SCF Associates Ltd

Final Report

A Study on the Impact of a Proposed Merger

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Prepared for the NBTC

Executive summary

1 Where is the Thai market today?

Over the last ten years, the Thai mobile market has offered good service levels to its customers and most importantly has acted as a significant factor in driving the Thai economy general and the digital economy in particular. The mobile network operators (MNOs) are competent and through competition have built mobile businesses with multiple bundled offerings covering all communities across the country with the major transport links. Their LTE-A mobile broadband services have now leveraged 5G rollout, covering around 75% of the population already. That dynamic mobile market attracts investment as mobile stimulates the whole Thai economy and acts as a shop window for foreign direct investment, for instance for those who would build the next generations of technology such as electric vehicles, their batteries and semiconductor components. But in looking at expectations of market developments, the past is the place from which we begin, with mobile markets driven by competition between the three major mobile network operators (MNOs) TRUE, DTAC and AIS) with one far smaller competitor (NT).

In the midst of this development with an urgent need to repair the damage of the global pandemic, a merger has been proposed, between two of three MNOs, TRUEMOVE H and DTAC via their parent companies (True Corporation Public Company Limited, TRUE and Total Access Communication Public Company Limited, DTAC).

But Thailand's increasingly demanded mobile networks are just part of the range of different radio technologies, progressively converged with fixed line services that the Thai population uses to meet their domestic and working needs, whether that is using Wi-Fi at home or work, or mobile networks when on the go for social networking, entertainment such as streaming or work. In the future, we also expect to see an increased role for other companies in providing specialist networks, selling mobile internet access and providing online services, so the market should not be static but dynamic and expanding.

With the momentous nature of the decision for the merger to go ahead, the priorities change, and so focus switches to – on what conditions should this merger go ahead? In judging the appropriateness of this merger, we have to look to the future post-merger market continuing after the merger acceptance.

However first we should note that the NBTC is not alone in having to deal with merger proposals in the mobile sector. Over the past two decades, communications regulators or competition authorities, each in accordance with its own legislative basis, have had to adjudicate on the costs and benefits of such proposals. As a result, a lot of international experience has been gathered, and this study seeks to crystallise that as an aid to NBTC in its decision-taking.

It supplements the international investigations using econometric modelling of the macroeconomic and microeconomic levels of the Thai economy under a merger, with an additional model to look the impacts on future investments using a costing analysis. This report contains evidence on the future market directions from these four sources, much of which was initially covered in the first two Progress Reports, with the contents as follows below.

First we looked at the evidence from multiple case studies across the globe (Chapter 9). What is remarkable about the outcome of these mergers is the degree of convergence in different mobile markets to either 3 or 4 operators. The convergence from 3 to 2 operators is far more rare and seen only in the Philippines where a new MNO is entering the market, encouraged by the government and having major capital access. Generally reversing a duopoly or monopoly (effectively what was monopoly was the case in Mexico over a decade ago) is very difficult to move away from. It took a modification of the regulator, to incorporate the competition authority, to provide a major increase in statutory powers to a competitive market with its economic stimulation. In this Chapter we also look at the measure of market power concentration using the commonly applied HHI measure for the Thai market and its prediction for a merger

Secondly we examined the situation in Thailand using two linked econometric models, in Chapters 10 and 11. The quantitative approach allows a comparison of what happened (in terms of pricing and investment) when a mobile merger occurs with an estimate of the counterfactual outcome in which it did not take place. The first, a Microeconomic model, examines pricing post-merger, for the three MNOs using the classic upward pricing pressure (UPP) model for the lower bound and with a further technique (CMCR) for an upper bound. This has now been extended here (Chapter 10) for comparisons of results, by a merger simulation to further examine post-merger price increases.

Macroeconomic modelling surveys the expected impacts on GDP and social welfare for the Thai population using two macroeconomic models first Input-Output analysis used as input to a Computable General Equilibrium model. These models are now fed by the micro-economic models, as shown here in Chapter 10.

A tool from preliminary modelling of 5G rollout offers costing analysis of an engineering build, in Chapter 12, for an indication of marginal cost of a new subscriber in the future 5G market (and thus an imprecise estimator) of the merged enterprises' efficiency differences pre- and post-merger. However, such an analysis requires far deeper forensic accounting data on the merging parties and much greater effort to be reliably indicative.

