found need” for exercising in the way Physique 57 provides. Clients start talking about how they missed classes when they have been away for a while due to work, family and other obligations.

Theoretical model for attaching desires to exercise through embedding in networks

It is generally assumed by entrepreneurial practitioners that when they purchase a franchise license, they at the same time almost immediately purchase access to a pre-existing market where they can carve out a market niche inside an aggregate supply and demand structure. The present case and its conceptualization suggest and confirm that with a tested business model, a well-planned and traditional marketing campaign can seduce and create a curiosity that are almost irresistible for potential clients (Cochoy, 2016). The curiosity in itself seduces the client to make the very first purchase. The initial seduction might be a necessary condition for performing a relation to the service suggested; however, it is not a sufficient condition to stabilize the embedding into a specific set of heterogenous relations between clients, bodies, music, instructors, and the company, especially when the whole business model is based on continuous reproduction of these relations. These relations are intended to create narratives and feelings of bodily progress and need to be redone and exchanged for money on a continuous and, in principle, on an hourly basis. Based on the case, it is theorized and hypothesized that the embedding and attachment to the practice will start after the door is opened to the room and the curious client and the service provider meet for the first time. The moment of truth is not in the first purchase, but in the meeting between the previously unknown content of the unwrapped package. It is in this meeting that the value is qualified and judged. In the unwrapped version, a future relation is calculated. Calculation is Cochoy’s (2008) concept for the establishment of a shared project between the current client and the whole service organization. Cochoy defines calculation as follows:
“Calculating means anticipating, measuring, testing, influencing and correcting the discrepancies between one’s position and that of one’s partner, and the other way around. In other words, Calculation is more related to the verb ‘calquer’ (i.e., the effort to adjust one’s action to a given model) than to the noun ‘calque’ (i.e., the result of such an action when it is one way and successful, thus producing a faithful copy)” (Cochoy 2008, p. 30)

Exactly because this calculation process for a large group ends with an almost violent detachment from the ‘unwrapping,’ we get a unique view inside to how the calculation process has to be reshaped, reorganized and corrected in the organization of the meeting between the organization and potential clients. In the case, the establishment of systematic fundamental classes can be interpreted as the establishment of a new and shared project in which the client, the music, the instructor and the organization
defines new bodies and relations. The theoretical model for this recalculation process is outlined below in Figure 3.

In the model, the client detachment happens after the first purchase and exchange, after the actual unwrapping of the service. The detachment process is not expressed in a one-dimensional way; on the contrary, the detachment is multidimensional and heterogeneous. It contains bodily experiences during the first unwrapping, the embodied feeling of sickness and soreness, and the direct rejection of making new appointments, and the avoidance and giving up of economical claims to service. This type of detachment can be hypothesized to lead to exit from the organized relationship. An active detachment does not seem to lead to processes of voicing concerns and discontent, as Hirschman (1970) claimed would be the most likely reaction, even though the client does not seem to have any real alternatives, which Hirschman hypothesized would be the most likely conditions that the client would exit the relation.

The discrepancies between the market buzz and the experience of active client detachment influence the creation of organizational narratives and stories that both doubt and strengthen the formulated organizational goals. The conflicting and diverse narratives lead to concerns and discussions, but in the research, there are no data that can describe the tipping point for recreating and making a new re-embedding process. It can be hypothesized that the conflictual narratives on success or fiasco, the economic pressure can lead to a reembedding process, but under what conditions is a question for future research.

The organizing of the re-embedding process does seem to be established after an intensive process of sense creation. Sense creation is conceptualized here as both different from sense making, where sense is made of novel situations by using and adapting old maps to new problems, and different from sense giving. Sense giving assumes that somebody above or under provides ways to make sense of the situation. Sense creation as a concept describes the process of patching things up where a large gap in the understanding is opened and where the sense creation process does not have a point of reference outside of the different contested narratives. Sense creation happens as both a collective process where the interpretations, meaning, and direction are contested. The sense creation process does, however, lead to new ways of categorizing events, experiences and data. Inside the new or adapted recategorization the new meaning can emerge and guide the
future calculation processes in relation to new clients.

The actual calculation process consist of two mutually supportive processes. In the first process, the client’s desires and emotions are directed and framed in new ways that can shape the client’s feeling and experience of their bodies and muscles that they did not know they had. The clients learn to visualize and see their own bodies in new ways. The body and the ideal body image are formed in new ways that makes it possible to create and organize a shared project between the organization and the client. This project and the bodily sensation are reshaped into experiencing a new type of fun and pleasure. In short, the body is remade and requalified. A particular strong element in this calculation process is the application of music to shape the bodily experience in the ‘service encounter’. The music allows for both individual interpretation of feelings, a new image of what can be done and a negotiation of feelings of fun and joy that are bent around the shared process.

Through this calculation process, the clients are embedded into a new network of activities and way of living, where the new market comes into existence and, in this case, Physique 57 becomes a market platform for the organization.