Finally the report draws conclusions and recommendations for remedies in Chapters 13 and 14 – with a focus on potential economic and market conditions in which NBTC will make its conditions on the merger. Use of mitigating conditions to try ensure levels of competition post-merger is considered in Chapter 14 with various options for remedies, shaped by the merger decision, such as price controls, so methods of price control are considered.

In relation to market consolidation, it is noted that whether a particular merger is likely to result in a substantial lessening of competition depends on the *effectiveness of competition* that can be expected in the market post- merger, rather than just the number of competitors.

The regulator's stance on a potential merger would therefore be informed by the specific circumstances of that particular merger, taking into account how markets are evolving. That raises the possibility of potential wider benefits for society through support for a faster and more widespread rollout of high-quality networks. It is also incumbent upon the regulator to intend to create as much regulatory certainty as it can, in order to support investment both in the mobile sector and in the whole economy, due to the mobile sector's catalytic effect on investment, particularly critical for the middle income economies' growth prospects.

2 What is the evidence so far on the merger outcome?

Here we examine three econometric approaches but firstly that evidence, from the global experience, largely from mergers going from 4 to 3 MNOs as this future Thai case of two MNOs is so rare and is generally avoided.

International country survey

The country survey provides a quantitative analysis of international data on the effects of mobile market structure. We use two types of analysis – firstly large academic and industry surveys of mobile mergers across many years and also an in-depth analysis of five specific case histories, shown in Chapter 9.

The in-depth five country survey showed two cases of abuses of significant market power historically with a duopoly or monopoly and its deleterious effects (the Philippines and Mexico) and three cases where competition managed to survive a merger, with suitable conditions (Australia, the USA and the UK).

When looking at two key measures of economic impacts, the survey finds:-

- On price: there is quite strong evidence, mainly from 4 to 3 mergers, that higher market concentration raises prices significantly; in one survey, with a large number of country samples, a 4 to 3 merger is expected to raise prices by 16.3%[1]
- On investment and service quality: there is limited and less certain evidence; some mergers may have had a positive impact on these aspects, others a negative one.

Countries with 2 operators or a single dominant operator can languish in that state for a substantial period of time, with severely adverse effects on the economy – lowered take-up of mobile due to high pricing, infrastructure investment, weak stimulation of the digital economy as Internet access is typically via mobile This is because entrants face severe barriers, though a few entrants have succeeded in piercing the many barriers and competing effectively

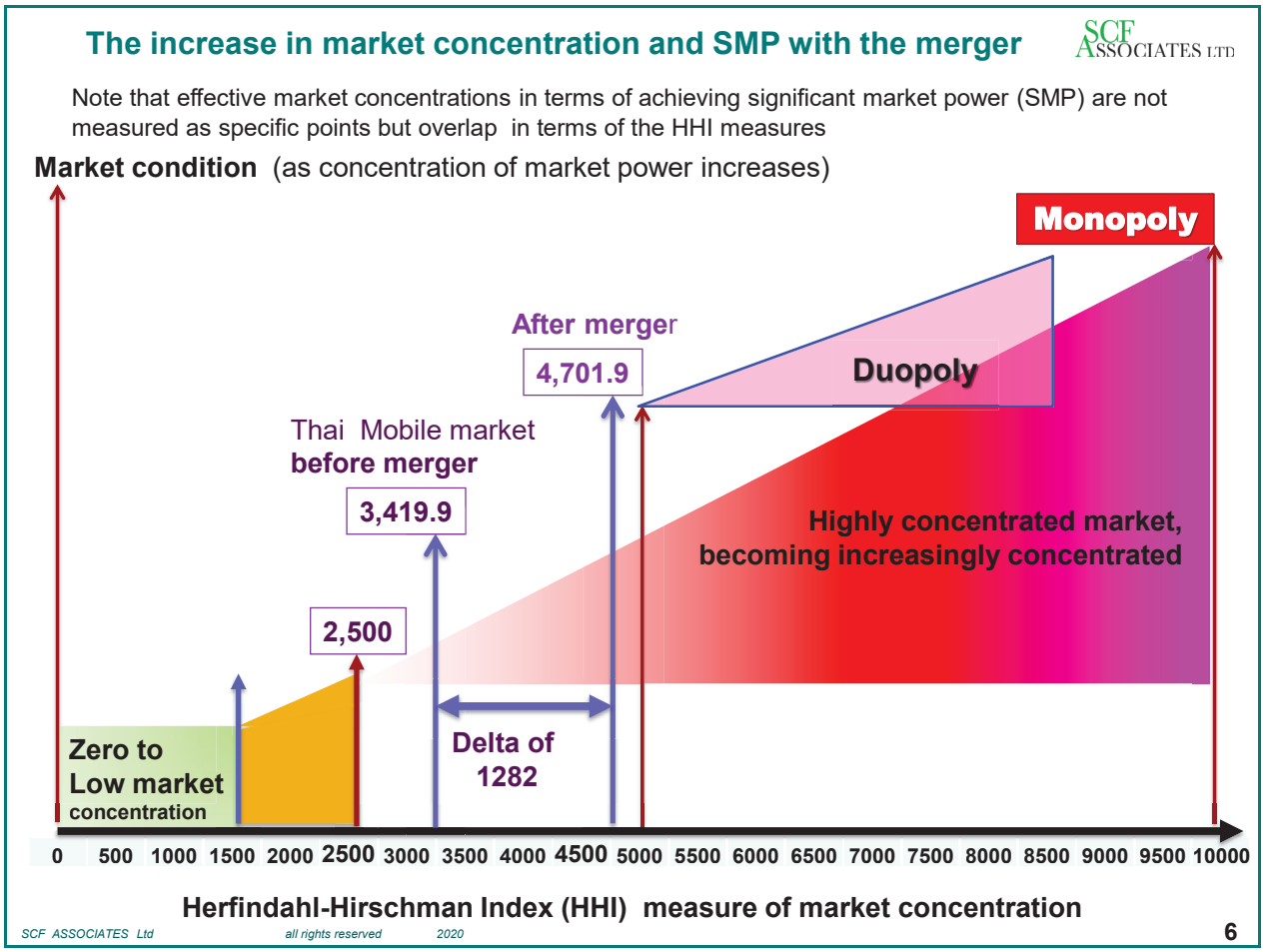
In several countries, two operators may join forces to share networks (including, but not only, for 5G infrastructure), while maintaining vigorous retail competition (as seen in the UK, where 4 MNOs share 2 national networks, as well as in Spain and France). This could be a feasible alternative to a merger, if permitted by the regulatory stipulations although in those countries the regulator maintain vigilance in supervision of competing offerings and price plans, expecting more consumer benefits from the infrastructure efficiencies and their opex and capex savings.

The broad competivity measure used by competition authorities, HHI

As part of multi-country study we incorporate results for the methodology that competition authorities in many countries use to compute an index of the concentration of a market, especially by the European Commission and the USA's regulatory authorities (Chapter 4). This is the HHI (Hirschman-Herfindalhl Index) which increases if a merger occurs. HHI is calculated by summing the squares of each firm's percentage of market share: hence 10,000 (100 x 100) is for a monopoly And HHI is 5,000 for two firms of equal size (50% x 50%) + (50% x 50%) in a duopoly by market share. In the USA (used by the Department of Justice and the Federal Trade Commission) where the initial HHI exceeds 2500 and the merger increases its level by more than 200 points, the merger will be presumed to be likely to increase market power (although that presumption is rebuttable) towards Significant Market Power (SMP).

[1] Genakos, Valletti, et al (2018) based on market data from 33 countries over 12 years

Fig 1 The Herfindahl-Hirschman Index (HHI) applied to the merger in the Thai market



Source: SCF Associates Ltd, data sources DoJ, https://www.justice.gov/atr/herfindahl-hirschman-index

In the Thai mobile market, the original HHI is already at around 3420. After the merger it would be almost 4702. That indicates a post-merger situation of strong market power concentration – which would be approaching the threshold of a duopoly situation, 5000 (2x 50% squared). That might either be a continuation of current reasonable competition or else would incline to rising prices, with less choice of offerings, plus relaxation of investment plans, for instance for 5G.

Evidence from microeconomic models analysis

Price increases are expected post-merger using the standard tests

The modelling approach exploits subscribers' switching behaviour and economic margins to predict the unilateral effects generated by the merger within the (gross) Upward Pricing Pressure index (GUPPI) framework. This is the standard test used by the European Union for mobile mergers.