Discussion and Conclusions

This research started with an approach that asks the following: ‘how are market opportunities realized in entrepreneurial companies?’ This question is in its form largely in accordance with very traditionally found inside a more Austrian economic way of thinking (Kirzner, 1997; Mises, 1949; Hayek, 1946). A perspective that leads to the idea that market opportunities exist in reality independent of the entrepreneurs, some of which are not yet discovered. In Koppl & Minnity’s (2003) work, these opportunities can be described by: a. a human needs that are not met, b. a service that can fulfill this need, c. which the entrepreneurs have created knowledge about, and finally, d. the consumer must realize that this need can be satisfied. In the case, these assumptions were made in the very calculation of the potential business, a calculation and business plan that gave rise to the funding of the endeavor. However, almost immediately after the actual opening, there is a realization from the entrepreneurs that the opportunity is in direct competition with markets that traditionally would be considered irrelevant for an industry inside health and exercise. This observation significantly challenges the economic concepts of a market in which there are gaps to be exploited/realized for wealth creation, at the same time as it
challenges the very idea of a pre-given need on which the opportunity is based. By theoretically giving up an idea of a need as constitutive for the very entrepreneurial endeavor our questions become inspired by asocial constructionism approach (Alvarez, et al., 2013; Alvarez, & Barney, 2010). Where our questions are concerned with how opportunities are created and how this approach unfolds in practice, it is worth noting that such a process focus is also called for inside resource and practice perspective in the same manner as a more Austrian approach to focusing on social facts. However, instead of focusing on the needs in the market, it goes more psychological and focuses on the entrepreneur’s way of thinking, feeling or traits in the way they act. Clough et al (in press) points towards this in their review in Academy of Management Annals. In this review, they do realize that the focus on individual’s mobilization of recourses and the application of these resources have a limited ability to actually explain both the entrepreneurs and the very process of entrepreneurship. For which reason, they also make a call for more process-oriented studies.

In this article, it has been argued that despite marketing techniques can create an initial seduction and curiosity for a wrapped package that people can exchange in an economic situation, this initial exchange does not create a market nor market embedding. The moment of truth is those recurring process that have to be repeated several times to constitute a new market for “services”. Contrary to common belief, a sale or moment of truth can equally well lead to a market existing unless a re-embedding and calculation process occurs. Despite an apparent first sale there is no market as a starting point. In fact, exit and active detachment even after purchase is not unusual. It has further been argued that entrepreneurial organization and franchises establish a sense creating process, that is an initial first step towards the process of embedding people as clients for organized services. The embedding of persons happens through a calculation process. What does not seem to happen is a disciplining of bodies and selves as part of creating a market and a customer need. However, the calculation process highlights other research that shows people’s consumption related to historical and imagined future consumption. The latter point can be related to the research on material changes to people’s consumption changes the identity of the people but also their confidence and what they imagine that they both want and need (Walter & Schouten, 2016).
Research implications

The article taken together with recent scientific discussion does imply that our research question needs to be formulated in a more qualitative direction that allows for actual observations of the entrepreneurship process. This study is limited by the fact that it is one case and, statistically speaking, it is a rare case as, after 2 years, they are making a profit, growing and seem unlikely to disappear as 9 out of 10 new entrepreneurial vendors do. We are in need of studies that shows the actual process of entrepreneurship, a key question is how markets are created. This question implies that we, despite a calculative economic model that assumes the existence of need, needs to observe and theorize how the original idea of a service and products are changed and adapted in real practice. An important question in this context becomes how the economic modeling, business plan and the everyday practice with potential customers are created and elaborated. Sohl, et al. (In press) shows that business plans do matter for the return on assets and market share, yet how the business plan matters, how it is being used, transformed and realized in practice is not well known or understood. Business plans as other plans in the present case do play a role, yet they do seem to be only a weak resource for actions (Suchman, 1987).

The case illustrates both that “market” categories are established but also that these are transformed and adapted. In the present case, the categories are real human beings which the entrepreneurs are both categorizing in this case as other, seek to transform, and install actual needs for exercise. The present research is limited in this respect because it shows the establishment of a very specific need established, where it was assumed that there already was one. The research question which becomes important is not only how relationships to customers are created but how nonexistent needs get created, learned, perceived and emotionally appreciated over time. A process that at first implies that needs are not pre-existing, but the process of categorizing, relating and creation of appreciations is an important process to organize for the practical entrepreneur – but a process on which we only have limited knowledge.

Practical implications

This study in its practical implications raises some very basic questions for the entrepreneurs. First, the study asks the entrepreneur to not start with the assumption that there is a need for their services; on the contrary, it suggests that entrepreneurs need to answer the general question: why should anybody purchase your services? More
specifically, it asks the question of how you would organize people outside in such a manner that they are not only willing to try your service but are also willing participants in their own transformation and creations of new emotional appreciations that would cost them both time and money. The implicit claim here is not just that the entrepreneur needs to look at the usage of their products and services but that they need to consider how they will create this very usage in the first place.

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