We now examine the pricing and Operational costs (Opex) for each of the MNOs in the merger, and the competing MNO, AIS using corporate financial information and NBTC data.
The GUPPI model estimates the likely price increases following the merger between two companies. Our results show a price increase of 11.51% for DTAC from the 2019 data, which however rises up to more than 16% in 2021. As for True Move H, the GUPPI implies an upward price increase of roughly 11% from the 2019 data, which however decreases to 3% in 2021.

Market evidence shows that the economic performance of the smaller MNO, DTAC worsens over time, both in terms of margins and subscribers. In contrast, True Move H performs successfully over the timeframe examined (2019-2021) with an increasing pattern of subscribers and margins.

Use of switching patterns with Diversion Ratio estimates indicate that AIS poses a strong competitive pressure on the merging parties, particularly in the most recent years. This is evident if one compares the diversion ratios from mobile number portability (MNP) data with the data implied by the three MNOs' market shares.

We also use estimates of OPEX costs Compensating Marginal Cost reductions (CMCR) another standard modelling technique used in merger price effects, by the European Union and other regulators. It measures the amount of additional efficiency necessary to compensate for the price increase induced by the merger. That provides an upper bound on the price increases, expected post-merger.

The results produced by show that OPEX should decrease by roughly 15% for DTAC, and by approximately 9% for True Move H to completely compensate for post-merger price increases. These are the upper bounds on the price increases. Consequently we conclude that the merger will significantly increase the price in the Thai mobile market. DTAC would be the MNO benefiting the most from the merger, while the incentive to increase price for True Move H is more limited.

Results from GUPPI modelling analysis provide a *lower* bound on the unilateral effects of the merger. Hence, even in a case of competition between AIS and the merged entity, prices are expected to increase even more than the GUPPI model towards that of the CMCR model. A change of the competing MNOs' conduct from competition to coordination (or tacit collusion) would further increase post-merger prices in equilibrium.

This report also gives the results of a merger simulation at microeconomic level, which can feed into the macroeconomic modelling. The merger simulation provides additional evidence of the effects induced by the merger between DTAC and True Move. What we observe, is that price increase is expected to be mostly driven by DTAC, while the price rise for True Move is limited. This is consistent with the main findings from the UPP analysis, in which the price rise was notable for DTAC, as a consequence of the high margins enjoyed by True Move. Therefore, both the Upward Pricing Pressure (UPP) model, GUPPI, and the merger simulation point to the same conclusions:-

- The merger induces an increase in price in the Thai mobile market. According to the Merger Simulation, this amounts to a 10% increase, while UPP predicts an average increase in the range 11%-14%. Thus, the two results are very much comparable, economically meaningful, and credible.
- Most of the price increase is induced by the price rise of DTAC. The Merger Simulation predicts rise in DTAC's tariff price of about 47%, while GUPPI and CMCR predicts price increase of 16% and 22%, respectively.

Overall, results are qualitatively stable, and can be rationalised by the high performance of True Move in the market, which allows DTAC to increase tariff prices after the merger (see UPP analysis on this point). We therefore conclude that the UPP analysis provides a more informative approach in the assessment of the unilateral effects of the merger than the merger simulation.

Macroeconomic impacts from the models – Input Output model with Computable General Equilibrium (CGE) modelling

The analysis given in Chapter 3 using the Input-Output and Computable General Equilibrium models has been expanded from the previous version of Progress Report 2 and now offers a broader view with multiple scenarios and extensions for inputs from the microeconomic results.

Losses to the economy and to GDP are forecast post-merger

The macroeconomic impacts of the merger have been shown through the simulation using an advanced Computable General Equilibrium (CGE) model with an Input Output model as the data reference. This model simulates the whole economy of Thailand in 2022 based on the Input-Output Table provided by The Office of the National Economic and Social Development Council (NESDC) in 2015 (the latest version), and modified to add the telecommunications and digital sectors in 2017. The algorithm of the model uses the KS-CGE Mark IV processing suite (2022 version). The CGE model can illustrate the macroeconomic impacts of the merger by the assumption of the possible lower investment in the telecommunications facilities and infrastructures caused by reduced competition post-merger with possible collusion of the MNOs that will harm the national economy by the reduction of GDP growth, real GDP growth and the growth of all the production sectors as well as households. The study assumes the potential investment of THB67,500 million of the 5G facilities and infrastructures in case of no merger after 2022. Then it investigates what would happen if the investment level is 20 per cent and 50 per cent lower than the assumption with the two reduction cases being projections of possible investment decreases to show the impacts.

In the first case when the investment is 20 per cent lower than the assumption (THB54,000 million), the model finds the loss of GDP growth around 0.61 per cent in 5 years. The corresponding financial loss amounts to around THB98,460 million and the loss of social welfare measured by compensating variation (CV) around THB52 million over 5 years.

All production sectors and households would suffer from a loss of income compared to that they would expect to gain without the merger. This market condition also reduces the total taxes that would be collected and also slows down other investments that would be induced into the economy.

In the second case when the investment is 50 per cent lower than the assumption (THB33,750 million), the economy will lose the GDP growth by 1.52 per cent in 5 years. The cost of the merger in terms of the loss of GDP growth is around THB244,380 million and the social welfare loss amounts to THB129 million over 5 years. All the production sectors and household economies lose their opportunities to grow faster. The whole economy will not reach its highest potential for the development that should be driven by the faster investment of telecommunications facilities and infrastructures.

The losses of nominal GDP and real GDP due to the merger can be linearized by the lower investment. Each of THB1,000 million of the more investment in telecommunications facilities and infrastructures would recover THB7,158 million and THB689 million of the losses of nominal GDP and real GDP respectively.

In summary, considering the loss to the nationwide economy in terms of the economic opportunity that would be driven by 5G technology, the CGE model quantifies the damage to the economy when lower investment is assumed. However, it does not predict that lower investment will occur after the merger. It is only noted that lower investment is introduced as a reasonable assumption. If the assumption is justified and endorsed by policy makers, then the loss to the economy is foreseen by the model.

As a the remedy for the merger, the losses mentioned could be recovered by regulation to encourage the competitiors remaining in the market to invest more and not less than THB67,500 million in the 5G facilities and infrastructures as soon as possible after the merger.

Effects of rising prices for consumers and the expenditure shifts are also explored, based on findings in Chapter 2, with the merger driving up the mobile tariffs from by at least 7% up to far higher prices, which may affect households' expenditure towards telecommunications sector and reduce other products and services due to their fixed income. The behavioral change of subscribers in response to price change may cut both telecoms and other consumption, impacting the national economy. The CGE model can quantify these effects of rising prices and the expenditure shifts following these steps.

The macroeconomic analysis also looks at the social welfare impacts of the merger via a compensating variation[2] (CV) model. This is based on the assertion that prices rise an individual will consume a lower amount of goods and so gains less utility, which in the large has macroeconomic effects.

Estimates from an engineering business model of rollout of the Thai 5G infrastructure with analytic insights on marginal costs and efficiencies

Reduced marginal costs of 5G subscriber addition are forecast post-merger but many additional costs may intervene to compensate for this

To look more closely at cost analysis of under future market directions, Chapter 4 offers a business model of the 5G rollout by the pre-merger MNOs against of the merged enterprise has been used to examine the marginal costs post-merger. This indicates the potential for efficiencies using the marginal or incremental cost of adding one subscriber in a 5G build out using a market build, with analysis over a ten year cycle. It relies on analysis of the network build for 5G for each MNO, including the newly merged MNO. That requires a country analysis for cellular equipment siting in which the spectrum bandwidth is chosen to optimise cost and number of basestations to be installed. From this costing model, conclusions on subscriber marginal cost can be built up with rollout over years. Note that this is a projection model making many assumptions and so its estimates of marginal costs are at best a first indication. To this network cost simulation there needs to be added a wide range of operational costs, for a merged entity, based on the internal business processes that govern each MNO's activity to provide services. It clear that the merged enterprise will have duplication of business units and operational systems but the costs of integrating their business processes into a single entity require far greater accounting detail than is to hand and so this is an indicative estimation of the trends at the most. The merged enterprise is shown in this marginal costing exercise to be more efficient but the practical implementation of the merger may have many additional costs that only a forensic accounting exercise with account separation would reveal.

3 What does the evidence show about the market post-merger?

Projecting this post-merger market is essentially highly problematic, but taking the evidence collectively from the international surveys, with the three economic modelling methods, the market might follow several possible longer term conditions, that may follow an early initial stage, which include:-

1 The initial market condition may be one of continued competition between the newly merged entity and the remaining major MNO and the much smaller player, NT, in which price following does not occur – ie cutting prices does not cause the competing MNO to also cut its prices, so MNOs act independently (sometimes termed a Bertrand Duopoly). The merged entity may have upward pricing pressure, but the other MNOs do not necessarily follow - but there is no third player to act as a counterbalance, so prices might gradually rise.

2 Longer term, there is no guarantee that after some time the two major MNOs do not recognise that in practice their actions are interdependent and better profits lie in avoiding pricing or offers which lead to mutually harmful forms of competition, so some form of collusive behaviour arises. Prices may rise at the levels indicated by the microeconomic modelling while investment in infrastructure for new rollouts such as 5G and innovative offers may decrease.

3 It is also possible that either in a near-term move, or after several years, one of the MNOs decides that very aggressive tactics could be successful, so possibly reducing prices, perhaps in a price war might be useful to gain major market share and market power. That may be quite unlikely but could be envisaged.

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[2] Introduced by Hicks JR (1939) *Value and Capital*, Clarendon Press, also developed by N. Kaldor, and by E.E. Slutsky (1915), also Henderson and Hicks (1941, 1942, 1956).

4 In Conclusion

Our investigation has examined in detail five aspects of the proposed merger:-

1) The impact of the merger on the l HHI index, an internationally used regulatory measure of mobile market concentration. It indicates that the merger raises sector consolidation to a level which would be unacceptable by normal regulatory standards elsewhere.
2) The micro-economic simulation of the Thai mobile market, which anticipates a significant price increase following the merger.
3) The macro-economic modelling which presumably depicts several assumptions regarding a decline in investment and also in the spread of advanced mobile technologies throughout the country following the merger as well as a loss to GDP growth.
4) The analysis of the marginal cost using an engineering business model for 5G rollout which expects the merger would could give reduced subscriber marginal cost but the full impacts of the merger may reduce those cost gains (and moreover the detailed accounting data for this is not available under the current regulatory administration –access to the full data of the merging parties is essential to understand the merged MNO, as noted in the recommendations). It is indispensable that the NBTC gain access to forensic accounting teams for telecommunications accounting audits to manage the merger competently.
5) The analysis of international experience of mobile mergers is broadly consistent with the observations made above on pricing and impacts on GDP.

Possible mitigation includes the prospect of introducing a new operator to the Thai market as the solution to increasing competition. A new entrant is unlikely, however, due to the difficulties technically, financially and logistically (in terms of sites and infrastructure build) as well as in obtaining the necessary spectrum - as sharing it is unlikely. So the focus on a wholesale market with MVNOs, which previously has never flowered in Thailand, should be seen as a major opportunity to restore competitive balance, as in many other flourishing economies.

Note that the difficulties of mobile market entry in Thailand are increasing as the market becomes one of bundled offers (with fixed broadband and other services) which raise extra barriers to entry, if the other offerings are not present and have to be created, or acquired and then built up, especially for fibre optic broadband.

Returning to the overall macro-economic analysis (Chapter 3 of Progress Report 3 in the Final Report), this has illustrated the application of the Computable General Equilibrium (CGE) model with an Input Output (IO) model in relation to changes in the Thai telecommunications sector. The modelling shows the effects on GDP and on sectoral outputs of two variants of a reduction in investment in the sector, by 20% and 50%. Unsurprisingly, GDP growth is less in the latter case than in the former. Also note that a reduction in competition following the merger may have the effect of reducing sector investment. However, these numbers do not incorporate the further effects of the merger in terms of the price increases which its associated reduction in competition may generate with the resulting changes in demand. These may produce a further reduction in GDP growth.

Finally, the rising price of mobile services after the merger as expected by results in Chapter 2 (from the microeconomic models) will cause the nationwide economy to move into recession according to the CGE results of Chapter 3 under assumptions of fixed income. The modelling indicates that GDP will be reduced by 0.51 per cent to 1.95 per cent in case of no substitutions, and around 0.48 per cent to 1.49 per cent in case of the flexibilities to reduce the usages in response to price change. The cost on nominal GDP is THB 81,616 million to THB 313,674

million in the first case, Case 1[3], and THB 76,643 million to THB 240,172 million in the second case, Case 2[4]. The real GDP would reduce by THB 1,863 to THB 9,120 million in Case 1 and THB 1,739 to THB 6,541 million in Case 2. Thai society will suffer a welfare loss of around THB 47 million to THB 179 million in the case without substitutions, and THB 55 million to THB 137 million in the case of flexibilities of the responses the price change. All the losses presented in the first case are larger than in the second case because of the rigidity of behavioural change in the short term of subscribers. In the long run, people change their behaviours in response to price changes. Some individuals may reduce their usages of their mobile phones, while some may still ignore the price change. Therefore, case 1 in the model may illustrate the short-run impacts and case 2 may represent the long-run impacts of the price changes.

From all of this we summarise a set of final recommendations for immediate actions in remedies and policy directions, below.

5 Our recommendations and remedies

The decision to acknowledge the merger with conditions requires considering practical recommendations that might sustain competition, or in its absence, restore pricing and investment strategies for the two remaining major MNOs that ensures Thailand's growth and prosperity is linked to this merger as mobile is so important to a modern economy's further development. Hence it is unclear whether the NBTC needs to gain further statutory legal powers and resources it may lack currently with the necessary administrative support, including funding. Countries such as France, Germany and the UK have such regulatory structures, all modelled on the European Union legislative instruments. The alternative is the body of legislation enabling the USA's FCC and DoJ to support competitive markets. The EU model is far more recent (effectively since 1996) and far more encompassing in scope, as it has to deal with 27 countries. Essentially the question is - what could be the remedies in the event of a merger, to mitigate the loss of competition? Remedies put forward for attempting to balance the merger include various near-term tactics to limit market foreclosure with longer term strategies to expand the level of competition, which can be of various kinds:-

- One common longer term strategy, used in France, Germany, Ireland, Austria and to some extent in the UK, is to seed a lively *wholesale* market, in which new competition can grow from those enterprises buying mobile capacity at wholesale prices to resell in the retail market. These are the Mobile Virtual Network Operators (MVNOs) hosted by an MNO. They tend to sell services via prepaid cards to specific communities or market segments such a students, or to specific business sectors such as logistics, with their vertical sector mobile apps. The wholesale relationship is difficult as MNOs may be reluctant to participate seeing their infrastructure capacity cannibalised– as may be the case in Thailand - and so will require strong regulatory intervention to conform.
- A shorter term strategy may be to try to limit spectrum flexibility – for instance in regulatory restrictions on re-uses of spectrum licences so bands cannot be merged – but that may not make sense for the merging parties who could probably find legal means to overturn or ignore such strictures especially as this could actually harm the subscriber base. Moreover allowing the two MNOs to form a shared infrastructure and compete at service level (as in Spain, UK etc) could be advantageous.

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[3] **CASE 1: Macroeconomic impacts of the price rise without substitutions:** Assumes fixed income of households with no substitutions of mobile services, and zero price elasticity, so households spend more on telecommunications services and less for other products and services.

[4] **CASE 2: Macroeconomic impacts of the price rise with substitutions**: Assumes households have fixed income and non-zero price elasticity, and can reduce usage of mobile services in response to the price rise. However, they may still have to spend more on telecommunications services and less for other products and services.

- Use of the small fourth MNO, NT, as a market entry vehicle seems most unlikely. Firstly, it is a state enterprise owned by an administrative department. Moreover, NT is small compared to the major MNOs (with 4% of the mobile market by subscriber numbers) and so cannot by itself provide competitive bundles of multiple services at the scale needed to compete. Moreover, its spectrum is already leased to the current MNOs.
- Generally such remedies require the regulatory agency to have strong legal powers particularly powers of enforcement by fines directly, plus rapid court processes for the accompanying supporting legislation.

Consequently the regulator must have adequate resources – financial, administrative, legal, and technical to carry out monitoring and legal enforcement of contractual relationships as well as specialist activities, such as participating in MVNO negotiations to ensure MNOs are serious in their wholesale pricing. Regulators in Europe and the USA have these budgets, powers, experienced staff and resources for market supervision with intervention - with a close following by government as the mobile market is recognised as a sector that requires extremely careful handling to encourage continued investment and its role as a public good.

Thus at the very least the NBTC will need access to regulatory forensic accounting teams to follow the cost structures within the merging parties and their evolution in the merged enterprise, if it is to create a new wholesale market. The full report goes into these remedies and the supporting evidence in further detail.

